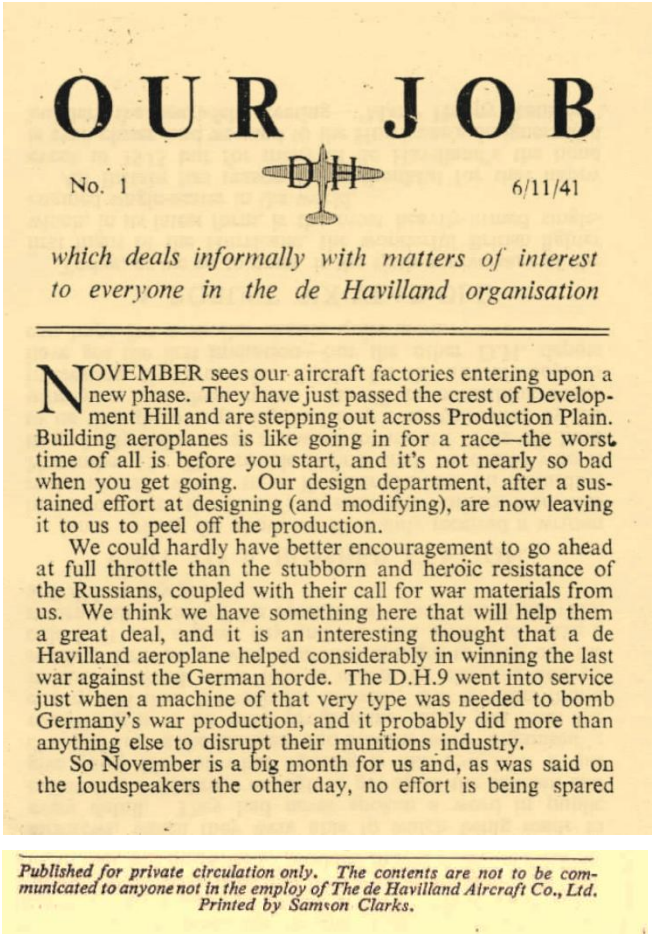
OUR JOB

The de Havilland organisation had to expand rapidly during the Second World War, particularly when the Mosquito went into production. From the headquarters at Hatfield were run factories at Stag Lane & Stonegrove, Lostock (the propeller shadow factory), Witney (the Oxfordshire repair workshops), Rogerstone (the Forge Company in Newport), Leavesden (then Government-owned but run by de Havilland) and the Airspeed factories at Portsmouth and Christchurch, by then controlled by de Havilland.

OUR JOB first appeared in November 1941 and was terminated late in 1945, after 62 issues. The last three are not in the present compilation. They were 3.4 inch x 4.4 inch booklets, usually of eight pages, occasionally twelve. The foot of the back page noted that it was a private publication.

As can be seen on reading through, they encouraged good working practice and emphasised areas for improvement. Reports of visits by service personnel and by high-up Ministry people were included. There were frequent mentions of individual activity, with many names mentioned and many photographs of employees at all levels. Fund-raising and leisure activities were reported.

Bookmarks by issue have been set. Optical character recognition has been applied, but due to the low quality of the original booklets, text in italics unfortunately is rarely recognised.



OUR JOB

No. 1 6/11/41

which deals informally with matters of interest to everyone in the de Havilland organisation

NOVEMBER sees our aircraft factories entering upon a new phase. They have just passed the crest of Development Hill and are stepping out across Production Plain. Building aeroplanes is like going in for a race—the worst time of all is before you start, and it's not nearly so bad when you get going. Our design department, after a sustained effort at designing (and modifying), are now leaving it to us to peel off the production.

We could hardly have better encouragement to go ahead at full throttle than the stubborn and heroic resistance of the Russians, coupled with their call for war materials from us. We think we have something here that will help them a great deal, and it is an interesting thought that a de Havilland aeroplane helped considerably in winning the last war against the German horde. The D.H.9 went into service just when a machine of that very type was needed to bomb Germany's war production, and it probably did more than anything else to disrupt their munitions industry.

So November is a big month for us and, as was said on the loudspeakers the other day, no effort is being spared

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This compilation published by the de Havilland Aeronautical Technical School Association, December 2025.

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to overcome every obstacle to the full employment of our man-power.

This little bulletin will be useful for telling us how the job is going and for keeping us in tovch with one another throughout our various departments.

FIGHTER PILOTS IN THE FACTORY

This picture was taken a couple of weeks ago when our main airscrew and engine factory had a visit from two fighter pilots who came straight from their operating base and were back there and " on call " again very soon afterwards. Our people got word of their arrival over the loudspeakers and tried to give them the kind of welcome they deserved. One was from Australia, young as squadron leaders go, even in these days, yet a veteran " offensive sweeper " with the D.F.C. and bar. The other said he was wearing a new uniform for almost the first time, having got the D.F.M. for fighting as a sergeant and just been given a commission. Both were Spitfire men, enthusiastic about their new cannon-firing machines and about D.H. airscrews, which they were able to watch being made in every detail. They had never spoken a word in public before but were brave enough to get up in the canteen and give some idea of what fighting is like and how it has changed during the past year and become more " organised " ; everything is to an exact programme—until you meet the enemy and then it's each for himself. Our workers found it hard to thank these fellows except by clapping and by sending them away with cigarettes and gin to keep out the cold ! It was a great day and we were invited to make a return visit to one of the operational squadrons in the field, and did we say yes !

VISIT TO A BOMBER STATION

Since writing the above we have duly received a written invitation from the R.A.F. to send ten workers from our main aircraft works to a Bomber Station on Saturday, November 15. The trouble is how shall we decide who is to go ? By ballot or as a reward for merit ? This will have to be thought out quickly and may even be settled by the time you read these notes. It will be something really interesting, that's certain. Lucky for the aircraft boys to have got the first invitation—but the other D.H. depots can hope for a similar chance quite soon.

A ROBUST SIX-YEAR-OLD

Today, as we go to press, is the sixth anniversary of the first flight of the Hurricane, the wonderful British fighter which, in its latest form, is the most heavily-armed single-engined single-seater in the world.

All Britain has reason to be thankful for that happy event in 1935 but for many at de Havilland's the bond is even closer, and we send to the Hurricane's designers and builders the heart-felt greeting—"Many Happy Returns."

OUR STINGER ON SHOW

Some hundreds of people who are very close friends of ours came to the aircraft factory on Saturday and saw something they are all helping to make. Their problems are our problems and our problems are their problems—very much so. They are the sub-contractors who are getting down to big quantity production for the good of the cause of ourselves and the Russians, and others. They said they had been making parts and modifying them and getting them right and they wanted to have a look at the job itself. Well, they saw it, on the floor and in the air. Many of them cricked their necks watching the fly past, but they went away believing. Mr. C. G. Long, our chief development engineer, who has all the responsibility of putting out these sub-contracts—and apologising every time the Drawing Office issue another "mod"—says it undoubtedly was

(*Above*) *Members of the engine and airscrew contingent [recognise them ?] chatting with Mr. Geoffrey de H.*

(*Left*). *Many of them cricked their necks.*

heartening to watch these men looking at the parts they make being fitted into the job itself, and they *were* impressed with the performance out of doors, northerly breezes and red ears notwithstanding. When they were having tea afterwards Mr. Hearle stood on a table and thanked them for their co-operation—and he has watched every D.H. prototype through its paces and into production since 1908, when he helped Capt. de Havilland build his very first aeroplane. What a picture those Edwardian motoring caps made worn back to front !

BONUS TIMES

It is, perhaps, mainly among newcomers that there is an unfortunate impression that it is in the long run unwise consistently to earn high bonus time, for the management may later decide to reduce the basic manufacturing time. We posed the question straight to Mr. Lee Murray and to Mr. H. J. Nixon on the airscrew and engine side, who both plainly state :

> "Times are placed on jobs to encourage fast work. The management puts no limit on the amount of bonus which can be earned, and will not cut any time unless the method is altered. The method will only be altered if by doing so a reduction in the actual manufacturing time is obtained."

Individual doubts described above may be the reason why "clocking-off" a job is not always done immediately the work is finished. With the explanation we have now received there is no point in losing not only bonus time but also waiting time, as Mr. Murray added :

> "The accurate clocking on and off jobs is essential in order to allow proper records to be maintained. These records are of great value to the management in showing where additional attention is required to ensure a proper flow of work. This is particularly true of waiting time, and any attempt to hide waiting time by clocking on to incorrect job numbers, or losing it in the time given for a job, reduces production."

OUR MEMORABLE ROYAL AIR FORCE BENEVOLENT FUND WEEK

When the idea was first discussed that we, at the main aircraft factory and its dispersal centres, should devote one week's spare time (as if we had any !) to raising something for the Royal Air Force Benevolent Fund, the first impression was that we would get "over £200." Everybody lent a hand devising ways and means of swelling the contribution. Boxing show and dances, whist drive and flower show, gym display and first-aid demonstration followed one another evening by evening with their organisers vieing with each other to bring the biggest offering to the Fund. After the fine show by the R.A.F. Concert Party, which marked the culmination of the week, the total reached a figure no less impressive than £1,000. This fine sum undoubtedly expresses better than words the feeling of us all that we in the aircraft industry have a particular bond of interdependence with the men of the Royal Air Force. Our gratitude to the air crews, although not easily expressed, is profound.

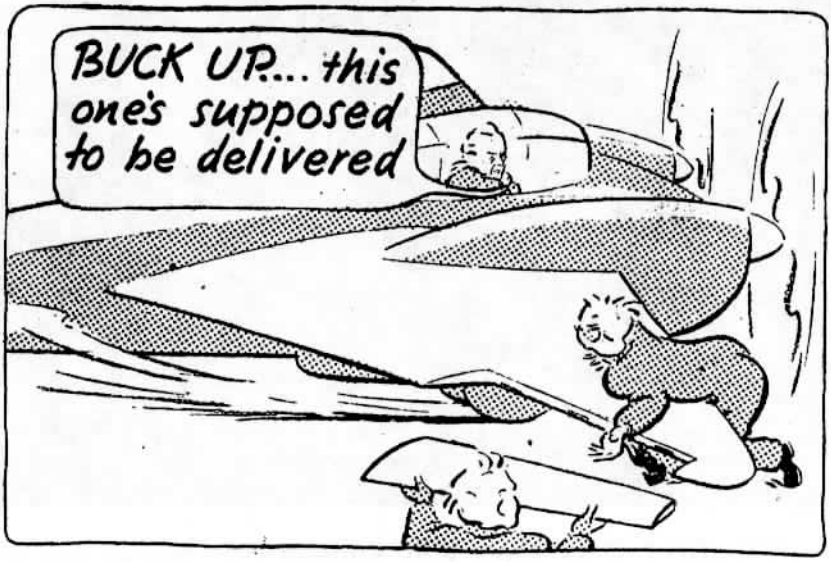
In acknowledging the final cheque, the Secretary of the Fund wrote to Mr. Holloway : "I am to convey to you, and through you to the employees of your factory and shops, the very sincere appreciation of my Chairman and Council, not only of the help they have so kindly and generously given in this material way, but in the sympathy and understanding shown in the future welfare of our gallant airmen and their dependents."

Rumour has it that another grand R.A.F. Benevolent Fund drive is going to start this week-end.

TRACING TRANSPORT TROUBLES

Waiting in a 'bus queue is not enjoyable. At night after a day's work it is even less interesting, and winter weather makes it utterly abominable. We are glad to hear, therefore, that following the hard work which Mr. Taylor, Mr. Wilson, and others have put into solving travel problems—especially since they are complicated by dispersal — a further enquiry has now been started into the difficult cases which still trouble some of our people. The present is a good time for such an investigation because, with the increase in overtime working which may be expected now

that several of our big shops are getting into the swing of production on a new programme, some main aircraft and dispersal centres will be needing altered 'bus services and augmented capacity at certain new times.



Operation 4N?

TALE END

Inmate of asylum approaches painter hard at work on the ceiling :—

"Hey, mister, have you got a good hold on that brush?"

"I think so, why?"

"Well, hang on tight—I'm going to move this ladder."

[That's not very funny. If you know any better ones, send them in. If they're not too bad we'll print them.—Ed.]

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OUR JOB

No. 2 20/11/41

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ANYBODY who was not present at the meeting which the shop stewards called on Nov. 7 at our main aircraft works missed a heartening experience. The engine and airscrew people and those in the repair and overhaul depots ought to be told about it and will find it refreshing.

The meeting was called to discuss and vote on a proposal to come in and work on Sunday, Nov. 9, in force, and to donate half of Sunday's earnings to the Russians, handing the money over to the Soviet Embassy in London. The proposal to work on Sunday was carried, and the matter of the donation was left to each to decide for himself, or herself—we have quite a lot of women workers nowadays.

Mr. Trounce took the chair and called on Mr. Sell to explain the plan. He emphasised from the first that to put out a special effort one Sunday and then sit back was not the idea at all. The whole point was to get together and realise the need for a still greater productive drive on the part of everybody in the factory, and the Sunday suggestion

was simply to make a start, a gesture, to focus attention and get a new spirit moving. There were questions about the donation proposal but he and others maintained that that was not the main point and could be left to individual opinion. Mr. Sell's principal plea was to get down to the job, to seek out obstacles to production and overcome them, and not to raise niggling objections to this Sunday scheme when all were agreed on the main issue—the compelling need for output and more output.

Speakers said that Russia was bearing the main brunt just now and to help Russia was to help ourselves. If the Germans were invading our land there would be no time to argue over small matters.

It was a pity that every single worker and every member of the office staff and design staff, everybody in the whole organisation, could not have been present to hear and to sense what others thought and to put their own views forward. It is so difficult to get a vast number of people together, and to provide the time for all to say what is on their minds. But this meeting left no doubt about the unanimous desire for more efficiency all round and the self-searching frankness of several speakers revealed an attitude which we should all emulate.

The response to the meeting was that on the following Sunday some sixty per cent. of the factory working capacity (as suggested in advance by the foremen) came in for a full day's work.

How can we best turn to purpose the sincere and urgent feeling that is obviously stirring in all of us?

In every organisation there must always be room for improvement: especially when a new job is being tackled new ideas for efficiency must suggest themselves daily. Our determination to make November a month of special effort, surely, should be interpreted as an effort by everybody, from the youngest apprentice to Mr. Hearle himself, to make improvements in our system which will show permanently better results—not just a production drive for one month with no logical sequel. If every member of every department —the design, planning, progressing and supervisory personnel, every chargehand, every man and every woman in the entire works and offices—will do all in their power to secure the adoption of any practical and promising idea for increasing efficiency then we must surely achieve the all-round improvement which is our aim.

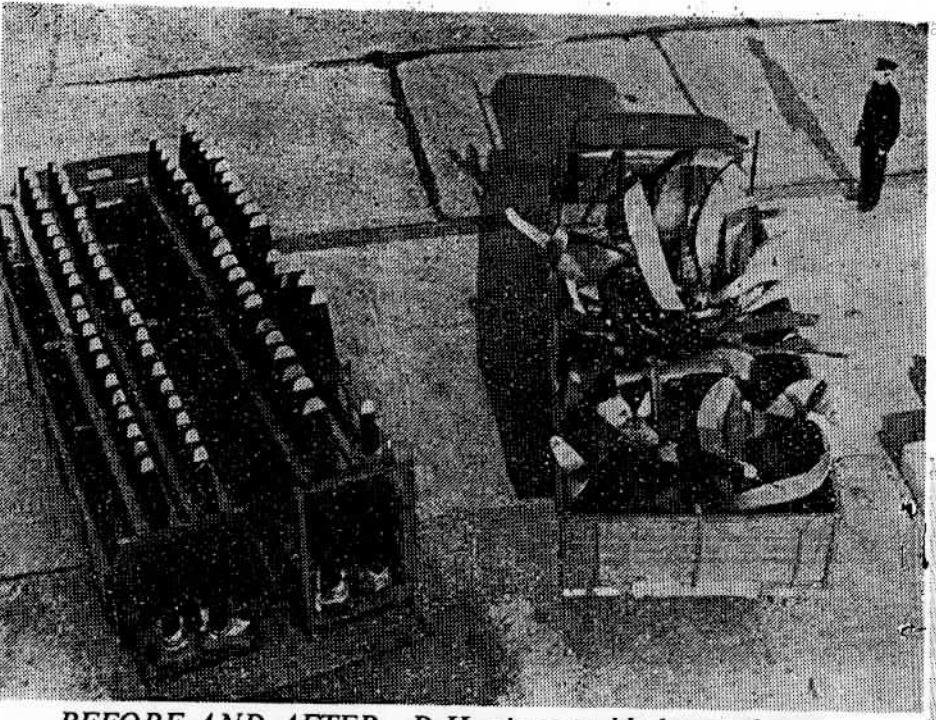
Not one among us has the right to preach efficiency to the others, but not one of us can be denied the right to practise efficiency himself, and we all have a duty to each other to beat this despicable enemy who is unfortunate enough to be incapable of enjoying anybody's well-being except his own.

As Mr. Sell said at the works meeting, the respite from bombing here is inclined to make us forget how near this enemy is, how great is our need for aircraft and all munitions.

Defeat, the unthinkable thing that it is, would mean much worse than loss of liberty, loss of rights, subjection—it would mean cruel maltreatment and unbearable humiliation, division of families, killing and torture—here in this country that looks so fair and secure. Those things go on just 23 miles across from the Dover cliffs and they go on nearly all over Europe.

We could not be engaged upon more vitally important production and repair work than we are, and we cannot afford to relax for one moment. Let us remember Mr. Churchill's words at the opening of Parliament last week, that the process of self-improvement is continuous and that everyone should try himself by his conscience every day.

And remember, even a kind word, even a smile, is an aid to efficiency.



BEFORE AND AFTER. D.H. airscrew blades as they come in from the fray, and as they go out again. Eighty per cent. of them are repairable, including many pierced by bullets.

THE BULLDOG DOESN'T LET GO

When the shop supervision staff at our central aircraft repair depot got together for an evening meal and a chat over things in our new canteen the other night there was a feeling that out of a lot of problems and not much in the way of buildings or equipment a tidy and efficient works has taken shape which can turn out the aeroplanes now in a steady and increasing flow, and that there is not much in the way of airframe overhaul—metal or wood—that cannot be tackled. This depot really did have to build up from practically nothing, and had to struggle to get the hangars and machines and tools it needed for the work that was pouring in. It was a case of sticking tight and not letting go, and the results are visible now on all sides. There hasn't been time for a leisurely get-together hitherto, and on this very cordial evening Mr. Marshall made his first speech. Mr. Ken Brown, works superintendent, greeted their guest, Sir Archibald Southby, M.P., who has always been interested in our organisation, and who gave a very entertaining talk about things that interest all of us. The canteen is going to be a cosy spot this winter.

Getting the grip of it : Michi takes a lesson from Fl/.Lt. R. L. Jones, test pilot of our central aircraft repair depot.

WINTER TECHNICAL COURSE NOW STARTING

Not only the apprentices and students can attend the winter course of evening lectures in aeronautical subjects which is provided at lecture halls near to our main aircraft and engine works. They are open—as they have been in previous years—to any man or woman in the entire D.H. organisation. There is a standard fee of 30s. for the winter session, no matter which subjects or how many subjects are taken, but most people will find that three subjects is about enough, and choose their evenings accordingly. The lectures are from 6 p.m. to 8 p.m. Mondays to Fridays, and the subjects include mathematics, aircraft materials, structures, factory organisation, aerodynamics, etc. Apply to the Technical School Office at head office for details. The new session has started already and the classes are forming and shaking down. There is still time to join, but no time to lose.

D.H. PARTY SEES THE BOMBERS

A party of 10 from our aircraft factories visited a bomber station last Saturday at the invitation of the R.A.F. and had a good time. They were chosen as representatively as possible—three Charge Hands (Messrs. Cornhill, Howells and Bullock), three Shop Stewards (Messrs. Sale, Shade and Trounce), a Shop Superintendent (Mr. Grinter), Mr. Peters from the Design Office, Mr. Amey from the Jig and Tool D.O., and Mr. Holland from the Tech. School. Although ladies had not been invited, Miss Anderson and Miss Nixon, who drove the party there were lucky enough to see round the station also. Mr. Grinter writes :

" Changeable weather prevented the trip being done by air and the party arrived at the station by road just before lunch. Members of the squadron and the M.A.P. welcomed them in the squadron mess and before lunch interesting

GUESTS OF THE BOMBER BOYS. Left to right :— Messrs. T. H. Trounce, D. Shade, A. R. Sell, A. C. Cornhill, W. T. Howells, R. J. T. Holland, G. S. F. Amey, J. K. Bullock, A. J. Peters, R. C. Grinter.

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" After lunch a tour of the aerodrome was made, the highspot being the bombing-up of some of the newest bombers with the beautiful, big new bombs we have read about. Certainly they have something to worry about on the other side ! A repair and overhaul hangar was visited where everyone was able to inspect one of these new aircraft closely. The problems of producing and maintaining such machines could be appreciated. The adjutant had kindly arranged to have photographs of the party taken and then

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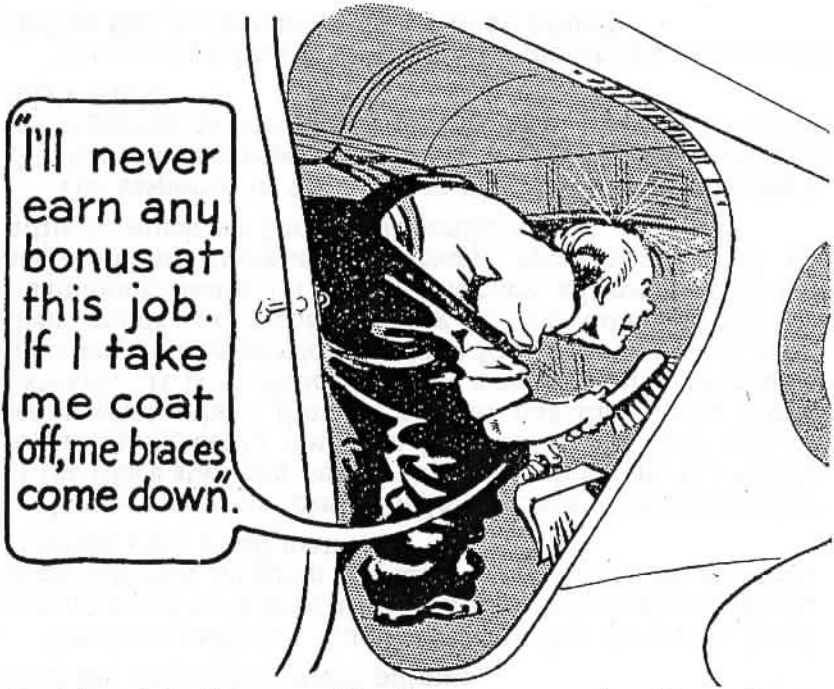
came tea and a reluctant departure. Many more interesting hours could well have been spent there but even a short visit made one realise how much these men are worthy of any effort it is possible for the individual to give in order to help them do their job."

When the party left at dusk the bomber crews were getting ready to take off for their German targets which we heard next day had been duly plastered.



Overheard in the assembly shop : a remark addressed to a well-known works superintendent.

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OUR JOB

No. 3 4/12/41

which deals informally with matters of interest to everyone in the de Havilland organisation

IN our first issue there was a remark that this bulletin would be useful for keeping our various departments in touch with one another and with our progress generally. "But," said someone in the aircraft factory, "does the bulletin explain why on this job we still get 20 or 30 mods. a day? How can we peel off the production when the drawings are being altered all the time?"

If we can give an airing to such problems—problems which are talked over at the production committee meetings but which it is not possible to explain individually from end to end of the organisation—then this bulletin will be useful.

How is it that we are urging production of an aeroplane when the drawings are still being modified? Or, to use the exact words of one of the foremen, "Can't the Drawing Office make up their minds?" Probably the D.O's best answer to the latter question would be, "You come and try yourself."

Let us consider these designers and technicians. Their task and their responsibility are great indeed, for out of their profound knowledge and experience they have to create an aeroplane, from the first stirring of the imagination right down to the size, shape and material of the smallest cowling clip.

We can tell whether the D.O. know their job by whether the aeroplane is a great success or not. Is it something to

beat the enemy—yes or no ? Is it an advance on all previous types ? Is it highly manœuvrable, is it fast for the power it uses, has it the range and payload to get at the enemy effectively, does the R.A.F. pilot feel confident flying it, does he in bad weather, can it be manufactured easily, repaired easily, is it economical in materials, especially forgings and the like, is it as good as the best in the world to-day, perhaps better than anything in its class ; in fact, is it a winner ? If it is, then the designers are remarkable men. If they are as good as all that, then they can't be putting out 15 to 20 mods. a day for reasons of stupidity.

Perhaps the principal reason is that *we proceed with arrangements for quantity manufacture before the prototype has been built*. And the fact that no major alterations have to be made afterwards, even with a highly advanced design of aircraft, is proof of high skill, to say the very least.

Of course small errors occur, and the D.O. are jumped on for them. The main cause is the difficulty of co-ordinating thousands of drawings from the office, and having insufficient opportunity for checking them on the aeroplane itself. To eradicate such errors absolutely the D.O. should have six months to issue their production drawings from the time the flight trials are completed ; the volume of work is enormous. Even in peace time commercial competition—particularly with foreign manufacturers—makes this impossible. In war time not only do we save these six months —we actually start production **before** the flight tests begin, and so save a further six months.

Is it right to do so ? Yes, in time of war it *must* be done. The enemy do it—and put up with the headaches. It saves a year. We must do the same and put up with the same headaches.

But that is not all. While a new type is being developed the methods of air war are changing. The requirements vary from month to month. Day fighting, then night fighting with all its problems and fresh lessons, special tactics for the battle of the Atlantic, daylight sweeps by bomb-dropping fighters flying at 50 ft. or less. Every new lesson is brought before the designer and *while he is creating his aeroplane he is forced to introduce new ideas at every stage so as to make it the very best and latest weapon in the air war*. He may even have to produce several versions of the one basic aircraft type.

The best help we can give to the D.O. working in war conditions is to let them know the practical problems in the shops and to help through the mods. even when they are aggravating. And the D.O. can help by co-operating more among themselves and with the shops in the issuing of mods. The great thing is to understand each other's problems.

Nothing is so good as an example. The design of a manifold might not seem to be a difficult thing. But it is not easy to get flame concealment without drag, without burning, without heaviness. Considerable testing in the sky at night is necessary. But maybe the prototype aeroplane cannot be spared for those tests because some more urgent and complicated tests of armament must be done first. What are you going to do ? Send it into battle without testing the armament design ? Kill off a few of our pilots while getting it right ? Take a chance with the exhaust system ? No. We would never allow slap-dash methods, and the Government would not stand for them either. They would sooner see us annoyed in the shops for a few months than risk disaster in the flights above the coasts and the channel. Who in the world would want otherwise ? Only our enemy.

Trouble is tolerable if rewarded with success. In the case we are considering if the aircraft had been 50 m.p.h. down on estimate it would have been useless and our entire effort would have been wasted. Not only has it achieved in full the technical excellence aimed at but we have been informed that for speed in design, testing and delivery to the Service it beats every previous record.

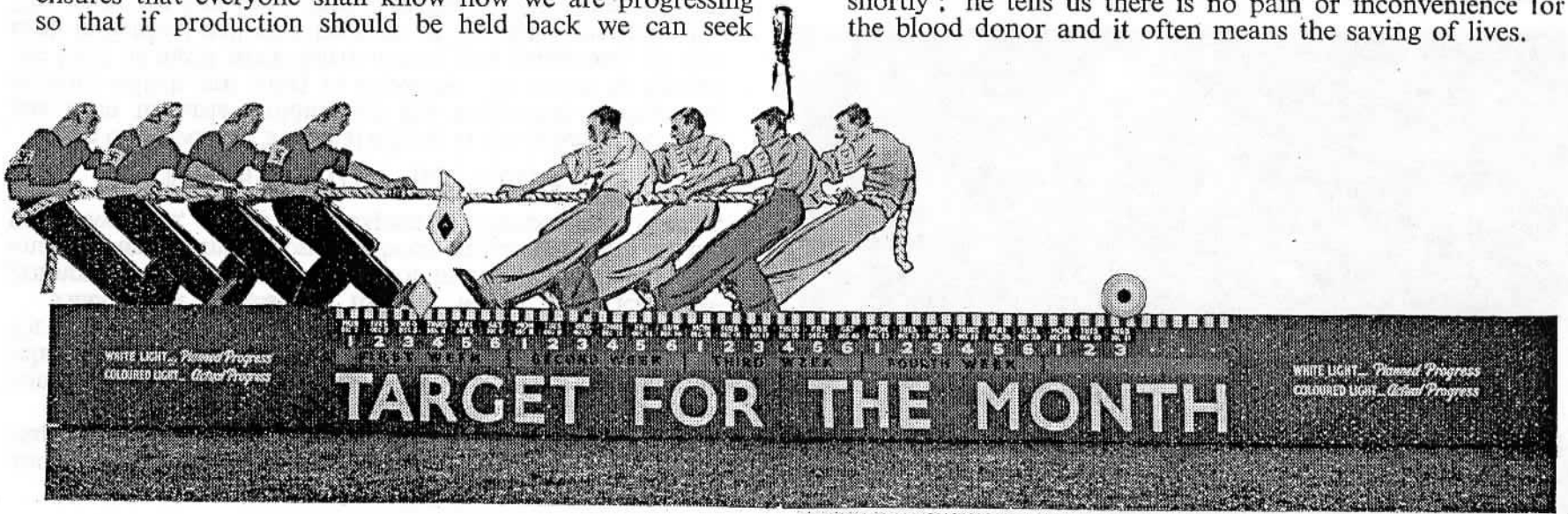
TARGET FOR THE MONTH

A good idea has shown up in the central D.H. airscrew works this week. It is a big pictorial device to demonstrate at a glance how the airscrew output compares day by day with the programme for the month. A horizontal scale some 15 ft. long is calibrated in divisions representing the production programme; along this scale a white light is moved each morning to mark the scheduled output to date. Above the scale a nearly life-size tug-of-war is going on in which regimented Nazis are trying to hold back our production while a team of individual British workers does its best to keep the centre of the rope ahead of the programme mark. The centre of the rope carries a red light when behind and a green light when ahead of schedule.

This device stands high and prominent between the big hub machine shop and the big blade shop, plainly seen from either side by a great number of machine operators, planning engineers and others whose achievement it portrays. It ensures that everyone shall know how we are progressing so that if production should be held back we can seek around for the cause with no delay. Could not a similar idea be usefully introduced in our other works?

TRANSFUSION VOLUNTEERS WANTED

In response to the public appeal several of our people have registered as voluntary blood donors in the national transfusion service, and it has been suggested that the D.H. aircraft division should organise its own group under the North East London and Home Counties Sector. More volunteers are therefore wanted and the scheme will be explained shortly by an expert who is coming to the factory. No doubt our factories in other sectors will be approached in the near future also. The immediate object is to provide blood serum to despatch to our Forces overseas, notably in the Middle East and, of course, largely the R.A.F. Another call is for the Civil Defence casualty service at home. Dr. Thompson will be putting out a statement shortly; he tells us there is no pain or inconvenience for the blood donor and it often means the saving of lives.



LIGHTS FROM BUSHELLS

Amateur dramatic and musical sections in our Engine and Airscrew Divisions are preparing a pleasant surprise to stage for us early in the New Year.

Their new string orchestra has given its first lunch-time concert, and it was difficult to believe that they only started rehearsing a few weeks ago. Does feminine shyness account for the reticence of lady players?

Talent and suggestions for the winter theatrical programme have also been called for in the Aircraft Division and a talent competition has been organised there in the past few days, so we may expect announcements shortly.

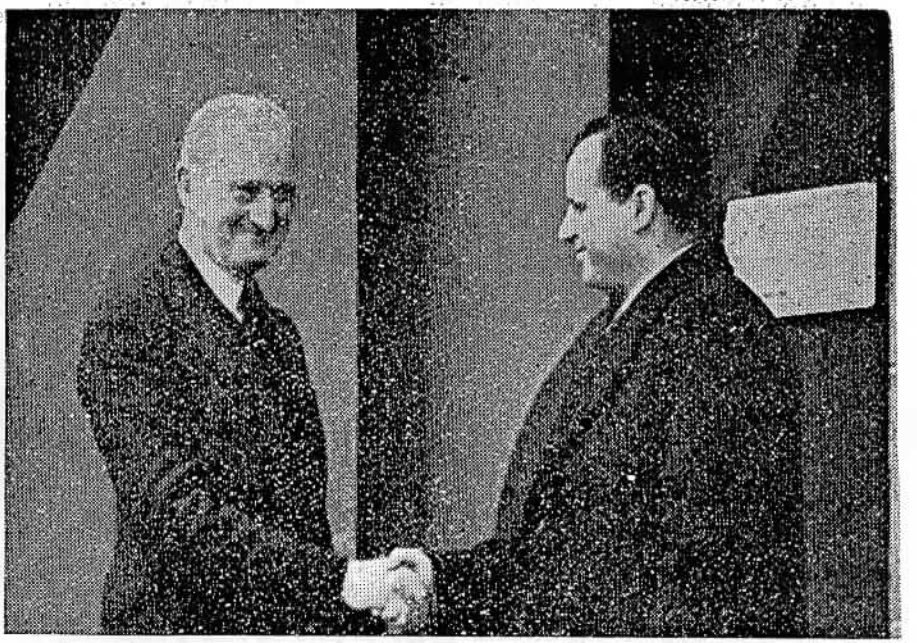
NIGHT SHIFT BY ROTA

One of November's special efforts in the Aircraft Division has been towards building up the night-shift strength in sections which are short of capacity. In order to spread the load of night work fairly a rota was suggested, so that each individual will take his turn of " nights " periodically. The response has been very pleasing. It is apparent that these arrangements will need to spread through all shops of the Aircraft Division and it is confidently hoped that there will be a similar response throughout.

HOME TO FACTORY TRAVEL

One result of the investigation into transport problems referred to in our first issue is that Mr. Guiver has been appointed travel-trouble tracer in the Aircraft Division. At his office, in the employment department, he is ready to hear about difficulties in getting to and from work and anxious to eliminate them. He will be glad to hear of anyone who comes by car and has a spare seat to fill.

Negotiations are proceeding with the authorities for better shelter accommodation at the 'bus stops outside the main factory.



ANGLO-AMERICAN PRODUCTION DRIVE: Mr. Hearle greets, with obvious pleasure, Mr. Goodhue on his arrival recently by flying boat.

TRANS-ATLANTIC CO-OPERATION

Airscrew workers may have recognised Mr. Joseph Goodhue, who arrived from America by flying-boat on November 12 for liaison duties on behalf of Hamilton Standard Propellers. He was here previously on similar work in the days of peace and has many friends among us. American-built Hamilton airscrews are used in thousands in the R.A.F., side by side with our own, and there is a valuable measure of interchangeability. Mr. J. J. B. Houston from our installation department left on November 20 for America and Canada for reciprocal liaison work on our behalf.

ENGINE BUILDERS PLEASE BOW

A letter from a flight lieutenant in the R.A.F. who has been flying Dragon Rapides and Dominies, civil and military, for five years or more pays tribute to our Gipsy Six and Gipsyqueen engines—and incidentally to this faithful and favourite aircraft type—and tells an exciting tale of the evacuation from France. He brought a veteran Rapide away from Nantes aerodrome at night with five passengers, two boxes of tools, much loose equipment, and stores and luggage piled to the roof of the freight compartment and rear part of the cabin, and with full tanks. There is no record of what the all-up weight was. He flew in cloud much of the way to avoid enemy fighters and did the rest of the channel crossing a few feet above the waves. His praise of our engines is gratifying by reason of his long experience. The Gipsies do not come in for the limelight that shines upon operational exploits but their consistent excellence stands to the credit of our shops.

EXPENSIVE ENCOURAGEMENT

In the friendly football game organised between rival depots of our Second Aircraft Group over the week-end, victory brought disaster to Mr. Edworthy. In an unguarded moment he had promised Mr. Watts, centre forward of the "Aldies," a pint of beer for every goal scored by the side. The Aldies put in a strong team and beat "The Avenue" by twelve goals to nil. And that wasn't all: the rest of the winning team claimed a gallon and a half each as well! The Avenue count on beating them next time.

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Christmas Greetings to all

OUR JOB

No. 4 18/12/41

which deals informally with matters of interest to everyone in the de Havilland organisation

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WAITING time is a problem so irritating to the individual and so prejudicial to planned output that it seems fitting to examine the subject here so far as space permits.

Text undeciperable

Can there be any [illegible] as to be on waiting [illegible] in the afternoon to work overtime in the evening? Why are not these sudden shortages of essential components foreseen and provided for? Why cannot those responsible for progressing the job make certain in advance that willing hands are continuously employed? Surely it seems elementary common sense to leave nothing to chance, to have ready to hand the materials and parts known to be required for a programme into which has been put so much thought. Is any acceptable excuse possible in such times for such a waste of man-power?

That errors and oversights do occur is certain, but they are no more than a fraction of the whole, and an occasional slip-up can be forgiven when, in the midst of war, an

organization is continuously running at maximum strain. Almost invariably there are deeper reasons.

Long-term plans must of course be made and the usual working hazards are taken into account when estimating production; but even a brief interruption in the smooth flow of relatively small things will throw out of gear the planned timetable of many hands, for whom it is not practicable to find alternative useful work before their own is resumed. Waiting time may therefore be unavoidable for one period of a day followed by the urgent need for overtime because a bottle-neck has been cleared by the delayed arrival of awaited parts

But why cannot a reserve of these things be maintained upon which to fall back in necessity? Why not keep in the stores a pool of perhaps ten of everything required for, let us say, airscrew assembly? Well, even if it could be done, would it be to the advantage of everybody? If there were in store ten of every airscrew component, it must follow there are ten complete airscrews available for despatch to the R.A.F. to put a corresponding number of fighters in the air, or send winging on their way to Germany five or so more bombers. No! It is up to us to send without avoidable delay every complete item of equipment, and find some other way to solve the problem.

Why do not the progress men see that all hands are continuously employed? Whilst it is true that the more skilled a progress department is the less loss of time will ensue, even with skill of the highest order normal difficulties of abnormal times will very frequently break down the most careful plan; it may be the influx of imported raw material has not maintained its expected schedule, although thanks to the Royal Navy, the Coastal Command and the Lease/Lend Act this worry has been less than it was. An added complication is the period of mixed production during the change-over from one programme to another, the organization of which must give unremitting headaches to Progress until the old is displaced by the new. Another source of anxiety is that much of our work depends for its maximum efficiency upon orders being on hand to cover a known period ahead, to ensure the arrival on time of bought-out parts: but the fluctuating fortunes of war causing changes in design can cut that period too fine for all troubles to be avoided. All things considered, the progress men do an extremely difficult task in a most praiseworthy manner; rarely can they be fairly accused of avoidable mistakes.

The complaint is sometimes made that our own shops could do sub-contracted work. Until the success of a new type is proved, production requirements cannot be known, but extremely valuable time would be lost if nothing further was done until the prototype had flown into triumph. Anticipatory orders are therefore placed, some with our own shops and some with sub-contractors, in the proportion which at the time seems advisable. Later, however, changed circumstances—a bigger output programme—may disclose that a re-arrangement of the production plan is advisable and work previously sub-contracted might with advantage be undertaken in our shops. But a sub-contractor cannot be suddenly deprived of his work, otherwise his future manufacturing capacity might become jeopardised; some other way of achieving our end must be found.

Here, then, is a brief and all too incomplete picture of some of the difficulties prevailing. Still, do not think those whose responsibility it is are resigned to the evil of waiting time. Remedies are being ceaselessly sought, but complete success will depend upon general co-operation. For example, if the cause of waiting time in one shop is due to the urgent need for more output from another, then those concerned should be willing for the general good to work overtime with a ready heart.

PILOTS STUDY PRODUCTION CONTROL

Early this month, several departments of our Aircraft Division were visited by two flight lieutenants from operational squadrons, who were keenly interested in our work and told us something about theirs. One had a D.F.C. for bombing German and Italian targets, while the other had long been engaged on flying-boat reconnaissance and was, in fact, the pilot of the Catalina which shadowed the *Bismarck* all through the night prior to its destruction. He was 27 hours aloft on that flight.

In the Production Control office and elsewhere they traced a component through the procedure of drawing office, methods engineers, material purchase, production planning, tool making, machining and assembly and finally watched the aircraft on flight tests. The accompanying photograph speaks well for the success of this visit.

MARRIAGE OF MR. H. J. NIXON

The stress of present times could not mar the happiness of a recent occasion in our Engine and Airscrew Divisions. Mr. H. J. Nixon was married on December 6 to Miss Patricia Shelmerdine, who is known to many of us through her war work. On the previous day, a silver tea service, a gift from the staff, was presented to Mr. Nixon at a gathering in the works canteen, Mr. Parkes voicing the good wishes of everybody, while Mr. Staines made the presentation. Mr. Percy G. Beere was best man at the wedding, which took place at the Hendon Registrar's Office and was followed by a reception at Grosvenor House London.

MORE FOR THE BENEVOLENT FUND

With £1,000 to beat (that being the sum raised for the R.A.F. Benevolent Fund in the recent week's effort of the Aircraft Division) our Northern Airscrew Division organised a week of their own and collected £1,250 net. Mr. Forster is to be congratulated on an excellent result.

AID FOR RUSSIA

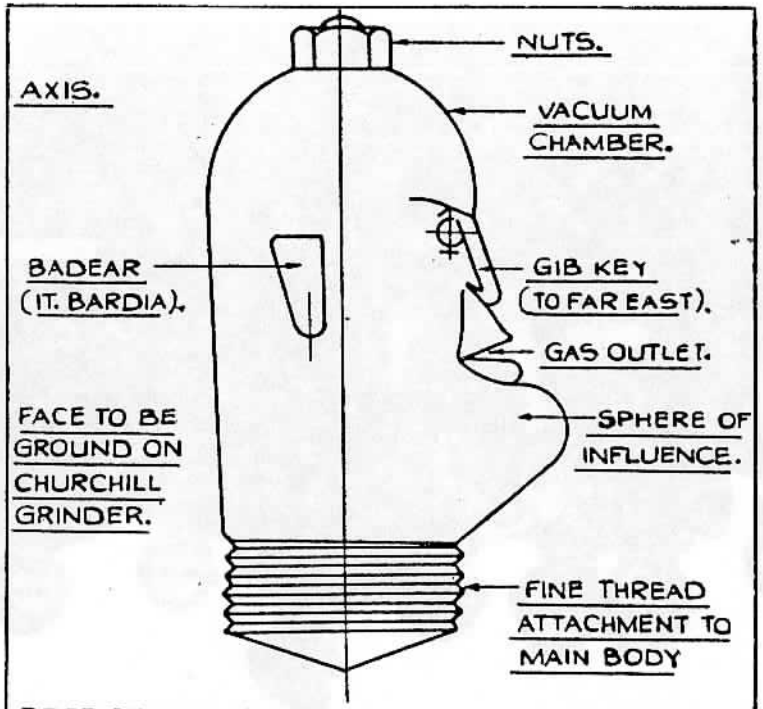
The sum collected by personnel of the Aircraft Division in their recent drive on behalf of Russia was £768. This was handed to People's Counsellor Novikov at the Soviet Embassy, London, by a delegation of 12 shop stewards who were cordially received and enjoyed a long and interesting talk with the Russian officials.

IMPROVING THE SYSTEM

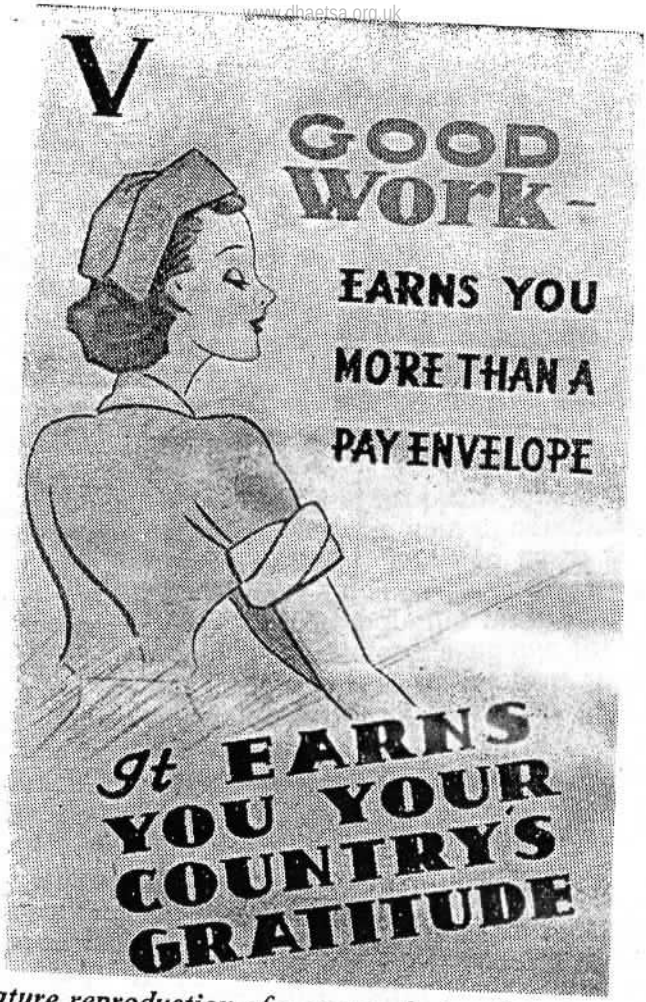
The suggestion of meetings among the foremen for lectures or discussions on the organisation of their work in war conditions has many strong supporters and Mr. Hearle himself is anxious that it should be carefully considered at all depots. The " system " is often criticised—even in peace-time—and war conditions call for frequent adjustments which might well be explained and talked over in the continual search for improved methods. " Our Job " will be pleased to announce arrangements for these meetings.

KEEPING OUR LADY WORKERS FIT.

The swift increase in the number of women in all departments brings added importance to our Ladies " Keep Fit " Classes. These weekly half-hours of physical jerks are refreshing and enjoyable and Dr. Thompson considers that ladies working long hours will find distinct benefit from them, especially in avoiding winter colds. Mr. Holloway tells us that in the Aircraft Division the autumn term was very successful and that bigger classes for the winter term will open on Monday, January 12th, at 5.30 p.m.



Discovered in the tools room (this is not the final issue—several more mods. are expected).



A miniature reproduction of a poster design from a series by the well-known artist, Mr. Victor Hicks.

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OUR JOB

No. 5 1/1/42

which deals informally with matters of interest to everyone in the de Havilland organisation

MR. HEARLE'S NEW YEAR MESSAGE

THROUGH this little paper we want to let you know some of the interesting things that are going on within our organisation, that is, so far as is permitted by the censor. I must admit that I don't envy the editor : he has the unhappy task of trying to make it interesting to you without stating names of places, quantities, performances, etc., so I ask you to make allowances knowing that he is doing " his job " just as well as he can in the circumstances.

We should find a satisfactory New Year thought in the fact that we are engaged in producing and maintaining some of the finest and most vital equipment in the whole war effort, and that it is giving first-rate performance.

I often hear of troubles and difficulties, and spend quite a lot of time with my colleagues in a sincere effort to visualise many of your problems in a genuine endeavour to keep the wheels turning smoothly in order to achieve the best results.

It is not necessary for me to tell you that those of us " at the helm " are by no means free of problems. Many of you, especially those in positions of responsibility, know the daily setbacks—such as material shortages, transport delays, skilled labour scarcity, alterations to products, clashes of personalities, dispersal of sections, etc.—details in themselves, but all adding together to make control of

production difficult. It is to be expected, therefore, that complaints will occasionally be voiced by persons not in possession of all the facts. Things may often look black, but when the picture has been viewed as a whole it must be agreed that this Company has played an important part in the war effort of 1941.

We must bear in mind that none of us is a superman. A problem arises and we do our best to settle it. As you might try to make a part, but sometimes that part comes back for modification : so also do some of our problems. Often we have to scrap schemes altogether and start again, just as you may have to remake your piece—all very aggravating to you and us, but, nevertheless, all very human.

During the war we have had to shorten the period between initiation of design and quantity production, at a time when skilled supervision and labour are spread very thinly, when quantity work has to proceed before adequate tools are available, very often by workers with little experience. But it is no use grumbling with the enemy almost at our door. We must just make the best of it, and together overcome the obstacles and deliver the goods.

You will see inefficiencies, many of which we already know about and are trying to put right. Even so, if faults persist overlong will you scribble a note and put it in the Suggestion Boxes which we are placing in each factory? I am arranging that such notes will be examined by senior officials, and undoubtedly some good ideas will emerge.

Therefore, I appeal to you to help us to eliminate the remaining weak links during the coming year. Above all, remember that intolerance is not only unpleasant, but leads to many inefficiencies, and a little effort spent in helping the other fellow will result in increased production.

My best wishes to you all for 1942.

J. J. Hearle

THE SHOP STEWARDS' MESSAGE FOR 1942

The following brief but hearty message has been received from the Aircraft Division shop stewards and has been cordially endorsed by the shop stewards of the Engine and Airscrew Divisions and Repair Depots :

The shop stewards wish to convey to all workers, both in the factories and in the Forces, their best wishes for 1942.

Increased output on our part and the best use of our product by our brothers in the Forces will ensure the speediest possible destruction of Hitler Fascism.

GOODWILL FOR OUTPUT

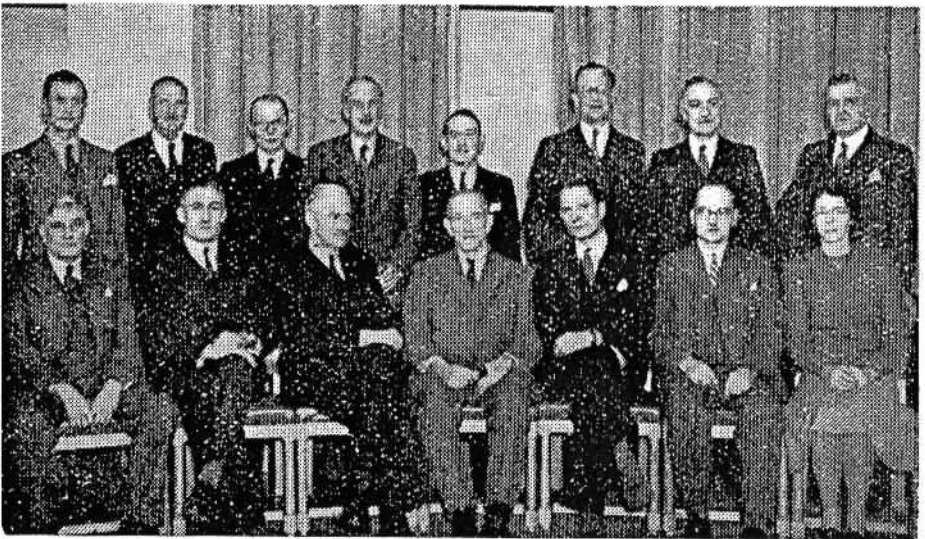
Three evenings before Christmas a meeting was held at the main aircraft establishment which offers further promise of the co-operative spirit that means so much to efficiency in production. It was a meeting of the shop supervision with the shop stewards, and was called at the request of the shop stewards with the object of establishing better understanding of each other's problems and points of view. Mr. Grinham, as General Works Manager, opened the proceedings. Messrs. Sell, Trounce and Vickery explained the views of the shop stewards, while Mr. Allardyce put forward the ideas of the supervision. Mr. Hearle and Mr. Murray also spoke, Mr. Hearle prefacing his remarks by suggesting that there was very little difference between the points of view of all parties, for we all have the same aim.

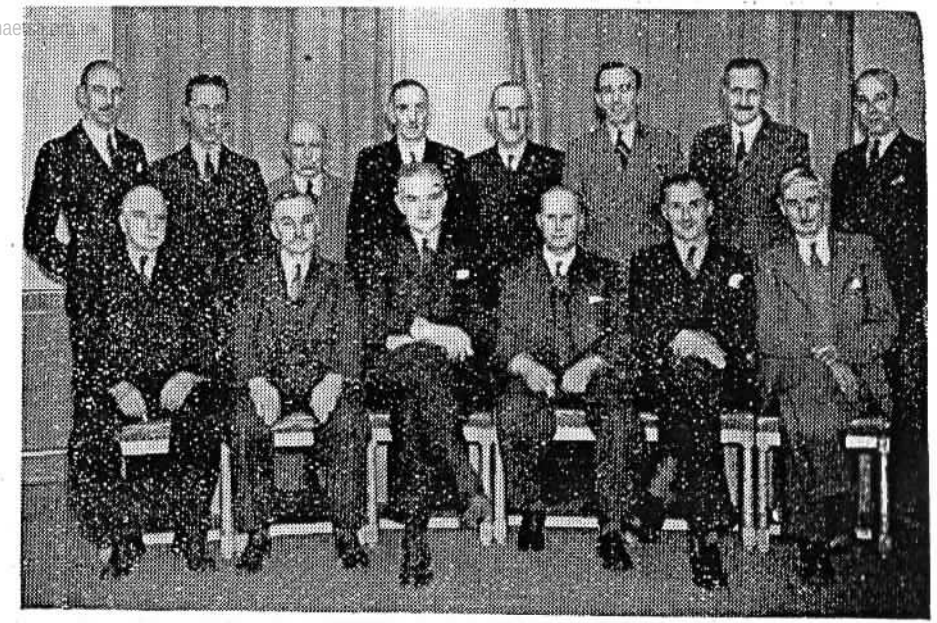
Paper rationing unfortunately prevents us from reporting the meeting adequately in this issue but the discussion was both interesting and fruitful and it is proposed to devote more space to it, if possible, in our next issue. It would be a pity not to give everybody a chance to hear what was said on this important subject, and all depots should benefit from it.

THE COMPANY COMES OF AGE

Sixteen of those who constituted the personnel of the de Havilland Company when it was formed in 1920 are still active members of the organisation; five of these are directors and have guided its destiny, throughout these twenty-one years of remarkable development and success. On attaining their twentieth year, that is towards the close of 1940, these veterans were each given a simple pictorial souvenir of the march of two decades, also a cheque for £20. Air-raid conditions made a gathering impracticable at that time, but a few days ago, when fourteen "younger boys" (the 1921 class) reached their twentieth year, the seniors of 1920 were invited by the directors to witness the informal presentation by Mr. Butler, our chairman, of souvenirs and cheques to these "junior" people.

THE SENIORS (21 years' service): Left to right: Back Row: Mr. R. Hutchinson, Mr. T. Sayers, Mr. G. K. Carlson, Mr. H. Fidler, Mr. J. A. Speller, Mr. W. E. Nixon, Mr. A. H. Morse, Mr. H. G. Reed. Front Row: Mr. F. Cole, Mr. A. J. Brant, Mr. F. T. Hearle, Mr. C. C. Walker, Mr. F. E. N. St. Barbe, Mr. S. T. Webb, Miss J. Dunman.





THE JUNIORS (20 years' service): Left to right: Back Row: Mr. C. G. Long, Mr. S. T. Weedon, Mr. P. A. Roedling, Mr. J. Webb, Mr. W. Lamb, Mr. R. Hyder, Mr. C. R. Stokes, Mr. J. W. Dale. Front Row: Mr. H. Taylor, Mr. J. J. Jennett, Mr. J. W. Smallwood, Mr. C. S. Erlam, Mr. T. G. Seward, Mr. E. T. Marriott.

From many D.H. establishments, separated to-day by many miles, they came together. The occasion was rich in traditional memories, mostly of a highly amusing nature; indeed, as Mr. Hearle said, "You who have been through the good times and the lean times, you *are* the tradition of this company of ours." Regret was unanimously voiced that Capt. de Havilland had been prevented from attending, and those present thereupon signed their names to a

Christmas greeting to him and a declaration of the loyalty and esteem in which they hold him.

An organisation like ours, as Mr. Hearle also remarked, exists not merely for the products it turns out but for the people who comprise it. And, how poignantly true that is to-day when the equipment we are building is being employed for the preservation of our very lives and liberty.

TO THE LAST OXFORD

From Operator 2614

Oh ! Airspeed Oxford, through at last !
Your times were good, though you were not fast.
In these poor verses, please, may I
Wish you fair luck and say goodbye ?

I loved you well, and you liked me,
Far better than the A.I.D.,
Who frequently refused to sign
And turned *you* down, whose faults were *mine*.

Farewell, old pal, droop not your flaps
If you can't fight like other chaps.
Scorn not your task—'tis no disgrace
To do the spade work for the ace.

For aeroplanes (and men) should do
The job that they are fitted to.
I'll think of you and oft lament
My income tax—your monument !

Away, and teach the boys to fly.
You will be proud and so shall I
To see the host of Flighty Kates
Outwheeling from our hangar gates.

And though, dear Oxford, you'll be gone
We shall remain and carry on,
Knowing full well that if we try
The Flighty Kate will rule the sky. —A. L. HARE.

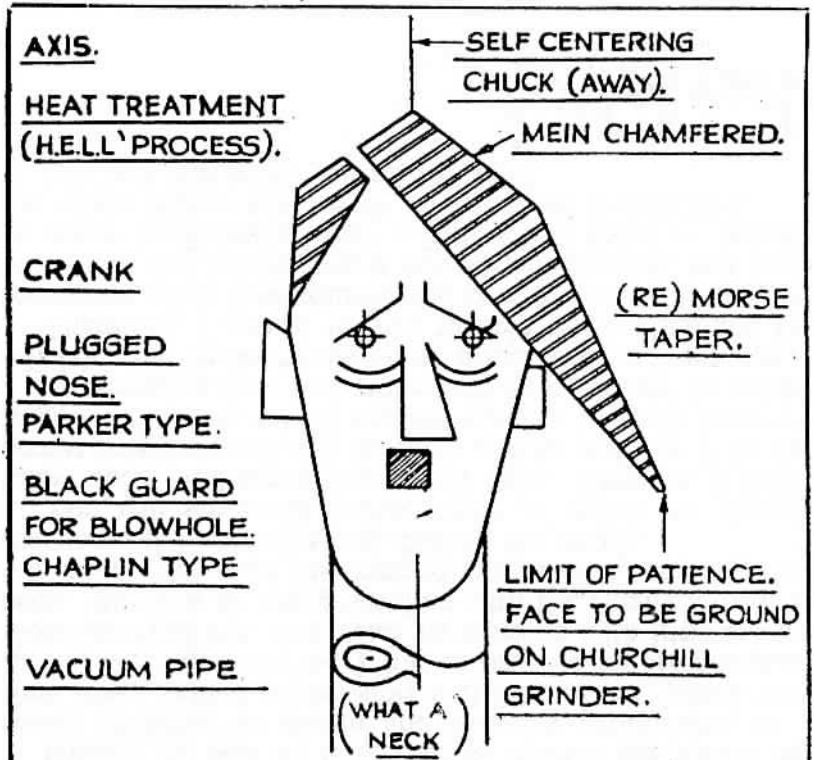
FOREMEN'S EVENING TALKS BEGUN

Already the suggestion of meetings among the foremen for lectures or discussions with the object of " improving the system " has materialised. Lectures are being given at the Engine and Airscrew Division, and at other depots, while at the main Aircraft Works the following series of one-hour talks has begun, each starting at 17.45 hrs. :—

Dec. 17.—Mr. F. C. Plumb (Prototype Production).
,, 31.—Manager of Watford Government Training Centre (Training).
Jan. 7.—Mr. P. F. Bryan (Design and D. O. Procedure).
,, 14.—Mr. L. E. H. Somerville-Meikle (Cost Records and Overheads).
,, 21.—Mr. S. R. Rudge (Methods and Ratefixing).
,, 28.—Mr. C. G. Long (Production Control).
Feb. 4.—Mr. G. R. de Havilland (Test Flight Snags).
,, 11.—Mr. G. K. Carlson (Inspection).
,, 18.—Mr. J. Gardner (Plant Maintenance).
,, 25.—Mr. D. M. Brown (A.I.D. Procedure).
March 4.—Mr. A. J. Brant (Aircraft Repairs).
,, 11.—Mr. J. Maslin (Employment, Factory Acts and Wartime Legislation).

Mr. Plumb's talk on December 17 was instructive, practical and enjoyable, so much so that a further meeting had to be arranged to continue the discussions which developed. He explained laboratory tests, test rigs, jigging, the actual building of a prototype, weight and performance estimation, and many of the problems of each phase. From the discussion a point arose which we discussed in No. 3 issue of *Our Job*—how mods. are inevitable in the early stages of production unless a pause is allowed after the prototype development stage.

We look forward to publishing details of similar meetings at our other establishments, because they must be beneficial to productive efficiency in the present abnormal conditions.



FOR FURTHER DESIGNS SEE BLUE PENCIL PRINT MEIN KAMPFE.

DESIGN FOR	DRAWN BY	CHURCHILL.
LAND GRAB & PLUNGER.	TRACED BY	B.A.D ODOUR
	CHECKED BY	ALLIES.
	PASSED BY	HARD STRAIN.

Part Two of the drawing recently discovered in the Tool Room. (But Part Three is still better).

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OUR JOB

No. 6 8/1/42

which deals informally with matters of interest to everyone in the de Havilland organisation

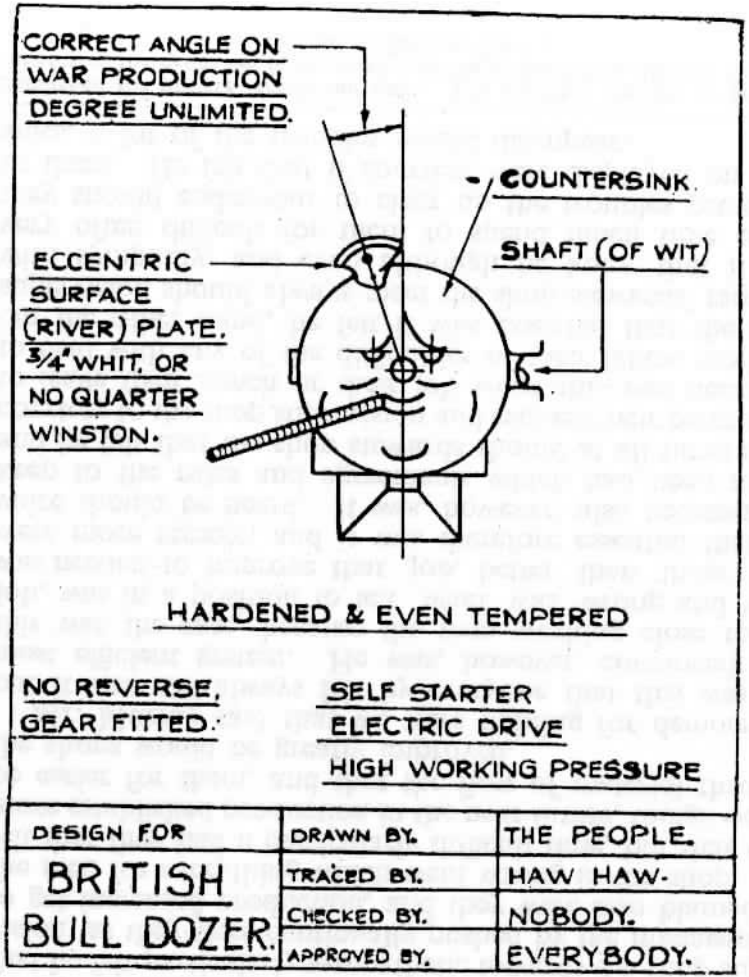
PREPARATION ... LIBERATION ... ASSAULT

MR. CHURCHILL's speech in Ottawa—perhaps the most stirring and heartening he has yet given us—concluded with "a more forward view of the war" which must promptly readjust the sense of proportion of anyone who may have felt, even subconsciously, that Russia's heroic pounding of the enemy, and our own successes in the Atlantic and in Libya, have lessened the need for productive effort.

Mr. Churchill sees three main phases ahead—preparation, liberation of the lost territories, and assault upon the citadels of the enemy. Speaking of the first phase, in which we have to co-ordinate the whole preparative effort of the British Commonwealth, America, Russia and China and acquire overwhelming air superiority and shipping tonnage, Mr. Churchill said :

> "How long this period will take depends upon the virulence of the effort put into production in all our industries and shipyards."

Let us not forget his previous statement that we could not avoid initial reverses in the Far East because we had not enough equipment to resist the Japanese there as well as smash Rommel and give help to Russia. Verily an enormous task must be completed before the phases of liberation and assault can be embarked upon.



Best job of the lot.

SEEN OUR FOUR-BLADER?

Even in the main D.H. airscrew works there must be plenty who have not seen a four-blade de Havilland airscrew, complete with all the modern conveniences of constant-speed control and quick feathering action. Three blades are not going to be enough for the fighter aircraft we shall be launching against the Hun in the near future. The reason lies in the remarkable advances made in the supercharging of our big engines. They can give out power at such a great height that three blades will not provide enough area to work properly in the rare atmosphere, except if the airscrew be made so large that it would require an unduly tall undercarriage.

The first D.H. four-blader is for engines of 2,000 h.p. and even higher, the biggest the R.A.F. is using at present. The test pilots will have to put the new airscrew through all kinds of trials. Then quick production will be needed.

COLD CAUSES OVERHEATING

A number of people in our Aircraft Division may wonder why certain aircraft remain with us for experimental flying and come back to us from the Service when all thought they were urgently needed. New development problems keep arising, some to meet ever-changing needs of the air war, others due to unsatisfactory functioning of detail equipment. This may be hard to appreciate without an example so here is one. Winter conditions have brought to light an oil-flow problem which could not have been pre-calculated. Overcooling of certain oil passages caused restricted flow which, paradoxically, made the oil overheat!

"WHAT GOES DOWN MUST COME UP"

This is the motto of our Aircraft Division Home Guard Bomb Disposal Section which was, we believe, the first factory bomb disposal section to be formed in the country, and was also the first to receive the provisional "A" certificate.

With their load. Left to right, back row: Vols. Bearder, French, Spooner, Rice, Jackson. Middle row: Lt. Pocock, Vol. Hyams, Mr. Kimmons, Mr. Cochrane, Cpl. Bush, Vols. Spindloe, Thornycroft. Front row: Driver Holley, Sgt. Simmonds (second-in-command)—not all of the squad appear in this picture.

The provisional "A" certificate means that they are qualified as the result of an examination to do all preliminary work necessary on unexploded bombs which may be dropped on or near any of our factories, and the regular Army Bomb Disposal Squads are only called in for the final "touches." They are now working hard for their "A" certificate, which will give them a still higher qualification. All the men are very keen and find the work very hard but interesting.

Both the officer and sergeant of the Bomb Disposal Squad have been on a two-weeks course at the Army Bomb Disposal School, and most of the men have on occasions been out with other units to obtain practical experience. Recruits are needed.

A BRIGHT IDEA ACKNOWLEDGED

When two R.A.F. pilots from flying-boat reconnaissance operations visited our Second Aircraft Group just before Christmas they were interested to see in use a special clamp which had been designed as an improved means for applying pressure when gluing scarfed joints in certain wooden structures. The directors had intended to make some practical recognition of the ingenuity of this device which had been designed by Mr. Goodwin and others, and so the occasion of this visit was taken for making a presentation; as the photograph shows, one of the officers handed to Mr. Goodwin an envelope which we understand contained a welcome addition to Christmas funds. Incidentally, the photograph shows number of the clamps.

The pilots were asked various questions about their experiences and told some good yarns. A similar visit was made a few days later to our main airscrew repair depot and to one of our dispersed engine production shops.

GETTING ALL-ROUND UNDERSTANDING

In No. 5 issue of " Our Job " brief mention was made of a meeting in our Aircraft Division between foremen and shop stewards, and a detailed report was promised later because it was felt that people in every one of our factories would be interested in the further step towards all-round co-operation which this discussion achieved.

The meeting was held following a request by the shop stewards, who felt that there was excellent co-operation between the shop stewards and the management but that the management's views did not seem to be entirely understood by the foremen.

Mr. Grinham, as General Works Manager, had said that he was quite prepared to arrange a meeting, but had pointed out to the shop stewards that this was a distinct change of front, and that the attitude of the foremen towards the shop stewards might have been coloured to some extent by a previous incident, when the shop stewards had declined to discuss a particular subject with the management because of the presence of foremen at the meeting.

Arrangements were made for the meeting to be held, and Mr. Hearle and Mr. Murray were asked to be present.

The meeting opened by Mr. Grinham explaining the reason for calling it, and again pointing out that the foremen's attitude might to some extent be influenced by previous history. He also impressed the meeting with the need for discipline at all times, which must be definitely in the hands of the shop supervision. He explained that he never allowed any question of criticism of the shop supervision to be brought up at the works council meetings, and he felt, therefore, that the supervision could feel quite happy in their minds regarding this direct contact between the management and the shop stewards. He then asked the shop stewards to bring forward any points they had.

Mr. Sell said that the shop stewards generally felt pleased with the reception given by the management to their ideas, but were not satisfied that the shop supervision were entirely sympathetic towards them, and in fact very often gained the impression that the shop supervision were prejudiced against the shop stewards to the extent of definitely keeping a special watch on them to see that they did not move away from their job. He felt that this was unfair, for very often the shop stewards could clear up troubles quickly, and as their only interest was that of the management—to obtain good production—he felt that they should not be impeded in these efforts. He mentioned the Erecting Shop as being one place where the feeling did not seem to be of the best.

Mr. Allardyce then replied on behalf of the supervision, and pointed out that the supervision had at all times to be responsible for the discipline of the shop. He wished to impress members of the supervision present at the meeting with the need for listening to troubles and complaints, and doing everything possible to clear them. On the other hand, he felt that close co-operation between the shop stewards and the supervision had not been made any easier by the attitude of the shop stewards in the past.

Mr. Trounce then reiterated the shop stewards' desire to help in production, and said that the decisions arrived at during works council meetings were not implemented in as wholehearted a way as he would like.

Mr. Vickery then spoke for the shop stewards, and pointed out that there must always be, to some extent, a cleavage between the shop stewards and the supervision, and this particularly applied to the question of times. The shop stewards would always have to see that the rights of their Union members to fair and reasonable times were protected, but this did not preclude co-operation between shop stewards and the supervision on matters vitally important to production, which is the one thing of concern to everyone at the present time. He felt that a main cause of trouble was the bad flow of material into the shops.

Mr. Hearle then spoke, and suggested that there was

very little between the points of view of all the parties concerned, as we all had the one objective. He was quite satisfied that if everyone could be reasonably tolerant there would be no difficulty in overcoming any differences between them and making production go ahead smoothly. He said that he felt particularly sympathetic towards the shop supervision, as they were continually pushed by the management to get increased production, and they were also blamed by the men for everything which went wrong in the shop. He felt that they had a particularly difficult time, but that with more established production in the near future, things would be easier for them, and that the flow of material through the shops would be greatly improved.

Mr. Murray said that we were fighting for democracy, but it was not always felt by everyone that this was the most efficient system. He was, however, convinced that this was the case, because the man working close to the job, was in a position to tell what was wrong and what was needed to improve that job, better than those who were more remote, and it was therefore essential that his voice should be heard. It was, however, also necessary to keep to the rules and agreements which had been made, and he felt that the shop stewards should at all times show courtesy to the shop supervision and request their permission to leave their bench or their job when this was necessary to deal with any of the difficulties of their fellow workers. On the other hand, he felt it was essential that the shop supervision should always meet the shop stewards' requests with sympathy, and even although he knew that it was very often difficult for them to spend much time on it, they should endeavour to clear up the troubles presented to them. He felt that if courtesy were displayed on both sides, a lot of the troubles would disappear.

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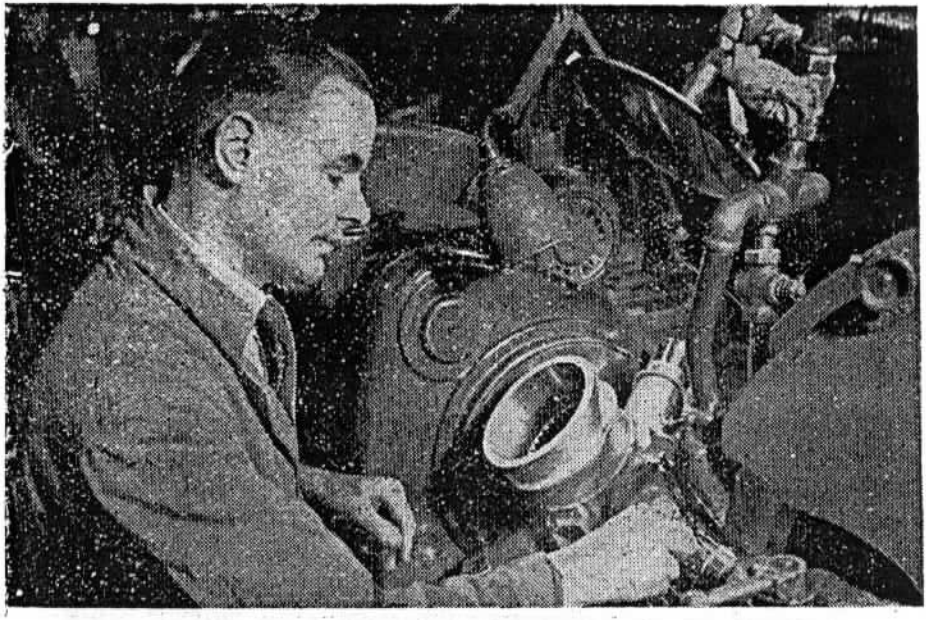
OUR JOB

No. 7 22/1/42

which deals informally with matters of interest to everyone in the de Havilland organisation



Mr. F. H. Keyzer : Of many thousands of airscrew spiders which he has put through the finish-grinding process on the Churchill angular-head grinder only one has been rejected. Close limits are demanded and Mr. Keyzer's record ranks high, even in a shop that prides itself on nice work.

AIRCRAFT OVERHAULS

"CIRO wants this, and Ciro won't agree to that. Who are these Ciro people that we are always hearing about?" So spoke a young woman trainee in our central aircraft repair depot. Hundreds in the same works and thousands in our other divisions may not know the answer or at any rate may not understand the set-up of this establishment.

The censor will not allow us to explain how this repairing base came into existence or to detail its present responsibilities, but *Our Job* can at least make clear to all the main purpose of the work on which they are engaged.

C.R.O. (not "Ciro"!) stands for Civilian Repair Organisation, a body within the jurisdiction of the Ministry of Aircraft Production which controls the workshop capacity of all the civilian companies engaged upon aircraft repair and overhaul work for the R.A.F. and for communications, training and other duties. C.R.O. allocates aircraft to these companies to employ their capacity as effectively as possible. C.R.O. supervises them, calls for explanations in the event of trouble, and conversely is called upon for help and guidance by the companies themselves.

It will be obvious that the de Havilland Company's aircraft overhaul department is the focal centre for the repair of the several D.H. aircraft types. What part are these aircraft playing in the war? The censor is upon our heels here and we must leave some of the more interesting subjects to our readers' imagination. But the less spectacular aspects of war-time flying also are vital. The various light transport aircraft we are working on are no more warlike in appearance than the cargo ships which maintain the Atlantic life-line, but fighter aerobatics and bomber armament are not necessary qualities for conveying even the most important persons, despatches and supplies; and a Dragon Rapide which comes in for schedule maintenance to-day may well have crossed the sea yesterday with some very precious photographs or despatches.

The Dominies we overhaul are Rapides equipped as wireless and navigational trainers and although they have not exactly a "front-line" appearance they are doing indispensable work as flying classrooms for air crews.

We all know the Tiger Moth but do we realise that practically every young man who joins the R.A.F. or any of the Dominion or Colonial air forces to become a pilot learns to fly on a Tiger, and that this modest aeroplane is world-famous for its perfect "schooling" qualities, which quickly produce the sensitive hands the pilot must have? Is it known that the D.H. Gipsy Major engine is the only aero-engine in the world that is approved to do 1,000 hours between overhauls? At D.H. factories in Australia, New Zealand and Canada as well as in England Tigers are made by the thousand and it is *we* who are depended upon to supervise Tiger Moth maintenance. We repair many of them ourselves and maintain a close touch with all other flying and repair bases. The Queen Bee is a special Tiger Moth which flies without a pilot (controlled by radio from the ground) and is used for target practice.

Besides overhaul duties this repair depot with its satellite shops has also relieved our main manufacturing centres of the entire responsibility for replacement parts supplies for practically all the D.H. aircraft types in the R.A.F. and in essential use, at home and in the Empire and allied or friendly countries. This involves production, subcontracting and stores organisation.

As the depot, with its dispersed premises, has grown, it has been able to shoulder another function previously undertaken by D.H. headquarters, namely, the repair of aircraft not made by the company; the importance of this work is self-evident.

Neither we nor C.R.O. is able to control the rate of

Mr. P. E. Gordon-Marshall, manager of our aircraft overhaul organisation, with Mr. Hearle, photographed during a recent visit by the latter to this growing establishment.

" input " of aircraft into our repair establishment, and the pressure of work must therefore fluctuate. It is not the same thing as regular production. A repair organisation can be likened to a hospital. It is essential to have in readiness more " beds " than are necessary for an " average " time—to possess spare capacity that can be called upon when there is an " epidemic." The changing fortunes of war must involve fluctuations in the demands made upon us, and by our resilience and adaptability to altering needs may be measured our usefulness to the Services who do the fighting.

KEEN EYE ON ENGINE REPAIRS

The picture illustrates an output indicator just installed by two of our engine overhaul shops which are engaged on similar work and have similar capacity. It is an output target for the week, and has for its motif the instrument board of a British fighter aircraft in pursuit of the enemy. There are two " progress clocks," one showing the output of each shop, so that each can see how the other is progressing. Each day a black hand is moved to the point which output ought to reach, while a white hand is placed at the mark actually achieved so that a really successful week will end with the white hand well ahead of the black. One of the most useful features of all such target indicators is that the moment output begins to fall back all concerned learn of it and can seek out the cause.

HOW THE FACTORY FUNCTIONS

The weekly talks among our Aircraft Division staff grow more interesting as we observe the keying-together of the subjects covered. Mr. Plumb's talk on prototype development (*Our Job*, No. 5) led naturally into the subject of Mr. Bryan's talk on January 7 about design and drawing office procedure, and that on to Mr. Somerville-Meikle's explanation on January 14 of cost records and overheads. We have not the space to report the talks, but must emphasise their value to all engaged in shop supervision, design and D.O. work, as well as contracts and costing. The genealogy of responsibility unfolds itself in these informal discussions and we can see how to help others more, how to improve the system. Mr. Butler, Chairman of our company, reminded us on January 7 that Britain's aircraft industry is so stressed by the demands of war that senior designers are now thinly spread, and *must* be helped and relieved to the utmost by all departments—especially in the early stages of a new project. To this Mr. Murray added: "*Do* use the suggestion boxes." Mr. Somerville-Meickle's quiet, fluent explanation of costing was plain, instructive and utterly free of the dust-dry flavour of the book-keeper's jargon. Is not this where the practical man scores sometimes over the professional teacher? He opened our eyes to the exacting problems of keeping a production organisation out of financial difficulties in the (rightly) rigid conditions of governmental control now ruling.

FROM THE EDITOR

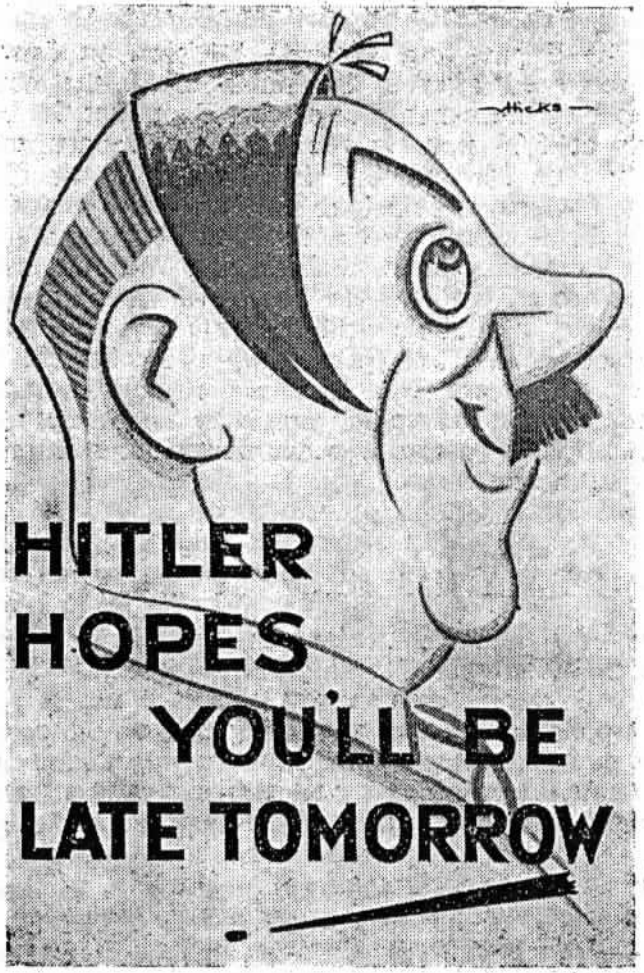
Contributions, news and pictures for *Our Job* are welcome and should be addressed to the Editor at the head office of the Company. They should, of course, be brief, and contributors should bear in mind the purpose of this little bulletin, which is to promote interest and knowledge about the work that we are all doing. *Our Job* is conducted on liberal lines and is intended to air all points of view.

STUDYING FOREMANSHIP

At the Engine and Airscrew Division on January 23 there reopened after a Christmas break the course of lectures on Foremanship begun on December 5. Held on Fridays at 5.30 p.m. in the Planning Department, they will continue for most of 1942, covering the following subjects: General Principles of Foremanship and Supervision; Principles of Production and Planning; Elements of Labour Management, and Costing and Remuneration. No fees are charged for the course which is organised by the Ministry of Labour and National Service, who say it is appreciated that both personality and considerable technical experience are required to make foremen, and that it is impossible to produce one simply by a course of lectures; the intention is to give a wider background to men with these qualifications.

CHARGE-HANDS BECOME INSTRUCTORS

One of the points stressed by Col. Robinson, of the Watford Government Training Centre, in his recent talk to Aircraft Division foremen was the care necessary when selecting instructors for a training school. Mr. Murray confirmed this, and explained how the introduction of men and women trainees in our works imposes additional demands upon the charge-hands. Not only are their normal duties of production pressing enough but nowadays they are acting as instructors as well. Qualities of leadership and patience become doubly necessary. Patience cannot be effective, however, unless the charge-hand has time to devote to his men and women and their questions; in this the shop feeders and progress men can help by seeing that charge-hands spend a minimum of time clearing difficulties in the flow of materials.



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STOP PRESS

THE SUGGESTION BOXES

Mr. Hearle asks us to publish the following message:

"It is with great appreciation that I record the large number of replies to my New Year message which have been received through the Suggestion Boxes.

"These suggestions are in most cases constructive and helpful. A particularly pleasing aspect has been the generally serious-minded attitude shown, and if this can be continued I feel sure that the Suggestion Box will be a very valuable factor in our organisation.

"In many cases the suggestions can be adopted immediately, in others it has not been possible to adopt them without further discussion, and in some cases I am afraid that the suggestions put forward, whilst very good from the point of view of the individual concerned, are not practicable when the full circumstances are taken into account.

"I hope all those who have sent in suggestions will accept this as my personal message of thanks for the response has been so great that it has been impossible to write personally to each individual."

F. T. Hearle.

OUR JOB

No. 8 5/2/42

which deals informally with matters of interest to everyone in the de Havilland organisation

THE appreciation of Russia's grand performance led to another "Russia Sunday" effort a week or so ago, this time in our Engine and Airscrew Division. The motive of wanting to help these tough Russians in some practical way is strong in everyone nowadays—not that a burst of effort on one day is a good thing in itself but because by organising some "event" it is hoped to get people talking, and focus attention on the need for a sustained productive efficiency.

In practice a special effort on one day is not an easy thing to organise effectively, especially at short notice, for production programmes are not worked out in a day, even by a fully trained department that has no bottlenecks in materials or machine tools to struggle with—and that isn't often. But from each occasion when a special effort of this kind is made we learn some lesson for future application, and perhaps that is the best feature of all.

One remembers the story of the production control man who, hearing that there was to be a special Sunday drive to get more output, looked up from his enormous and complicated layout chart and said: "What! At ten days notice! And without telling me even now how many are coming in in any one shop! And I suppose I shall be blamed for waiting time in five or six sections the next week! What do you think I am—a fortune teller?"

The production planning office don't expect to be singled out for praise if output is good, but if a shop is short of material, if assembly is held up for a part, they are assailed with angry faces in no time.

Particularly difficult is their task of estimating output during overtime. It is, in fact, almost as difficult as " guessing " the results of a special Sunday effort. Imagine the plight of a planning engineer who, having scheduled to complete a batch of work through one shop by a Saturday night 7 weeks hence so as to reset machines for a certain very important job to start in the 8th week, finds that the overtime worked on the first batch is below expectations because the men don't think that job means very much to the war effort ! The fact is, of course, that every job is important or we wouldn't be doing it—and most important of all is keeping to programme, keying the batch runs together as they pass through the shops.

Little misunderstandings sometimes have the most serious consequences, and here is an instance : the rate of training of pilots obviously has to be planned more than a year ahead to fit in with the production rate of aircraft. It is no good having thousands more bomber pilots becoming ready for posting, say, in March, 1943, than there will be bombers and bomber squadrons to take them, for nothing more discourages a man who has had to train hard than to be kept idle afterwards.

The rate of training concerns our company very closely. It depends, in fact, on the rate at which factories at home, in Canada, Australia and New Zealand produce de Havilland Tiger Moths—for these are the principal basic trainers of the entire Empire—and that, again, depends on the rate of the home and overseas production of Gipsy engines. A let-down on engines would put the scheme out of balance. Yet there is undoubtedly a certain amount of feeling that, because the little Gipsy doesn't look exactly like a war weapon, it is " not so important " as, say, a Merlin. What about the men whose responsibility it is to make and keep a promise of a certain definite number of engines in each month to go into a certain number of Tiger Moths, some here and others in the Dominions and Colonies, the Dutch East Indies and elsewhere, to maintain a given flow of aircraft to the schools to cope with a planning department.

One of the interesting things about the whole war effort is that in expanding our production we should find it necessary to relearn so many children's first-form lessons. If a lecturer on production planning were to tell us that for every batch of three-blade airscrews promised during a given period it was essential to plan ahead 150 blades in time with 50 spiders and barrels we should feel like asking him not to waste our time with obvious first principles. Yet here we are, after 29 months of war, still discussing the necessity to keep to the programme set by the production control office !

There is no doubt that in the democracies' stupendous task of arming Russia, China, America and Britain—and the Dutch, French, Polish and other free forces—to catch up with the long-prepared and precisely organised production plan of the Germans and the Japanese we still have some very simple lessons to learn in regard to the rhythm of manufacture. We know how to work it all out on paper but we are still inclined to think it is not really necessary to keep to the schedule after we have settled on it.

Unconcerted effort is useless in total war, and whether it be in the arrangement of programmes with the Ministry, the issue of drawings to the Tool Room, the scheduling of capstan batches, the estimating of overtime hours, the organising of a special Sunday effort, the time-tabling of our motor-lorry services or even the digging and liming of our vegetable plots, for goodness' sake let us plan ahead, get the times and quantities right and reasonable and agreed by all, and then *stick to the programme*. Remember, the Germans are good at this.

All mettle : The P.M., the R.A.F., and the 95.

CALCULATION OF SHOP LOADING

In his talk on methods and ratefixing on January 21, Mr. S. R. Rudge (Aircraft Division) explained how the methods engineers department is developing a section to calculate, chart and control shop loading. Taking the machine shop, for instance, they work out a theoretical capacity for each class of machine in the shop, in man-hours per week. Then they collect details of all jobs placed on the shop and see how the total man-hours compare. They will be able to advise the subcontracts department as to the capacity available in any shop, also to tell them how much machining, drilling, fitting, etc., there is in any component and the class of labour needed for each stage of the work. They will know weeks ahead when a peak load is due in a certain shop, and whether the shop can cope with it ; if not they can give subcontracts department information for getting the excess work done elsewhere.

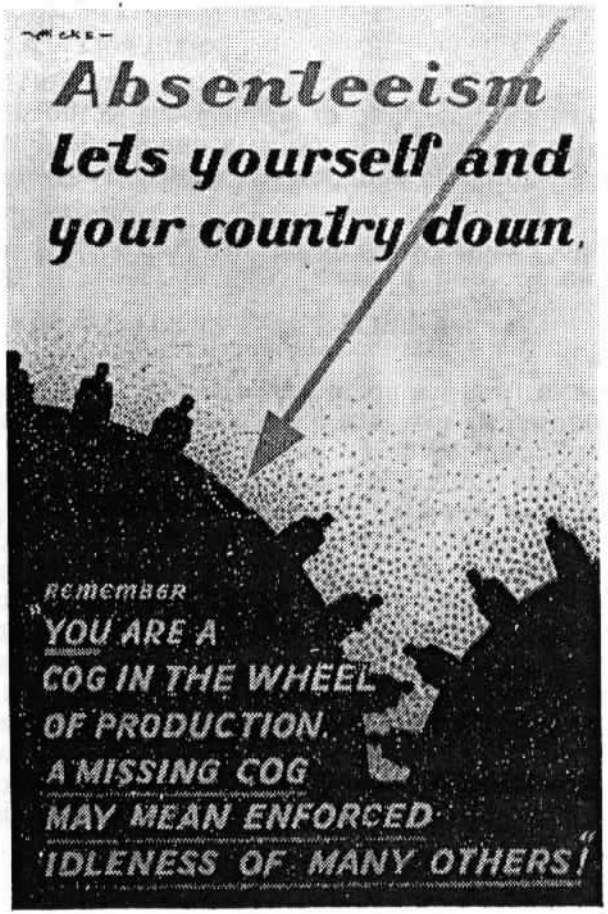
NEW D.H. SAVINGS LEAGUE

The National War Savings groups in our Aircraft, Engine and Airscrew Divisions and our Main Aircraft Repair Depot are being co-ordinated and organised in teams on a league basis with prizes for percentage increases in membership and in total savings per month. Details will be announced on the notice boards, probably as soon as this issue of *Our Job* appears. Volunteers to act as team captains are wanted at once.

CARE OF THE SKIN

Dermatitis means inflammation of the skin and is a condition which may be due to either bodily or external causes. Dr. Thompson, continuously in touch with the people in all our numerous factories, feels that some of us, especially those with sensitive skins, and those whose work brings them in contact with oil and chemicals, might take more care than we do to avoid skin troubles. The skin

should be thoroughly cleansed after work, and any protective cream applied to the hands and arms before work is good. Of course, oily clothing should be taken off as early as possible. These precautions seem to us elementary, but Dr. Thompson says that a reminder is necessary.



Another Victor Hicks Poster

DO YOU KNOW THEM ?

Some D.H. personalities. *Above, left :* Mr. C. S. Thom, General Manager of our Second Aircraft Group, Sales Manager of the Company in pre-war days, joined the firm in 1928. *Above, right :* Mr. C. R. Burgess, Controller of Repairs, Spares and Maintenance, D.H. Airscrews, which includes technical supervision of several depots outside our direct control. Joined us as an apprentice in 1928, much ground-engineering experience with the company's aircraft and airscrews in India, Uruguay, Brazil, Poland, Holland, etc., and with Jersey Airways. Assembled first D.H. v.p. airscrew in July, 1935. *Below, l. to r. :* Miss E. Dudley, Miss M. Tozer, Miss E. Anscomb, of the dope and fabric shop. Miss Anscomb and Miss Dudley joined the Company on the same day in 1924 and have done the fabric work on every prototype since then. Miss Tozer joined a year later and is now an inspector. Much reliance is placed on the experience of these senior members in the present days of expanded production.

PRODUCTION CONTROL EXPLAINED

Mr. C. G. Long's talk to the supervision staff of the Aircraft Division on January 28, on the functions of his production control, progress and subcontract departments, with Mr. W. C. Phillips' exposition of the planning routine, was most useful to the seventy or so men and women who heard it. The troubles experienced in practice were, of course, brought out in the discussion, also some suggestions for clearing them. As in the talks on prototype development, D.O. procedure, methods, rate fixing and costs, these troubles must resolve, as Mr. Murray said, to the responsibility of the management for setting an optimistic programme ; but if they set a programme which we were 100 per cent. sure of being able to achieve *without* troubles we should take longer to get a new aircraft type into service against the enemy. The enemy puts up with the same troubles, and with the same object.

"OTHER REASONS" FOR SUBCONTRACTING

One of the many things which Mr. Long explained was why we are sometimes obliged to subcontract work to other firms when our own shops have the capacity to do it. He said (1) dispersal to reduce bombing risk may demand it, (2) we sometimes have the detail capacity but not the floor space for assembly, and (3) in order to get another firm to take on machining (for example) we might allow them also to do some other detail work which we could do ourselves. As against 300 subcontract orders in the whole of 1939 we have placed 3,000 in the past six months, and many of these for multiple jobs, assemblies, etc.

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OUR JOB

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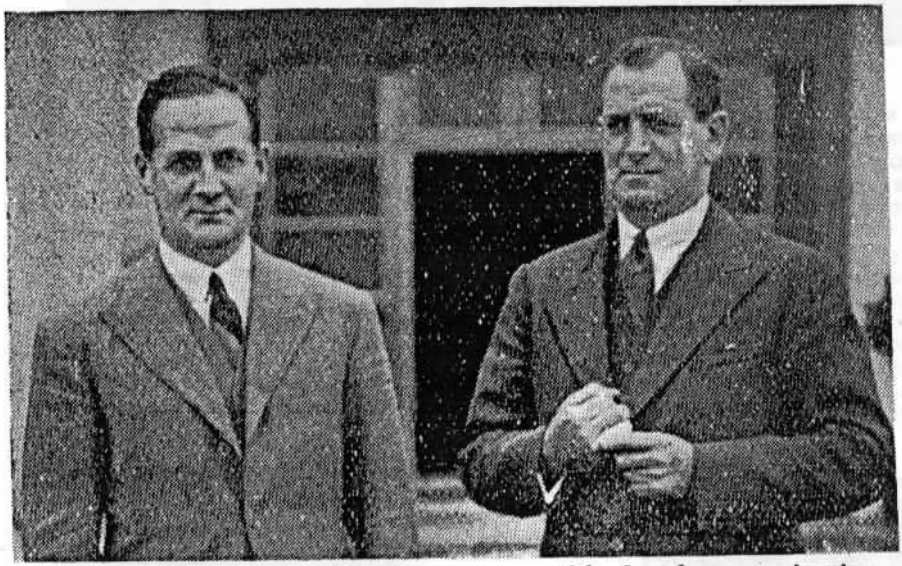


ANTIPODEANS : The men responsible for the organisation of our main aircraft factories in England and Australia. Geographically almost poles apart, Mr. L. C. L. Murray and Major A. Murray Jones, A.F.C., have mutual memories dating back to their schooldays in Melbourne.

DE HAVILLAND EFFORT IN AUSTRALASIA

THE entry of Japan into the war focusses attention upon our own company's interests and activities in Australasia. What sort of works have we in Australia and New Zealand, and what sort of men have we in charge out there? What work are they doing for the protection of their dominions and for the democracies generally?

We have a sizable aircraft factory in Sydney, flat out building Tiger Moths for the huge training scheme, we have a modern factory making controllable-pitch airscrews (the only plant of its kind in the Southern hemisphere), and, in conjunction with General Motors (Holdens), Ltd., the manufacture of Gipsy engines has been organised at Melbourne and is in full swing. In Wellington, New Zealand, we have another aircraft factory, newer and smaller, which is building Tiger Moth trainers, Oxford and other components, and is relied upon by the New Zealand Air Board for much overhaul and repair work.

These establishments are in good hands, they are naturally very busy on work which is invaluable to the local needs, and they have achieved a high degree of independence of England for raw materials and for technical knowledge and capability. There are good engineers out there, good machinists, sheet metal workers, welders, woodworkers, fitters, pilots, engine and airframe mechanics. The Australian and New Zealand Air Forces, and the air lines, both great and small, have developed aviation and ground engineering rapidly in the past few years and de Havillands have played a leading part in this development. In fact they ("we," that is) pioneered aircraft into both Australia and New Zealand, starting in the still earlier days of the smallest flying clubs and the wonderful flights of Amy Johnson and others.

Our home company is in its 22nd year; well, our Australian company is entering its 16th year, and has grown big. The *D.H. Gazette* of February, 1927, published a picture taken on the deck of the Orient liner *Otranto* which shows Major Hereward de Havilland with the two men he took out from Stag Lane to start up the new concern, Mr. F. R. Bedford to be Secretary and Mr. P. L. Taylor to be Works Superintendent. Major de Havilland disembarked at Perth with a Moth in a packing case, assembled it and flew it over 2,000 miles to Melbourne where he started a Moth assembly depot in "quite a big shed" in Whiteman Street, South Melbourne, whence they towed the aircraft 8 miles through the streets of Melbourne to Essendon Aerodrome. Imagine the wealth of practical experience he brought home with him in 1931. Now, as readers know, he is responsible for engineering liaison with the R.A.F. on our present product.

Major Murray Jones, A.F.C., then took over management of our Australian company and is still in charge to-day. He has visited us several times, was here last in August, 1939, and is well known to many of us. He is a keen type. He and our own Mr. Lee Murray were boys together in Melbourne. They both went to St. John's Church in East Malvern there, both graduated at Melbourne University, though in different years. M.J's father was a chemist, used to make up prescriptions for Mr. Murray's father, who was a doctor. When M.J. was in the Directorate of Civil Aviation, Australia, in 1931 Mr. St. Barbe, our Business Director, "discovered" him while on a tour of world markets, and that is how we were fortunate enough to get such a go-getting hard-working aircraftsman-pilot to carry on the building up of what is to-day, well, a tough thorn in the side of the Axis. Hundreds of Tiger Moths have been built at our Sydney works, and they also have a wide maintenance and repair responsibility. They are beginning to build Dragons (D.H.84) to be used as flying navigational classrooms, as recently announced in the papers. Fortunately, thanks to sound foresight, they are now independent of us for the engines for these planes. Mr. Basil Williams, trained

Mr. Hugh Buckingham

in Major Halford's engine design office, and Mr. W. Baptist, a Stag Lane engine test inspector, got the engine production under way in Melbourne. Our Australian airscrew production, another outcome of wise prevision, is now quite big, and obviously an enormous asset to the Australian Air Force. Mr. Ian Spittle, from Stag Lane, manages it and two Stag Lane engineers, Messrs. W. Holman and A. Bee went out in Dec./Jan., 1939/40 to assist in the early stages.

Our New Zealand company is young, formed a few months before the war began, but it has built Tigers in three-figure quantities already. Mr. Hugh Buckingham, familiar to so many of us in the prewar days here, went out to inaugurate the branch after twelve years of shop and organising experience from the Stag Lane days. Mr. J. R. Johnson, D.H. trained since 1928, went out as Works Superintendent and has built up the works side most creditably, so that they are now making jigs for building their own main airframe components, etc. Mr. Peter de Havilland joined them from here as assistant manager and test pilot.

Mr. Peter de Havilland

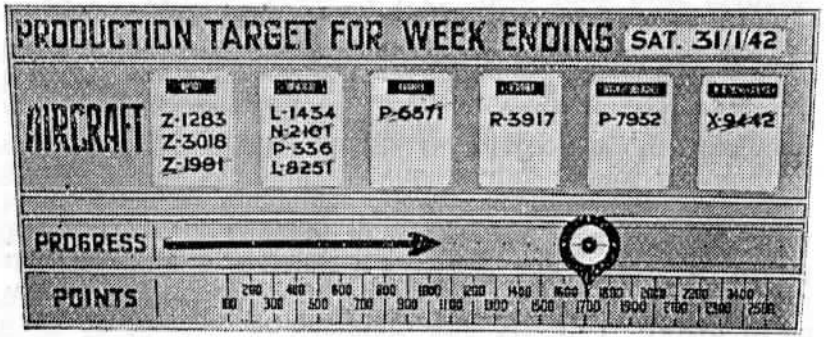
Mr. J. R. Johnson

We are in close touch with these D.H. outposts in the Empire. Cables pass weekly, they know what we are doing and we know all about their work too. They look to us for technicians and others, men have gone to and fro in war time. For two years our people out there, we suspect, may have felt homesick and inclined to worry about being remote from the main war centres. Now they are in danger themselves and glad to be ready, on the spot, with experience and a good set-up to put at the disposal of the authorities.

Sydney and Wellington are our oldest and our youngest overseas factories. With the D.H. companies in Canada, India, South Africa and Rhodesia (all built up on civil aviation) they offered the Dominion Governments a valuable ready-made network of aircraft depots and trained personnel when the war began in 1939, the outcome of a pressing enterprise in overseas trade which characterised the policy of this company from 1920 onward.

INGENIOUS REPAIR-OUTPUT INDICATOR

The problem of depicting, for all to see, the day-to-day progress made at our main aircraft repair depot has been overcome in a practical way and an illustration of the large board which has been set up appears herewith. Large initials indicate the principal types of aircraft handled, and beneath each initial is a space for the registration marking



of each individual aeroplane that is expected to be finished during the week. As each is finished its marking is crossed out with a red line, thus focussing the attention of progress clerks, engineers and supervision staff upon the uncompleted machines. Some aircraft types involve much more repair work than others, and the average man-hours expended on each type are represented by points. Thus the number of man-hours, or points, of work programmed for the week is marked on a scale on the board, and a growing line, extended daily according to the work completed, should reach the "target" by the end of the week.

Furthermore, it has been possible to calculate the amount of work done during past months (using the same point system) for a given number of workpeople, and this makes it a simple matter to estimate how many points should be achieved per week proportionally for the number of workpeople we have employed at the present time.

TEST FLYING

The Wednesday evening talks in the Aircraft Division are steadily covering the main departments of our organisation. On February 4 Mr. Geoffrey de Havilland, chief test pilot, told an audience of 80 about the routine of test flying, in both prototype trials and production, and extracted from actual test reports the principal recurring snags, picking out those which could have been avoided in manufacture. These were few and simple enough—stiff fuel cocks and throttle and airscrew controls, troublesome change-gear controls for two-speed blowers, even scratched sliding windows which would mean increased danger to pilots at night. Mr. Heywood suggested using a spring device for measuring the torque when assembling fuel cocks, etc., just as we use for measuring control-column forces, and this is to be looked into. Once Geoffrey had to use an axe to move a fuel cock from outboard to main-tank supply—otherwise he would have run out of fuel. The proof of the pie is in the eating, however—our aircraft are being cleared regularly in two flights.

HIGH PRINCIPLES IN INSPECTION

If flight snags are few, they are nothing to the snags that are eliminated in the "filter" of the inspection system at every stage of manufacture. Mr. G. K. Carlson, Chief Inspector of the Aircraft Division, appropriately followed Mr. Geoffrey's talk by one a week later on the inspection procedure. Another clear-cut explanation, followed by a keen discussion. Should an inspector offer suggestions if he sees a job being done wrongly?—it was agreed that he should do so, through the supervision, and that the supervision should take it in the spirit in which it is meant, so as to prevent troubles at source. Prompt introduction of modifications in manufacture, to reduce the amount of mod. work to be done by Service Dept. working parties in the field afterwards, is becoming increasingly necessary as production grows, and this was impressed upon all present. The ready answers of Mr. A. Adams, Assistant Chief Inspector, cleared up numerous queries and altogether this was a useful and enjoyable hour.

THE SICK CLUB

Those employees who have at least six months' service with the company can become "three-quarter" members of the Sick Club for this year if they join it by the last week in February.

The contribution is 6d. weekly and in the event of sickness a weekly sum of 10s. 6d. is paid for the first 8 weeks and 5s. 6d. for the second 8 weeks of absence from work. There is an annual share-out of contributions remaining in the Fund after sick benefits have been paid out for the year.

On the death of a member a 6d. levy, and of a member's

wife a 3d. levy, is placed on all members—and there are at present well over 4,000—and the sum collected is handed over to the next of kin.

SUGGESTION BOXES

The foremanship lectures in our Airscrew and Engine Division are continuing. On January 30 Mr. Hancock, from one of the Government training schools (engineering), spoke on the organisation and responsibilities of personnel departments. His talk, perhaps, became a little too academic, but the discussion afterwards led on to practicalities and there was plenty to say about suggestion boxes and the question of rewards for suggestions. This is a point on which the managements of depots ought, we felt, to settle upon a common policy, after listening to opinions, and make that policy known without delay. We are therefore glad to learn that it has been agreed that suggestions showing originality of thought and with real value for increasing production are to be rewarded. Others will be adopted where desirable and acknowledgment made without reward.

AN AUSTRALIAN STORY

Extract from a report in *The Times* of Feb. 10 on a flight from New Guinea to Australia by Pilot Arthur Collins in a famous old aircraft.

> " Taylor (the mechanic) picked up a direction-finder which was lying disconnected on the floor of the cabin, and held it out of the window to discover his altitude when banking on a turn."

Whose leg was being pulled ?

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OUR JOB

No. 10 5/3/42

which deals informally with matters of interest to everyone in the de Havilland organisation

SOMEBODY has been heard to say that it is possible to understand how the income tax is calculated, provided you give up all other work and concentrate " very hard " upon it. It is true that people have been taking half days off to visit the Income Tax Inspector's office—that is until bright individuals on our own staff mastered the regulations so as to answer queries, which they now do daily between certain hours at the Works Wages Offices. The Government have just issued a humanly written booklet called " Income Tax Quiz for Wage Earners " which makes it very plain, and the Editor of *Our Job* (after hours of dual instruction) will now endeavour to make it plainer. This article relates to manual workers.

Manual workers have their tax calculated for the half year ; they pay in weekly instalments from January to June the tax on what they earned from April 6 to October 5 of the previous year. Then they pay from July to December on what they earned from October 6 to April 5. Many misunderstandings arise over this system of paying in arrears. One should remember that one is incurring to-day an income-tax debt to be paid about 8 months hence, and should *set some money aside for this.* Otherwise, if, for example, one's own income has increased recently one will have to pay tax next half-year on more than one is paying on

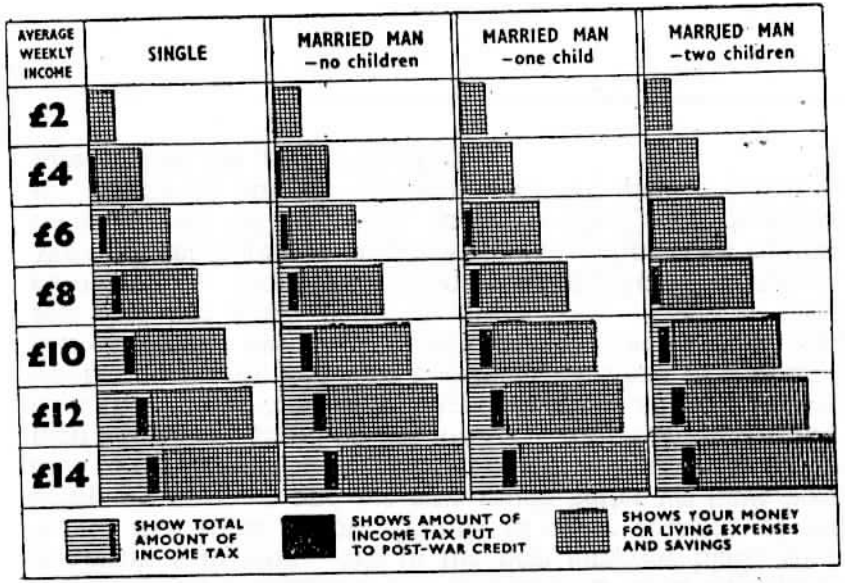
now, and it will feel like an Irishman's rise. Much better to put a little aside now against this "debt," and if possible keep it saved until after the war—in addition to the Government's post-war credit which we will explain below.

Part of one's wages are tax-free. For instance, everyone has a tax-free allowance of one-tenth of his or her earnings. Also, every single man or single woman has a "personal allowance" of £80 per year; for a married couple it is £140. If a wife is earning wages, then, besides the one-tenth and the £140, an additional personal allowance of £45 per year is granted. For each child there is a further allowance of £50 per year. There are other allowances for dependent relatives, certain expenses, etc. The result is that no tax is paid if the earnings are not more than shown here :—

	A year	*A week*
Single man	£110	£2 2s.
Married man with no children ...	£156	£3 0s.
Married man with one child	£211	£4 1s.
Married man with two children ...	£267	£5 3s.
Married man with three children ...	£322	£6 4s.
Married man with four children ...	£378	£7 6s.
Married man with five children ...	£434	£8 7s.
Widower with housekeeper	£144	£2 16s.
Widower with one child and a housekeeper	£200	£3 17s.

Above those figures the rest is called your "taxable income" and you pay 6s. 6d. in the pound on the first £165 of it, and 10s. in the pound on the rest. Thus the more you earn the more you always have left over after paying income tax, as shown in the diagram on the next page.

But on really big incomes the proportion of tax grows until as much as £19 out of £20 is taken in tax.



(Companies, by the way, are not allowed to retain more profits than before the war, for the surplus has to be paid back to Government as Excess Profits Tax. Income Tax has then to be paid at 10s. in the £ on the balance).

Part of the income tax being deducted from wages during 1942, on earnings from 6/4/41 to 5/4/42, will after the war be placed in the taxpayer's name in a Post Office Savings Bank or a Trustee Savings Bank. The part thus set aside is the extra tax we are paying now due to the personal allowance having been reduced from £100 to £80 (single) and £170 to £140 (married) and the earned income allowance from one-sixth to one-tenth. Up to an annual income of about £200 (£3 17s. a week) for a married man without children, or to £300 (£5 15s. a week) if he has two dependent children, the whole of his tax payments are credited back to him for after the war. As another example take a married man, with one child, earning £300 (£5 15s.) in the year to

5/4/42. Because of the reduced tax-free allowances he is paying £26 tax (10s. a week) instead of £9 15s. (3s. 9d.) but the other £16 5s. (6s. 3d.) is being set aside for him as a post-war credit. The Quiz booklet says that each person will be told the amount of this credit as soon as possible after the end of the year, when all his payments are in.

Tax on overtime and on a wife's earnings is puzzling until you take a pencil and jot down the figures. Some people even ask whether they actually *lose* money by working overtime, and whether a man could just avoid paying income tax if he stayed at home one day a week ! Of course the answer is " No " in both cases. The more you earn the more you have left over after paying tax.

Take a married man with one child who earns an average of £305 a year (£5 17s. 6d. a week) without working overtime. He is paying £27 12s. tax (10s. 7d. a week) of which £16 11s. (6s. 4d.) is being set aside for him as post-war credit. Now suppose he does 10 hours overtime a week, including 4 hours on Sunday (double rate). That will bring him in about another £104 a year (£2 a week) on which he will give back £33 in tax (but £3 10s. of that will be post-war credit for him) and he will therefore be £71 a year better off *to-day* (27s. 4d. a week).

Now suppose his wife gets a job at £3 a week. As he is earning £409 (£7 17s. 6d. a week) already, his wife's earnings will be subject to tax at 10s. in the £, *but first she'll be allowed* £60 *tax-free* in personal allowance and earned-income allowance, so the tax she will pay will come to £48 (but £5 10s. of that will be post-war credit for her) and they will therefore be £108 a year better off to-day (41s. 8d. a week). Suppose that her lunches, fares and paid domestic labour cost her 18s. a week more than if she didn't go out to work, her net gain (besides the post-war credit) is about 23s. 8d. a week. It is not easy for a mother of two children to do war work, but a childless mother would fare similarly. Of course, a woman might earn more than £3 a week. For single women there is no tax on earnings up to £110 (42s. 4d. a week).

What does it all amount to ? Taking the case of the married man, with a child, earning £300 (£5 15s. a week) without working overtime. He is not fighting the enemy himself but is *giving* nearly £10 a year to pay for arms for those who are, and is also *lending* a further £16 5s. in the same cause. By working overtime he can get more for himself and give and lend more to equip the fighting forces.

The more he earns the more he keeps.

People sometimes ask how income tax affects men in the forces. Their allowances do not work out quite the same as for civilians. Take the case of a bomber or fighter pilot with rank of pilot officer, married with one child. He earns £264 (£5 1s. 6d. a week) plus £109 (£2 2s. a week) additional for his wife and child. His tax amounts to £15 12s., and because of his modest wage this all ranks for post-war credit.

IMPROVED BLADE-SHOP LAYOUT

The Editor is pleased to publish the following message : " To introduce and use improved methods and appliances which we have designed out of our own solid experience is always satisfying. We in the new airscrew blade shop would like some of our friends in other sections of the company to come and see how much better we have been able to arrange things here from our own knowledge as the men actually engaged on the job. We took the opportunity of a change of premises to introduce many straightforward improvements we had long cherished. Instead of a general dust-extraction system, for instance, we have installed unit sets that are much better in every way. There is more elbow room, more convenience, a brighter atmosphere. We shall get increased output without a doubt. Our canteen facilities here will be better, too. We shall soon be settled in. Come up and see us sometime ; we may give you an idea or two for your own shops."

FROM "THE TEST BED NEWS"

Now that we have got flying suits and helmets on the bed (and gumboots), all we need is a wireless transmitting and receiving set on the job and the same in the office, so

that we can talk to the charge hands and Inspection without walking across to them. One can imagine conversations like this going on:

"This is Bed No. 8U32, U for Unity, calling Bill Driver; we are ready to come off load now, ready for you now, over to you, over."

"This is Inspection calling U32 U for Unity; I am now coming over, be with you in a minute, hope it's O.K."

Of course, perhaps snags would crop up like this:

"This is Bed No. 13, U13, U for Useless, calling Test Bed Leader; our fan K13, K for Kennie, has come off

DO YOU KNOW THEM ?

SOME D.H. PERSONALITIES: Above left is Mrs. Rose Davis, Lady Supervisor of our Aircraft Division, joined as a fabric hand late in 1928, became charge hand in the experimental shop and later forewoman over dope and fabric shops, remembers work on the Comet as a thrill of 1934; appointed to her present responsible post July, 1941, and enjoys high degree of trust from our women, whom she finds good, co-operative workers.

On the right is Mr. W. U. Snell, manager of an important Engine Repair Section. He joined Major Halford in 1937 after a long, interesting engineering training, was transferred to D.H. Engine Division (Experimental), went to engine testing at outbreak of war, later assuming charge of the entire section.

Central figure in the group is Mr. A. T. Kerr, Scottish born, served several years with Hamilton Standard Propellers in America and came back to help inaugurate our blade shop in 1934, cut our first few blades out of the solid by hand; now general foreman of the Blade Section. Behind him is Mr. G. Fawcett, who joined us in 1936 as one of our first blade men and is now a blade shop charge hand. In front is Mr. P. Dickinson, blade finisher, good man at the job.

machine No. C/31313, C for Charlie, and now awaiting instruction, over to you, over."

"This is Test Bed Leader calling U13, U for Useless; retrieve fan from 'drome and replace without stopping engine, go to it, go to it."

Reproduced by courtesy of Mr. D. Hunter.

NO WAITING TIME IN THE PLANT DEPARTMENT

In the early twenties at Stag Lane if the woodmill couldn't avoid cutting a few spars on a winter afternoon the D.O. staff had to go home early, because the old generating plant wasn't man enough to give bright lighting in the offices while the mill was working. The Plant Department then comprised a man and a boy. Mr. J. Gardner, Aircraft Division Plant Manager, described present-day conditions in a talk on Feb. 18, and showed the great job his staff have to control in maintaining all machine tools and services as well as supervising new building work.

We noted Mr. Gardner's plea for full information when a plant engineer is needed. Too often somebody will telephone the Plant Dept. and say "Driller broken down" without saying whether the failure is mechanical or electrical and even without saying clearly where to find the faulty machine or whom to ask for there. There is no waiting time in the Plant Department.

LADY RATEFIXER SUGGESTED

In his recent talk to foremen Mr. Rudge was asked by Mrs. Ivy Hill, forewoman of the fabric and dope shop, whether a woman ratefixer could be provided for her department. He said this would be worth considering, for a woman might be preferable for demonstration work; and he added that possibly a woman would be less likely to give way than a man in any argument on times allowed, which caused considerable amusement to all!

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STOP PRESS

AIRCRAFT PRODUCTION SPEED-UP.

A meeting was held at the main aircraft factory last week to discuss means for increasing output, and those present agreed upon the principle of working the maximum amount of overtime for efficient production. The matter will be reported in more detail in our next issue.

AIRSCREW OUTPUT: FEBRUARY.

For several days towards the end of February the tug-of-war production indicator in the main airscrew shops has been registering an output behind the programme set, and satisfaction was mixed with surprise when it "caught up" on the last day of February. The explanation is that removal of the blade shop to new premises naturally caused some set-back and there was a temporary shortage of certain machined parts. These deficiencies were later made good by special effort on the part of the component and assembly shops, the effects of which were not seen until the end of the month. Mr. Nixon (not to mention the R.A.F. and the Russian Air Force!) would appreciate an endeavour by the blade shop to retrieve the rest of the leeway that resulted from the move.

OUR JOB

No. 11 19/3/42

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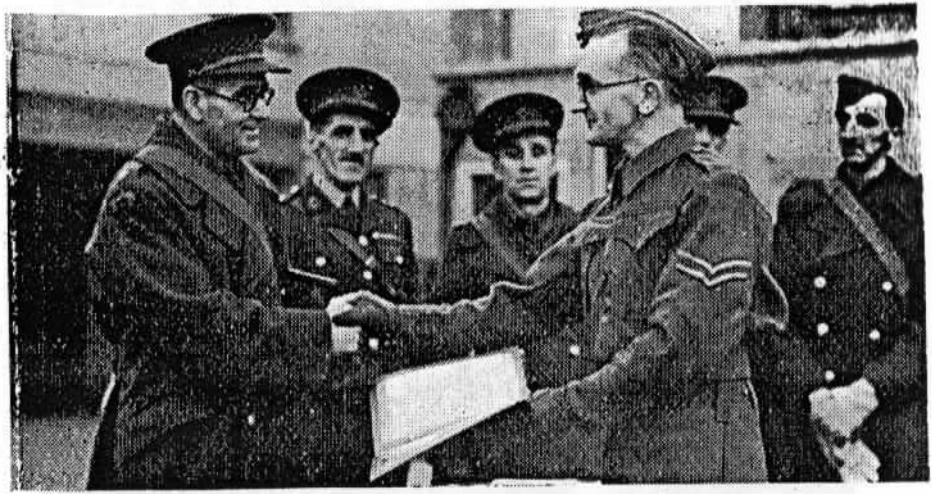

Major J. Maslin, at a Home Guard parade, presenting to Cpl. L. W. Brite the Certificate of Meritorious Service recently awarded for his fortitude in a bombing incident. Trapped in a directly hit shelter Brite took the weight of concrete slabs on his own shoulders, protecting other injured men and encouraging them until they could be removed. He had a broken pelvis himself which kept him in hospital 15 weeks afterwards.

SHOPS' INITIATIVE IN PRODUCTION DRIVE

We had not time to record in our previous issue more than a stop-press note of the Aircraft Division meeting on Feb. 24 to discuss further suggestions for increasing output. All shop stewards and committeemen were called and each was asked to bring one other individual from his shop. Nearly 400 men and women attended. Mr. Grinham invited Mr. Sell to take the chair, and received from the shops' representatives a memorandum containing proposals for enlarging the Works Production Committee. He said that he welcomed a more representative committee which might enable production matters to be discussed on broader lines, avoiding the smaller details which were inclined to crop up. It was agreed that the new committee shall include approximately twelve individuals to be elected from the shop stewards and other shop representatives in both main works and dispersed departments.

Mr. Grinham said that the main need at the present time is for man-hours. The average time worked is now about 52 hours, and we need to achieve a general 59-hour week as soon as possible. This could be done by working 2 hours overtime on four nights in the week (to 7.30 p.m.) and 4 hours on Saturday afternoon. Every fourth week the 12 hours overtime would be obtained in a different way—by working to 7.30 p.m. only two nights in the week, having Saturday afternoon off, and working 8 hours on Sunday. A rota is being arranged for this Sunday work.

Mr. Grinham emphasised that the bottleneck at the present time is in sheet metal parts and overtime in that section is of paramount importance.

The progressing of material supplies through the shops to make overtime working as effective as possible was discussed, along with questions of planning, supervision, supplies, transport, factory meetings, food problems, etc. There was a lively debate from which only good could result. Upon information given by Mr. Grinham a resolution was unanimously passed to do everything in the power of all to achieve the production target for March.

One request brought forward was that the production programme should be exhibited in the shops for all to see. A large chart to show this "target," and with it the day-to-day progress, had in fact already been constructed and is in use. A black line shows the number of aircraft (the

Aircraft production on a quantity basis : Mr. E. G. Grinham, General Works Manager of our Aircraft Division, has applied valuable personal experience to a war-time task. Trained at Vickers and transferred to their Aviation Section in the very early days of the "one-off job" he gained his production knowledge through the era of great expansion in the motor industry and became Chief Engineer and Deputy Managing Director of the Standard Motor Co., Ltd. He is surmounting the problems of getting into production and we are all resolved now to achieve his programme.

number of horizontal lines on the chart) due to be completed by the end of the month and intermediately. A red line, extended day by day, shows the number of aircraft actually produced. If achievement keeps level with programme of course the red line will lie along the black line; if production beats the programme the red line mounts above the black line, and *vice versa*.

A request was made that a pilot experienced with our product should come and talk to us, and it so happens that the editor of *Our Job* was at that time trying hard to get permission for a friend in the Service to visit the factory, which has since materialised, as reported on another page.

Another request was that *Our Job* should report the work of the Works Production Committee and this Mr. Grinham gladly agreed to, for that is just the sort of purpose for which *Our Job* is most useful.

One further suggestion was that notice-board facilities should be provided for posting reports of our Production Committee meetings, together with other matters of interest to production. This was agreed. Large well lighted boards for the Aircraft and other Divisions were already being constructed, to a uniform design; they have been delayed a little by the pressure of more urgent work.

The enlarged Works Production Committee is now in the process of formation and we hope to be soon reporting its activities. In the meantime—production !

By way of a mild "normalising process" to remove any "temper" after 18 months unbroken development work the Progress and Production Control Department of the Engine and Propeller Division got together on March 7, saw the Palladium show and danced afterwards to our own orchestra. Speeches, as such, were avoided, but kind words about Mr. Hallpike, Mr. H. J. Nixon and others could not be entirely suppressed.

NEWS FROM THE FRONT

THE R.A.F's home front covers all Western Europe, and it is not often that any of us gets the opportunity to talk to a pilot who is regularly in touch with the enemy over this area and has done several operational sorties in the past few days. Some of our main aircraft factories had such a chance last week when a flight lieutenant visited us almost within a few hours of returning from Germany. He brought news straight from the front. He described a recent operational job in detail.

We cannot discuss his talk in *Our Job*. If it were not for the trusting co-operation of the R.A.F. authorities and the Ministry of Aircraft Production we could not have arranged this visit. They allowed us the satisfaction of hearing what the general public must not hear, and they did so because we are in a position of special responsibility. It must be repeated here and now that we are on our honour not to discuss with outside people any operational information we may gather from any special visit of this kind, and when one meets the pilot whose work and life depend upon the enemy's ignorance the need for this secrecy becomes suddenly vividly clear.

How *can* we thank a man like this for the work he is doing? Leaving a wife and a baby daughter and breaking up his home he goes into the R.A.F. in the first few weeks of the war and, after training, does about twelve months of patrolling over the high seas in a landplane, often far out across ocean stretches. Later he is on night fighters. During an unexpectedly quiet winter (from the point of view of air raids) he finds night patrolling dull and applies for a different job because, in his own words, he feels it is time he did a bit more for the war effort. Now he manages to get a small cottage near the aerodrome and his family join him again. He is pitting his wits against the enemy and the weather, as a regular job, for a few pounds a week.

Of course the case is typical of thousands among us (though not of millions), and it is perhaps unfitting to go over all the details as we have done above. Certainly the officer in question would dislike it and we literally have to make sure that he will not see a copy of this private bulletin of ours. Nevertheless, these are the people we are making the aeroplanes for. It is for them we are working the overtime and the disagreeable night shifts. To be more correct, it is so that they can fight for us.

THE UNBROKEN CHAIN OF INSPECTIONAL EVIDENCE

Mr. D. M. Brown, A.I.D. Inspector in Charge, Aircraft Division, gave a talk on A.I.D. procedure on Feb. 25. His theme was the chain of inspectional evidence from raw material to completed product. Questions showed that there was the feeling that the company's organisation could undertake all inspectional duties now performed by the A.I.D. Mr. Brown explained how many inspectional functions have already been handed over to manufacturers, but that the A.I.D. must remain to verify adherence to contract conditions. (Anyway, how would we get on *without* Mr. Brown?)

SPARES SUPPLIES HAVE FIRST PRIORITY

Personal ground engineering experience of a quarter century was behind the short talk on aircraft repairs which Mr. A. J. Brant, our Service Manager, gave on March 4. The point he pressed, in connection with our present job and the war conditions, was that repairs must be separated from maintenance—if done in the same hangar they will inevitably become the Cinderella. When an operational aircraft gets into big use the output of repaired aircraft may exceed the output of new machines, and must not be considered as secondary in importance. Spares organisation could win a war—and *vice versa*—and therefore A.O.G. (aircraft-on-ground) demands are to receive complete

priority over new production, even to the tune of taking parts off aeroplanes on the assembly line. Much depends upon Mr. Long's spares ordering system. A small but important point that arose was that rough finish on sheet metal parts causes more cracks than is generally realised, cowlings being the principal case in point.

APPORTIONING THE SPACE IN *OUR JOB*

A large proportion of this issue of *Our Job* is devoted to Aircraft Division news, and it may be said that our aircraft factories have had more than their share of the available space in recent weeks. This is mainly because the present are very active and " newsy " times in the Aircraft Division but it is also partly due to a tendency in some of the other departments to be " backward in coming forward " with news of the current happenings and considerations which may affect the war effort. Remember, the purpose of *Our Job* is to spread information with the object of improving productive efficiency.

A.R.P. GET TOGETHER

The Social Committee of our Engine and Airscrew Division got together the A.R.P. personnel of all their dispersed depots at a party and dance on March 6. Mr. A. S. Butler, Mr. Street, Dr. Thompson and Lt.-Col. Clark were present. Mr. Butler presented proficiency certificates in first aid, anti-gas treatment, etc., to about 150 people.

IMPORTANT VISITOR

H.R.H. The Duke of Kent visited one of our Second Aircraft Group factories a few days ago and had the fuselage manufacture demonstrated to him. He was particularly interested, having previously seen wings being made at another S.A.G. depot. He looked extremely fit.

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OUR JOB

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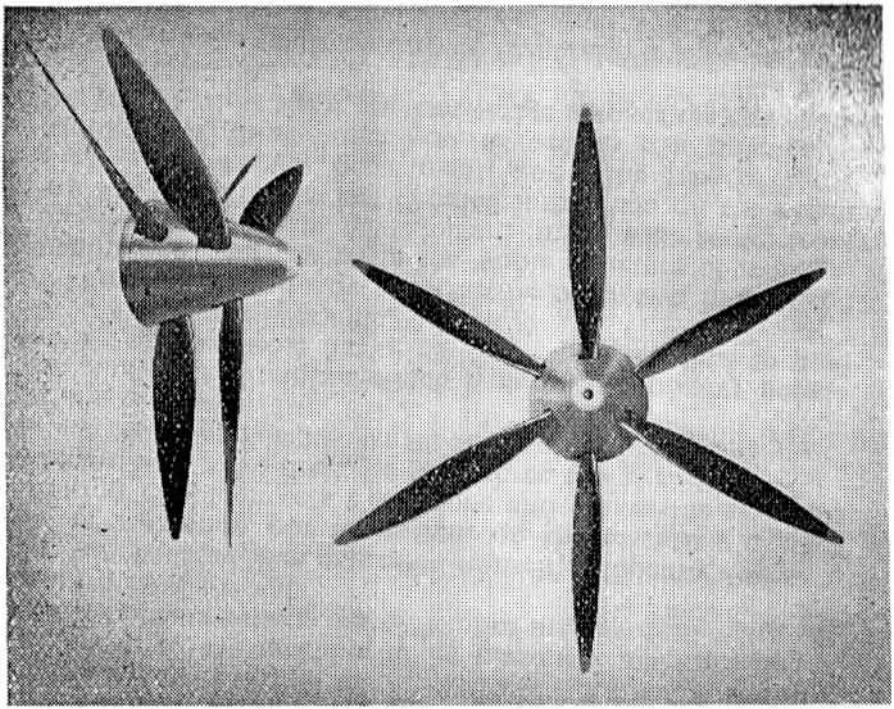


OUR NEW JOB: The de Havilland counter-rotating constant-speed all-metal propeller.

THE SYSTEM AND THE INDIVIDUAL

Mr. Lee Murray's summing-up of the twelve talks which the Aircraft supervision staff have held this winter, covering all the main sections of the Division, went much farther than the system itself. He sought beyond the method to the man, beyond the factory to the citizen. Indeed, he essayed two distinct objects—first to explain the framework of the Company, keying in the functions of the directors and completing the genealogy of the organisation ; secondly, to discover the spirit which actually carries out the work.

The first part of his talk will interest everybody in our Company. The second might well inspire any adult who is engaged in destroying the forces of tyranny.

Mr. Murray started his summary of the system by examining its operation before the stage at which " it is assumed that the contract specification and shape of the aircraft have been determined "—that is, before the design staff really start to create the design. He showed how Captain de Havilland, out of his designing and flying experience from 1908, will weigh up with Mr. Walker's profound knowledge the basic problems of designing an aeroplane to fulfil a need, how Mr. Hearle's deep understanding of production, Mr. Butler's wide flying experience, Mr. Nixon's judgment of the finance involved and Mr. St. Barbe's keen appreciation of marketability are brought to bear together with the opinions and calculations of Mr. Bishop, the chief designer, Mr. Clarkson, the chief of aerodynamics, and a number of trained minds among our senior staff. If they determine in error the Company takes the consequence. He discussed examples—the Comet of 1934, the Albatross of 1937 and the Flamingo of 1938. He outlined the design office procedure and Mr. Bryan's control of drawing sand their distribution. He explained Mr. Grinham's responsibility for the work of planning the factory and getting the aeroplane made, with Mr. Rudge supervising methods of manufacture, Mr. Long ordering and progressing, Mr. Allardyce superintending the shops. He quickly covered the functions of inspection, finance, plant maintenance and expansion, the service department and other sections.

A brief discussion developed on one or two problems of dispersal, culminating in Mr. Murray's opinion that whilst dispersal of the machine tools, personnel and material of production is sound, big difficulties are involved when the control is dispersed.

Mr. Murray then expressed himself, diffidently and with a determination not to preach, on the essentials of that vital spirit which gets work done and makes the system a living thing. We need, he said, three things :

1. A sufficiently worth-while objective.
2. Enthusiasm.
3. The discipline which is necessary to carry people over those flat spots that must from time to time attack everyone.

The first we already possess, the other two have to be maintained by everyone in the whole structure of management—and he meant management in the wide sense, from the top down to the last detailed instruction on the bench itself. Know your department, know the jobs of those around you, those under you, as well as it is practicable for you to know them, for knowledge invokes the sympathy of understanding.

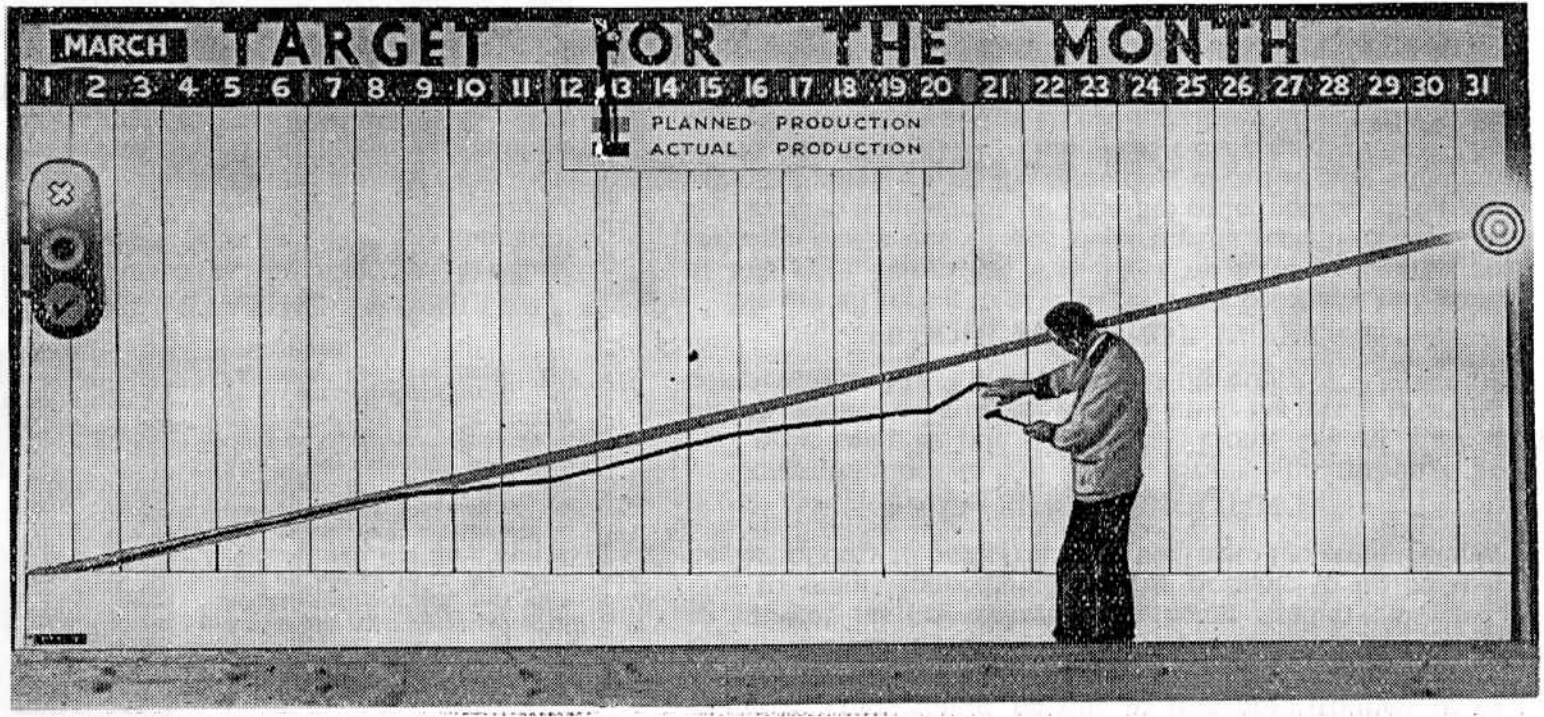
This quotation from one of General Wavell's lectures, he felt, conveyed a thought worthy of application in industry:

> " First, never to try to do his own staff work ; and secondly, never to let his staff get between him and his troops. What a staff appreciates is that it should receive clear and definite instructions, and then be left to work out the details without interference. What troops and subordinate commanders appreciate is that a general should be constantly in personal contact with them, and should not see everything simply through the eyes

of his staff. The less time a general spends in his office and the more with his troops the better."

Appreciation of others' difficulties, Mr. Murray added, must be combined with more discipline. Punctuality and tidiness could both help output enormously. Excessive overtime produces bad work, and our aim is that everyone should have one rest day a week—though at present we must ask for working on one Sunday in four—but supervision staff who are at present working far more than that should ask themselves seriously whether they are not jeopardising their own fitness and the interests of their company and country. Finally, Mr. Murray advocated the pursuance of natural and cultural hobbies, games, garden work, literature, and called for individual examination and planning of our limited leisure in these strenuous times.

He did not propose a discussion upon the second part of his talk, but Mr. Hearle rose to say how gratified the directors were at the way these winter talks had gone on. We do not express ourselves too well as a nation, he said, and we should try to continue these discussions and get used to sound talking among ourselves. We had no doubt got a bit soft in the past and had accepted too much "potted amusement." In seeking to upgrade people it was the most difficult thing in the world to find the big man who could take on the big job. He said that he was extremely keen on this whole question of education and of fitting ourselves in every way that is open to us to meet our responsibilities.



Leeway made conspicuous: Size and simplicity are the keynote of the Aircraft Division's production chart. The effect of even transitory drags on output is not allowed to escape anybody's notice even for a day.

Aircraft Division wedding:—Mr. L. S. Hind, who joined our Wages Department in 1933 and for the past two years, as Income Tax Officer, has been solving the most ingenious of all officialdom's puzzles, was married on March 14 to Miss Jean Rabone, who has been with us six years and whose quietly cheerful conscientiousness, as secretary to Mr. Long, our Chief Development and Purchasing Engineer, contributes notably to the smooth running of a harassed department. All happiness to the bride and bridegroom.

OUR NEW COUNTER-ROTATING PROPELLER.

No. 6 of "Our Job" referred to the new de Havilland four-blade propeller. In this issue we show (on the front cover) two pictures of the de Havilland counter-rotating propeller, another new development and certainly the most important technical advance since Stag Lane produced their first controllable-pitch propeller on July 30, 1935. The counter-rotating propeller satisfies the need for bigger blade areas for efficient operation in the rare atmosphere at high altitude, thus meeting a demand created by the phenomenal progress in the supercharging of modern aero engines—and without the objection of very large propeller diameter, which introduces undesirably high tip speeds and undesirably tall undercarriage structures. Another important advantage of the counter-rotator is that it straightens out the slipstream, with significant aerodynamic advantages.

PROMPT REPORT OF SICKNESS

Dr. Thompson, always seeking the causes of health ailments as well as curing them, points out one of his difficulties which is caused by people who are absent from work not promptly reporting the reason to their foremen. For example, colds might be due to transport troubles or to ventilation defects in a certain shop and if the sufferer reports the fact quickly perhaps steps can be taken in time to prevent his co-workers from being similarly afflicted. Not to report immediately if it is possible to do so is a neglect of duty to one's friends as well as to the general cause.

S.A.G. SHARP SHOOTING

Congratulations to Vol. D. W. Evans who although he had only been in our "Avenue" Home Guard Unit a month, walked off with the Silver Cup in the recent shooting competition. Mr. Thom presented the cup.

PRODUCTION—NOT PAPER

We are all trying to save paper—our company was good at this even before the war. Yet we have discovered an instance where one of our departments recently issued 18 consecutive requisitions on separate order sheets, all on the same suppliers, all on the same day, each for only one item worth less than £100. One sheet would have done. The department concerned is exceedingly busy and is not to be blamed for a single unexpected instance, but it just shows how our growing responsibilities call for continuous overhauling of the system.

APPORTIONING THE EFFORT

Imagine the task of categorising and organising every variety of man-power and woman-power in a nation, so that every class of worker, technician, organiser is employed for the most urgent needs and in the proper proportions. Imagine the enormous responsibility of enquiring and deciding the relative priority of demands for, say, machinists from a gun factory here and an aircraft factory there, and collating these industrial needs with the needs of Navy, Army and Air Force workshops. In peace time it would require something like a five-year plan—indeed, the task has never been undertaken. Mr. John Maslin gave us these

angles to ponder over in his talk on March 11 about employment, Factory Acts and wartime legislation. Considering the greatness of the task his opinion is that the system is working with surprising smoothness. The discussion enabled several detail problems to be explained.

An unkind impression of Butch Lewis, who, besides his organising work comperes Aircraft Division variety shows.

VARIETY REVITALISED

The Engine and Propeller Division orchestra (now 35 members) played to an audience of over 400 last Friday, the programme including one of the Brahms Hungarian dances and a selection from Coward's "Cavalcade." Mr. Bradfield tells us that the fourth show of the E. and P. Division Dramatic Society, on April 15, 16, 17, will be a musical revue called "April Foolishness," with a revue orchestra directed by Mr. Clifford Jenkins.

The Aircraft Division Concert Party is also putting on a new show on April 17 in the new club room. There will be new features and new faces but old favourites will not be missing. Mr. Lewis says that the show will have "what you said the earlier shows lacked." The Aircraft Division dance band is now playing during lunch break on Mondays and Fridays.

Dal Young, who is adding to her laurels as a star by also acting as producer.

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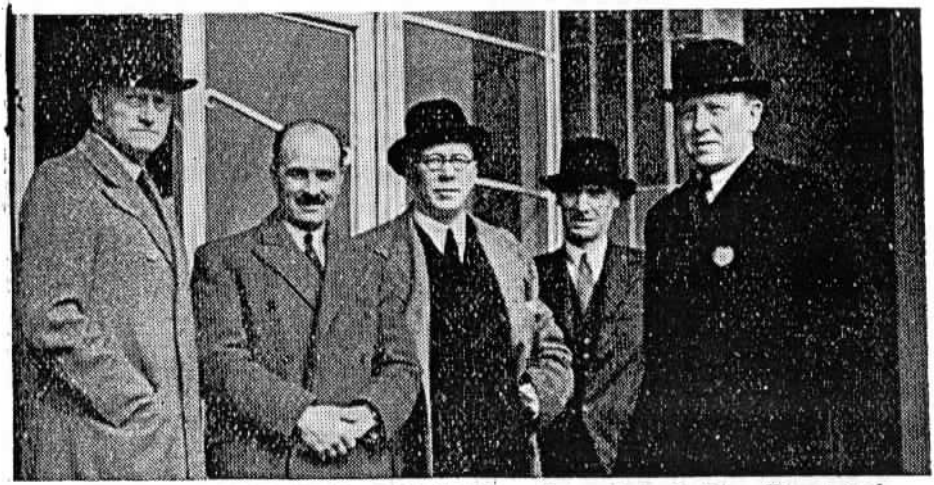
MEMORANDUM OF INFORMATION TO ALL DE HAVILLAND PERSONNEL — No. 13 16/4/42

THIS issue of *Our Job* has a smaller "heading." The paper control regulations require it. *Our Job* uses a few hundredweight of paper a year and much of that is re-gathered and re-pulped, but, if only as an example, we are going to avoid spacious headings henceforth—if four square inches can be called spacious.

A memorandum of this kind is necessary in our widely expanded and scattered organisation. Loudspeakers and notice boards cannot spread information among us like *Our Job* can, and does. And here let the Editor reiterate that his function is to spread information, with the object of



A VISIT FROM THE MINISTER: Colonel J. J. Llewellin visited certain of our factories very soon after he was appointed Minister of Aircraft Production. Talking to some of our shop stewards he was asked his opinion of the aircraft we are making, and replied that they were "a fine job" and that the R.A.F. want every one they can get hold of. In this group, left to right, are: Mr. F. T. Hearle, Mr. A. S. Butler, Mr. A. Dunbar (Deputy Controller-General of the M.A.P.), Captain de Havilland and Colonel Llewellin.

improving productive efficiency. We do not need to be preached to about production. We all know only too well that a great and sustained effort is necessary to save our country, to save our chance of extending and developing the doctrine of democratic co-operation in the world instead of seeing it crushed by self-appointed and brutal " bosses." We know that we as a people have not been so unselfish or so efficient as we should have been, and in so far as we realise that we have taken the first step towards the self-improvement which is indispensable to our survival.

MARCH ENGINE AND PROPELLER OUTPUT

The output programmes of our Engine and Propeller Division for March were attained and in some cases gratifyingly surpassed. The Hydromatic production exceeded schedule despite the change-over of shops.

PRODUCTION BY WILL POWER

Endeavouring to achieve the aircraft production target for March a team of electricians nine strong determined to put forth a special, personal drive. They worked from 8 a.m. on a Tuesday right through to 11 a.m. Wednesday, then from 8 a.m. Thursday to 2 a.m. Friday and, after a short sleep, from 8 a.m. Friday to 5.30 p.m.—and then on Saturday and Sunday. It is reckoned that this effort brought their output forward by practically a week. The doctor reminds all of us that excessive overtime is not good for health—or for consistent production—but this was a special case. The team's attitude was that if the R.A.F. need the aeroplanes then will power on our part will get them, even despite shortages and setbacks. It was a good performance. A word of appreciation is due also to the supervision for the very long hours they have worked over the same period. They, also, must remember Mr. Murray's warning about overwork (*Our Job* No. 12).

One of the main reasons why the March target was not quite reached was the difficulty of getting enough labour to cope with the electrical work. We are still struggling, also, with the task of completing production drawings, battling with the necessary multiplicity of "marks" and the modifications which arise continuously from the R.A.F.'s war experience. A simple incompleteness of drawing, such as the decision whether five or six clips are required for a certain run of wiring, must puzzle the man on the job. It could easily be settled, he thinks—and he is right, such details *are* being settled with great rapidity. But the more urgent ones have to be settled first because we have not enough responsible men to settle all these hundreds of details at once. There are just not enough of them available in the country to give any aircraft manufacturer while-you-wait service on the less important points. The main job is going well; that is what matters.

PITY THE POOR ORGANISER

Verily it is said that you have to carry responsibility yourself to find out how heavy it is. Mr. H. J. Nixon had occasion to speak to a shop sweeper (and it wasn't the first time either) about not working properly. The sweeper charge-hand, who was nearby, remarked " Quite right, sir. I am always telling him that you are the only one allowed to walk about these shops doing nothing."

WARSHIP WEEK RESULTS

The Aircraft Division target of £2,000 for the local Warship Week was easily surpassed. No. 2 Savings Group's small savings bought £2,932 10s. worth of National Savings Certificates and No. 1 Savings Club deposited £203 in the Post Office. The Engine and Propeller Division (No. 3 Savings Group) set themselves a target of £1,500 and achieved, in small savings alone, £2,165 18s.

SAVINGS LEAGUE RESULTS

Results of the first month's competition in the War Savings League, inaugurated within our company on Feb. 15, are as follows :

Aircraft Division and Aircraft Repair Depot (Nos. 2 and 4 Savings Groups)

A. Teams having the highest percentage of members :

1st	Dispersed Sheet Metal Shop ...	100%
	(Congratulations to Mr. Sheppard's team)	
2nd	Service Department	88·7%
3rd	Flying School	51·7%

B. Teams showing biggest increases in membership :

1st	Dispersed Sheet Metal Shop ...	80·2%
2nd	Service Department	69·8%
3rd	Aircraft Repair Depot	38·3%

Engine and Propeller Division (No. 3 Savings Group)

A. Teams having the highest percentage of members :

1st	Engine Inspection	70·05%
2nd	Planning	68·48%
3rd	Propeller Inspection	60·27%

B. Teams showing biggest increases in membership :

1st	Planning	58·2%
2nd	Engine Inspection	54·98%
3rd	Propeller Inspection	42·52%

ENGINES AND PROPELLERS ON THE JOB

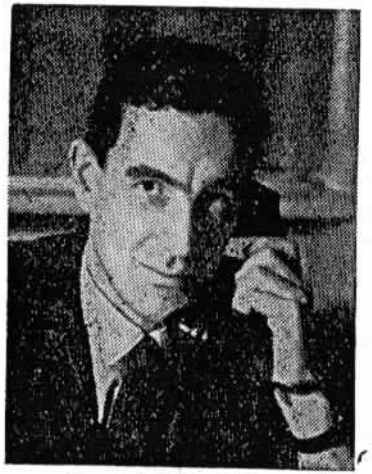
A party of 10 from our Engine and Propeller Division are visiting an operational fighter station on April 18, at the invitation of the R.A.F. The individuals have been chosen on merit and will include representatives from the shop stewards and supervision. With improving weather arrangements are being made for some small parties from our various factories to visit certain of our aircraft assembly shops and perhaps to see some flying. Return visits would also be interesting. The visits will not be made in working time.

BETTER CLUB FACILITIES

One result of the steady expansion of our Aircraft Division has been the provision of a new building for the de Havilland Club—a more satisfactory arrangement as, being off factory premises, members can bring in visitors without satisfying the sentries. The new quarters, which have not cost the club any capital outlay, were opened on Easter Saturday by Mr. Butler and Mr. Hearle starting the snooker balls rolling. Besides a large billiards room there is a fine, cheerful, heated hall for entertainments of all kinds, a pleasant bar (fully licensed), a committee room where the D.H trophies are well displayed, and a room set aside for the boys and girls with a pianoforte, table tennis and billiards tables, etc. Tuesday is gymnastics night for men, on Thursday Miss Eileen Fowler conducts a keep-fit and musical comedy dancing class for ladies, and evenings are set aside for whist and other social activities, all under Mr. Holloway's supervision. The club is conveniently near the sports ground (for which the pavilion dressing rooms are still available) and is open seven days a week until 10.30 p.m. The club facilities now comprise Rugby and Association football, hockey, cricket, bowls, tennis, swimming, badminton, squash racquets, a miniature rifle range, angling, amateur dramatics, table tennis, billiards, darts and all indoor games and a library, as well as the gymnastics, dancing, etc.

EYE-TESTING SERVICE

Dr. Thompson has organised an optical testing service which becomes available forthwith in the main and dispersed depots of our Aircraft, Engine and Propeller Divisions in the south of England. It is not at present available to our Aircraft Repair Organisation. The cost of testing is met under the National Health Insurance. The cost of spectacles is borne by the individual or through his or her Approved Society or the Hospital Savings Association. Applications should be made at the first-aid rooms.



DO YOU KNOW THEM?

Some D.H. personalities. On the left: Mr. J. J. Parkes, General Manager of our Engine and Propeller Division and of our Northern Propeller Division, obtained his early practical experience with two once-famous motor manufacturers, Angus Sanderson and Swift, was one of the first members of the Auxiliary Air Force in 1925, joined Messrs. Norman and Muntz in 1928 when they were creating Heston Airport and gained wide aviation experience, including flying over 80 aircraft types; this brought him in touch with our company which he joined as Assistant General Manager in 1936. Has done much to build up production of c.p. propellers in this country.

From left to right: The Misses M. Graydon, P. J. Rapp, V. Cook and G. Coulman, the little group of untrained girls who took the first course of 6 lectures covering Inspection as required by the Propeller Inspection Dept., controlled by Mr. Lineker. At the ensuing examination all got through with surprisingly high marks, and at an early stage found no trouble in accurately using micrometers and verniers.

FIRST AID IN THE SHOPS

A keen first-aider in one of our big repair establishments says that few realise that, taking all our dispersed centres together, we have nearly 300 men and women who are qualified to render first aid to the injured, and if they were better known to those around them quicker help would be available when somebody is hurt. It is obviously better, in simple cases, to give aid on the spot and accompany or carry the patient to the first-aid room than to bring the professional staff to the scene. The first-aiders are known by their red-cross badges, which distinguish them as people who, because of war's very obvious implications, have taken the trouble to attend an approved first-aid course and become qualified by examination and certificate.

CARELESS WORDS

Mr. G. V. Street, in charge of A.R.P. and Security matters at all our many factories and depots, issues a reminder that we should not discuss secret matters in public places. Especially on motorbuses there have been instances lately which emphasise the need for much greater care.

VENTILATION PROBLEM VENTILATED

On reading in *Our Job* No. 12 the doctor's request for prompt report of sickness, some Aircraft members thought at once of the ventilation problem in their own shop, which is a separate small building for special work. The Editor finds on enquiry that the plant department have done the very best they can with the present building and are making every effort to get the new building erected. Censorship makes it difficult to say more in print.

A complaint has also reached *Our Job* about the ventilation of one of the Propeller Division shops, and has at once been placed before the doctor and the general manager.

"BILL" KELLY—G.E. No. 1

We have lost an old friend in the passing, at the age of 71, of "Bill" Kelly who will be well remembered by all who

worked at Stag Lane, between 1924 and the closing of the aerodrome in 1934. William James Kelly was a cabinet maker—a fine craftsman—who joined the Aircraft Manufacturing Co., as a war-worker in 1915. He soon became expert in the construction, rigging and maintenance of the D.H. aeroplanes of those days.

In 1919, the year which saw the beginning of civil aviation, Kelly became Licensed Ground Engineer No. 1 to "sign out" the de Havilland aeroplane on which Capt. Saint inaugurated the new era. After a period with Daimler and Imperial Airways he rejoined his old colleagues at Stag Lane where he served on the hire service and flying school and later in the aircraft repair establishment. Since his retirement in 1938 the company has been in constant touch with him.

CAN YOU?

An anonymous contribution from the works.

Can you look him in the eye
As you wish him cheerie-bye
And say, "Devilish! old man
But I'm doing what I can"?
Remember that there buddy, that pal you used to know?
The chap who went to sea, about a month or two ago.
He watched the slim torpedoes, come speeding through the sea.
They struck: and Oh! the water it was icy as could be.
If only one of *our* bombs could have hit 'em full and square,
If only there were someone near, to lend a hand or care.
A useless cry, a catch of prayer—has life to end like this?
Then as we watch the heaving sea his tortured face we miss.
Can you look him in the eye
As you wish him cheerie-bye
And say, "Devilish! old man
But I'm doing what I can"? WINGDAN.

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OUR JOB No. 14
Memorandum of information to all de Havilland personnel. 1/5/42

THE "TOTAL POLICY" OF OUR COMPANY

At the annual general meeting of the de Havilland Aircraft Co., Ltd., on April 28, Mr. A. S. Butler, the Chairman, could not, of course, give an account of our activities during the year, but said that it had been the biggest year in the Company's history, and the fact that the profits were greatly reduced (only two-fifths of the previous year's) was entirely due to increased taxation. He said that in our total policy of taking on every task which would utilize our qualifications in the nation's best interests we have asked ourselves no question other than whether we can achieve it, and we are not allowing considerations of the Company's future to influence our activities to-day.

He recorded the directors' appreciation of the untiring efforts given by all in our many works and paid a special tribute to the senior employees. "The company's total policy and the wide field of our activities here and in our Dominion factories," he said, "have entailed the stretching of our technical and organising capacity, and of our finances, almost to the limit, imposing the maximum load upon the shoulders of our experienced leaders."

He explained how in design these men have to exercise far-reaching vision and judgment to keep the lead over the enemy; in production they never have all the factors under their control and have to meet unpredictable difficulties quickly and resourcefully; in finance their vigilance and responsibility are proportionate to the immense figures involved. He finished by saying that the highest pressure in industry can be maintained only if managements are given understanding by men and women at the bench, by the Government and by the public as a whole. Our company expects nothing from our efforts beyond a better world in which to turn aviation to its human purpose.

NEW AIRCRAFT SPARES DIVISION

The importance we attach to spare parts in our own contribution to the war effort may be understood from the fact that we are setting up not merely a separate spares department but a new Spares Division to organise one big section of aircraft spares supplies for the R.A.F. Mr. T. C. Wallace will manage it, and the main production organisation will be freed to concentrate on complete aircraft. Mr. W. A. Ward, from long and detailed experience, will assist in developing the new division, and the co-operation of all will help these men in their big task.

The new Division does not complete its job by merely fulfilling Ministry contracts ; Mr. Wallace will maintain the closest possible liaison with Major H. de Havilland regarding R.A.F. requirements and with Mr. A. J. Brant regarding repair firm's requirements.

AIRCRAFT DIVISION JOINT PRODUCTION COMMITTEE

The enlarged Committee forecast in No. 11 of this memorandum held its first meeting on April 21. It lasted 2½ hours. It is important that the members should be widely known and a large photograph of the meeting is therefore reproduced in this issue with names. Mr. Grinham, in the chair, welcomed and introduced the members, said that their aim was to establish understanding in all matters affecting efficiency of production, and expressed confidence that they would succeed. The minutes of meetings will be distributed to all members, and in this memorandum we will summarise them as fully as practicable.

The agenda included three main subjects raised by representatives of the bench and four by the management. Thus :—

1. **Night shift problems :**

(a) Arrangement of and accessibility to stores. Mr. Grace to consider appointing shop feeders specifically for night work ; day-night change-over arrangements, etc.

(b) Operation difficulties. Trouble when day workers lock up some materials which night shift need, particularly in the case of " team operations." Inspection delays at night. Could operations be made up in the layout instead of in the stores ? Should A.G.S. materials be bulked ? Mr. Grace to investigate.

(c) Supervision difficulties. Should liaison between day and night supervision be by written instructions ? Mr. Grinham points out that one idea of the night-shift rota is to have experienced day-shift supervision on nights. Mr. Grinham to investigate points raised.

2. **Stores problems :**

(a) D.N's clearance by charge-hand responsible. Mr. Rudge suggests that each charge-hand's operations should be listed against his name. Duties of girl shop feeders.

(b) Layouts in shops. Should uncompleted jobs be returned to layout when not being worked on ? Should job times be re-fixed on the basis of a week's work rather than 100 off, etc. ?

(c) Departments to have own stock.

(d) Vari-coloured " flimsies."

A sub-committee is to deal with all the points raised under these heads.

3. **Delay in ordering jigs :**

Mr. Rudge explains why the system of altering jigs in advance of Methods Engineers' orders should now cease. Closer location of Methods Department will give all-day contact with shops.

The four points raised by Mr. Grinham all concerned the more efficient use of working hours :

(a) Tea-breaks. Suggestion of replacing tea-breaks by bringing refreshments into shops. Mr. Allardyce, Miss Mould and others to form sub-committee to seek convenient arrangement and bring forward concrete proposal. Mr. Murray glad to discuss any suggested structural alterations, etc.

AIRCRAFT DIVISION JOINT PRODUCTION COMMITTEE

STANDING :—

Mrs. D. G. O'Dell, Joint Sec. J. W. Lawrence, Stores, Shop Steward. H. Lydall, Experimental. T. H. Trounce, Erecting, Shop Steward. E. Simkins, Wood Detail & Wood Mill. J. P. Fitzhenry, Erecting Shop (Nightshift), Shop Steward. M. Sharp, Editor, "Our Job."

AT TABLE, FACING CAMERA :—

W. L. Allardyce, Works Supt. R. Grinter, Supt., Erecting Shops. E. G. Grinham, Gen. Works Mgr. Lee Murray, Gen. Manager. S. R. Rudge, Chief Methods Eng. W. Adams, Asst. Chief Inspector. Mrs. R. Davis, Lady Superviser. R. A. Sell, Electrical, Shop Steward. A. Vickery, Jig and Aero Tools, Shop Steward, Joint Sec. T. W. Sinclair, Jig Section (Nightshift), Shop Steward.

FOREGROUND :—

R. A. Barton, Supt., Sheet Metal Shops. W. H. Grace, Supt., Stores. Miss L. Kerridge, Machine Shop, Shop Steward. J. R. Bowler, Fitting Shop, Shop Steward. G. Howarth, Sheet Metal Shop, Shop Steward. J. Harris, Chargehand, Erecting Shop. F. Harris, Inspection Dept.

(b) Timekeeping, clocking. Absenteeism and the need for authentic statistics thereof. National Service Officer will recognise this committee as suitable to deal with absenteeism. Suggestion of definite machinery, widely understood. Should bad cases be listed on notice boards? Shops agree to back up supervision by serious attitude towards knocking off before time.

(c) Overtime. Authentic statistics needed here also. Consideration as to what hours per week yield best output over long period. Effect of Home Guard, Civil Defence and home duties, transport problems.

(d) Increase of night-shift personnel. Present rota of 1 in 4 (plus the permanent night shift) is inadequate. Meeting agree to the principle of 1 in 3 as already worked by electricians and sheet metal shop. Mr. Grinham says that the ultimate aim, in full production, is 1 in 2. Feeling that period should not be less than 2 months.

At the close of the meeting Mr. Murray said that he thought a lot of good must come out of these talks and, although they were started in time of war, he could not see them ceasing when peace returned.

1,260 HOURS BETWEEN OVERHAULS !

The Ministry have just increased the Gipsy Major I engine's scheduled period of duty between overhauls to the astounding figure of 1,260 hours ! This is a record for an R.A.F. engine and almost certainly a world record for any engine. And no intermediate " top overhauls " (decarbonising, valve grinding, etc.) are necessary, so it means that a Gipsy Major engine in a Tiger Moth trainer now does 1,260 hours of flying (representing something well over 100,000 miles of travel) without having any attention other than checking spark plug and magneto points, cleaning filters and such trifles. What an engine for a country fighting for its life to have for teaching its thousands of young men to fly ! What confidence those young men must acquire !

The Gipsy Major is, of course, a de Havilland engine, one of the line we established in 1927 when Major Frank Halford, designer of every Gipsy, produced the 100 h.p. Gipsy One. Its overhaul period started off at 300 hours. One of the very first Gipsy Ones, installed in a Moth, was sealed during a 600-hours test (51,000 miles of flying) and was so " clean " on stripping that replacement parts only cost £7 2s. 11d. ! That quality of service has been given by tens of thousands of Gipsies the world over ever since.

And now 1,260 hours ! It is indeed a tribute to a great many fine de Havilland workers, especially Major Halford's design staff, our experimental engineers, and our Service Department who have kept a close eye on world operations. And it is a tribute to all the de Havilland men who left Stag Lane and took up jobs in all parts of the world to operate and look after Gipsies. We are a world brotherhood —and we never wanted to see our engines and aircraft and propellers used for fighting, but if it has to be, well, we can give the quality.

ST. GEORGE'S DAY

Our company was chosen to represent the aircraft industry in a two-hours St. George's Day broadcast to the United States, compered by Mr. J. B. Priestley. It was " put over " during night shift, with meal-break music from the canteen by our own band, humour from Mr. Tommy Trinder who came down after finishing his show in London, and some real production-type singing by our Aircraft night shift. Two of our girls were privileged to speak from our own shops to their co-workers throughout America. Chosen for their conscientiousness they were Mrs. C. M. Parker, Engine Machine Shop, and Miss S. M. Fedarb, Propeller Inspection.

Another St. George's Day event was a pageant at the Albert Hall, arranged by *The Daily Express*, in which we were represented by Miss Sheila Iles of our aircraft electrical, fabric and dope department, and Mr. F. H. Keyser, an exemplary worker in our propeller machine shop.

ENGINE AND PROPELLER PEOPLE GUESTS AT FIGHTER STATION

The party of eleven who visited a fighter station from our Engine and Propeller Division on April 18 saw patrols taking off for offensive sweeps against the enemy and later counted them all safely back. Before lunch they watched some neat flying by a de Havilland product and after lunch a Spitfire showed off its fire power. A film of actual air combats was shown to them and they tried their skill on the Link trainer. Ladies in our party said that the W.A.A.F. officers were charming hosts. Those who went were : Mr. G. Morgan, Superintendent ; Mr. L. S. Witchard, Propeller Prodn. Control ; Mr. T. W. Harding, Tool Stores Chargehand ; Mr. P. W. Harris, Staff Inspection ; Mrs. H. Cayless, Miss L. Harding, Mr. W. J. Rumbold, all of the Propeller Machine Shop ; Mr. A. Hutchby, Propeller Assembly Chargehand ; Mr. A. W. Shepherd, Propeller Assembly ; Mr. G. Turnbull, Blade Shop ; Mr. S. Carrington, C.S.U. Shop.

STOP PRESS

ENGINE & PROPELLER PRODUCTION, APRIL

As we close for press, it appears that the April production of propellers and constant-speed units will beat our March figures and we shall achieve a record again for Hydromatics. Engine production has been maintained at around the March level. We have had a record month for aircraft hydraulic units.

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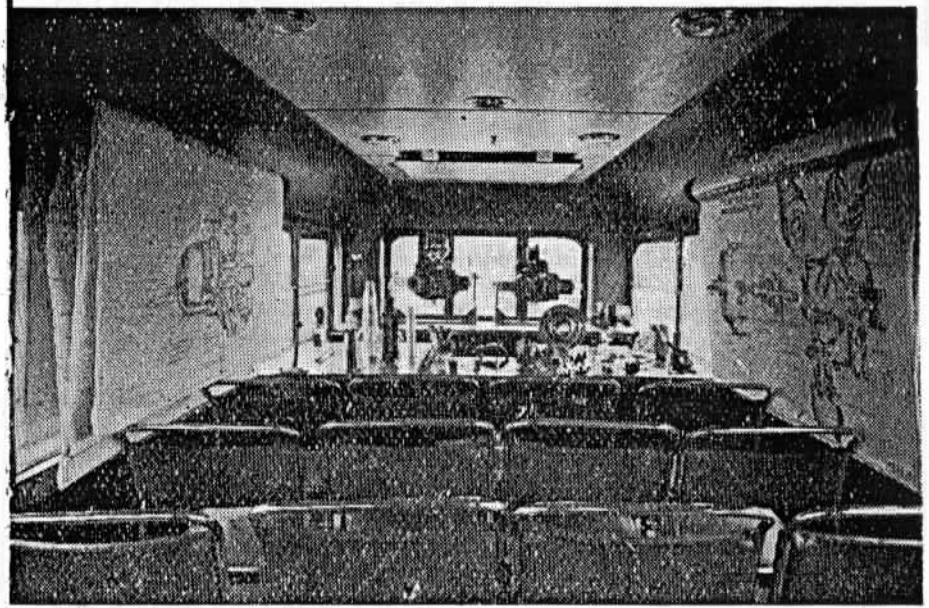
OUR JOB No. 15
Memorandum of information to all de Havilland personnel. 12/5/42

INSTRUCTION IN PROPELLERS

Our second propeller instructional motor coach recently set out on its maiden tour of R.A.F. squadrons and depots. Educational work on D.H. propellers started six years ago soon after we produced our first v.p. prop at Stag Lane in 1935, and the school of instruction in maintenance and use which we have operated continuously since then has passed out more than 5,000 pupils, including civilian engineers from many countries, but latterly, of course, con-



Interior of the lecture vehicle, looking rearward. The cinema screen lets down from the roof.

centrating upon R.A.F. personnel. Early in 1941 it became evident that we must enlarge the scope of the work by sending instructors with equipment to tour aerodromes near and far. Our first coach, equipped with sectioned propellers, constant-speed units and components, numerous large-scale drawings and perspectives, and a talking cinema installation, with comfortable seats for a dozen pupils, set out in May, 1941, and in ten months covered 5,000 miles, visiting 82 stations, schools, factories, etc., all over England, Scotland, Wales and Northern Ireland ; 500 lectures were given in the coach itself and 6,400 men of all ranks attended them. Our second coach naturally incorporates improvements and is Diesel-engined for economy. It seats 14 pupils.

OUTPUT CHARTS AT DISPERSAL DEPOTS

This week reproductions of the big target-for-the-month charts in the aircraft assembly shops are to be seen at all the principal dispersed shops. These copies are altered daily to give the true up-to-date position, and every effort is made to explain widely the cause of any hold-up so that anyone who is able to help eliminate it can do so with no delay. Further suggestions for spreading such information are welcomed.

HELP THE NEWCOMERS

With machine tools for further expansion rolling in now, our propeller factories will be taking on more personnel, mainly trainees and including many women. Our skilled men will be spread rather more thinly, and Mr. H. J. Nixon is relying upon them to do their best in the double task of instructing trainees while not letting the output fall off.

BLOOD WANTED

Someone in our Aircraft Division writes :

" There is something intense about the atmosphere of our First Aid rooms on the day, once monthly, when Dr. Brewer and his staff take possession and convert the place into a blood-drawing clinic. The businesslike routine of the blood-test room, the row of blood donors lying on tables, the quick, quiet, sympathetic manner of white-clad doctors, nurses and hospital orderlies, the slick precision of the whole procedure and the greatness of its purpose give one a sense of realism and of closeness to the pitiful paradox of humanity.

"Dr. Brewer is in charge of the north-eastern sector of the blood transfusion service of the Home Counties. He took about ¾ pint of blood from each of 84 men and women in our main aircraft works on his latest visit—129 in a day on a previous occasion. As I lay there watching the flow from my own vein he told me some interesting facts. The average person has about a pint of blood for every 14 lb. of all-up weight—a 12-stone man has about 1½ gallons of blood. He can give ¾ pint once a month and not notice it. But at present every three months or so is the general rule. Dr. Brewer's sector is taking blood from about 500 to 550 people a week at the present time. During the blitz of 1940–41 they did that number in 48 hours. Present takings are mainly required for export to the Forces in the Middle East, for which purpose the blood is dried by an interesting process. It is cooled to about minus 20°F., say 50° of frost, and evaporated at that low temperature by blowing nitrogen gas over its surface. The resultant powder can be kept indefinitely without refrigeration and only needs the addition of distilled water. The freezing process kills any living germs in the blood, but, he explained, the red corpuscles and the fluid in blood—the necessary ingredients for saving life—are not themselves living substances although they are organic, and their value is not destroyed by freezing.

" Of the thousands of us in our Aircraft Division about 450 have volunteered as blood donors—about half that number in our Engine and Propeller Division. Perhaps the appeal in *Our Job* was not seen by everybody, but anyway more volunteers are badly needed. In event of an invasion attempt by us or by the Germans, or a revival of bombing

here, enormous stocks would be used up in no time. We at de Havillands might need Dr. Brewer to reverse the process some day. He would send blood to our works instantly if we had occasion to telephone for it. There is no pain or inconvenience in the giving process and one wonders how any healthy individual could hold back from volunteering."

HIGH STANDARD IN ENGINE INSPECTION

Our Job has been rightly criticised for ignoring, in issue No. 14, the valuable contribution which Inspection Department has made over the years towards the steady expansion of overhaul periods of our Gipsy engines, and notably the recent advance of the Gipsy Major I to 1,260 hours.

The omission is inexcusable and is regretted. Recognising that the Service Department deals with all users' reports of troubles, we should have added that the Inspection Department prevents troubles at the source. Indeed the better Inspection do their work the less the world hears of them. It is to their special credit that in the vicissitudes of wartime production they have not merely maintained the standard but convinced the authorities of the wisdom of advancing the Major overhaul period to the world-record figure of 1,260 hours.

GUARDING THE GATES

Our Security Officer, Mr. G. V. Street, calls attention to the fact that too many works passes are being lost by D.H. personnel. It is, of course, most important to treat passes with special care as the security of our own and, in fact, all armament factories depends to a large extent upon their proper control.

The loss of a works pass, like the loss of a National Registration Identity Card or a passport or a birth certificate, is a serious matter and should be reported immediately through the Works Police so that all precautions can be taken against its misuse in case it should fall into bad hands.

Right : Mr. W. L. Allardyce, Works Superintendent, Aircraft Division. Joined the Scots Guards in 1914 from his apprenticeship, was wounded and discharged 1918 and did 3 years in the fitting shop of Aircraft Manufacturing Co., Hendon, then 3 years with Handley Page. Ltd., and joined us in 1924. He rose steadily through the stages of marker-off, charge hand, assistant foreman, foreman and assistant production engineer to his appointment, in September, 1940, as Works Superintendent. A bit of an athlete in his day, he twice won the Lady Bai ey Cup for highest points in our works sports.

Left : Mr. Ken Brown, Works Superintendent, Aircraft Repair Depot. He came to this company in 1922 after training in marine and general engineering, and gained his aircraft experience in our Service Department, where the high ideals of the ground engineer are a tradition. In 1925, when flying clubs sprang up in Britain, he became ground engineer to the Newcastle-on-Tyne Aero Club (D.H. Moths), but returned to de Havilland Service Department in 1929, taking on expanding duties until in August, 1940, he was promoted to his present responsible position.

Right : Dr. D. R. Thompson, medical officer of the company and responsible for health matters in all our scores of factories. Has built up a comprehensive first-aid organisation since he came to us in the early days of the blitz and is continually introducing improved health measures and services. He keeps an eye on those who are overworking, but leadswingers do not find him helpful.

DO YOU KNOW THEM?

Some D.H. Personalities.

OUR BROADCAST TO AMERICA

The B.B.C. thanked us for our broadcast to America on St. George's Day and wish to send ten guineas to cover the cost of the facilities provided. A meeting of those who participated was held on May 4 and it was unanimously agreed that this should go to benefit D.H. employees serving with the Forces. Accordingly five guineas will be sent to Our Boys' Fund at the E. and P. Divn. and five guineas to the Troops' Gift Fund at the Aircraft Divn.

MORE SAVINGS LEAGUE RESULTS

Results of the second month's competition, to April 15 :

Aircraft Division and Aircraft Repair Depot
(Nos. 2 and 4 Savings Groups)

A. *Teams having the highest percentage of members :*

1st	Dispersed Sheet Metal Shop ... (unchanged)	100%
2nd	Service Department	85.5%
3rd	Flying School	53.0%

B. *Teams showing biggest increases in membership :*

1st	Boreham Wood, increase of ...	46.%
2nd	Jigs and Experimental, increase of	2.7%
3rd	Engineering, increase of... ...	2.4%

Engine and Propeller Division
(No. 3 Savings Group)

A. *Teams having the highest percentage of members :*

1st	Planning	82.79%
2nd	Propeller Inspection	76.16%
3rd	Engine Inspection	74.87%

B. *Teams showing biggest increases in membership :*

1st	Production, Control, increase of	17.89%
2nd	Propeller Inspection, increase of	15.89%
3rd	Planning, increase of	14.31%

INTER-FACTORY VISITS

Mr. W. E. Dupré reports that the arrangements for visits between our factories on off-duty days, for the better understanding of each other's problems and of our work generally, are being cramped somewhat by transport difficulties, but he is doing his best to utilise existing private and public services. More than 1,000 of our Engine and Propeller Division people wish to see the aircraft assembly and test. Mr. S. Bence, engine assembly superintendent, arranged a visit for 27 of his department on May 2, and a dozen or so from other shops went by motorbus and joined the party. Mrs. Davis, lady superviser, and Mr. Middleton from the fitting shop, explained the main features of the work, and some fine test flying was witnessed afterwards.

Our main Aircraft Repair Depot sent a party of 25 on the same day for a similar tour, and included a football team which played an R.A.F. team on the Aircraft Division sports ground and beat them 3 : 1.

SUPERANNUATION FUND CARDS

Members of the Superannuation Fund have been asked to hand in their yellow cards so that their credits for 1941 can be entered. Very often Mr. Taylor, the Secretary of the Fund, is asked why they are kept so long. The answer is that in preparing the accounts for the year nearly 13,000 calculations are made, there are more than 6,000 columns of figures to be totalled and in all some 115,000 entries have to be made—and all this work must be checked and then audited. It is exact work, like any other production job, and those doing it know what to expect from members if they make an error of one penny in the many thousands of pounds they handle.

GOOD POSTERS ONLY

To prevent wasteful and ineffective use of posters, properly designed poster panels are now being put up in all our depots. Neat, well lighted, and under proper control, they will provide a focal centre for the better posters that are made available from various sources ; and, afterwards, the backs of these posters can be used for publicising special

messages of our own, ideas for which are frequently coming in. Each panel has a blackboard for urgent notices. It must be understood that use of the panel is controlled by the superintendent of each depot.

TEACHING THE R.A.F.

Those in our main and dispersed aircraft shops who have co-operated in explaining the construction of our product to the Service Department's weekly courses of R.A.F. maintenance personnel will be glad to know that their work is having good results. Mr. Brant and his chief instructor, Mr. Richardson, particularly appreciate the ready assistance of those in the wing, fuselage and aileron shops as well as those on the hydraulic jacks and other special components. Several hundreds of R.A.F. engineers of various ranks have been through the course, and the benefit is being felt in the field. Each class is warned, when it starts on Monday morning, that there will be an exam. on the Friday !

TALENT FROM WITHIN

2,800 tickets were sold for the April 15–17 showings of " April Foolishness " by our Amateur Dramatic Society (Engines and Propellers) and about £150 will be sent to the R.A.F. Benevolent Fund. The producer, Mr. Louis Bradfield (Wages Office), is to be congratulated and so is the " material " he moulded ; Mr. Jenkins (Chief Engine Inspector) not only was musical director but wrote some attractive music. The Aircraft Concert Party gave a good show on April 21 in aid of the St. John's Ambulance. Mr. Rippin, A.R.P. officer, presented certificates to those who had passed first-aid exams., and a clock to Mr. Lewis in appreciation of his successful A.R.P. lecturing.

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OUR JOB No. 16
Memorandum of information to all de Havilland personnel. 29/5/42

CONCERNING MILITARY SERVICE

It is evident that some of the younger technicians in the company are still not quite settled in their minds on the question of whether they can serve their country best in uniform or in the industry. Obviously each case needs considering on its merits but there should not be many examples which come so near to the borderline as to cause a gnawing procrastination.

It is a question of suitability and training—and especially training, for that is the rarer element. The aircraft industry is one of the most important of the war industries and has had to expand so phenomenally that there is a shortage of all trained technicians. Training takes time and the bringing in of " raw material " for technical education is difficult at the present stage. This fact puts all the more value upon those who have two or three years of solid training behind them, and they really are most useful in the jobs they can fill. Trained aircraft technicians have so much of the country's academic capital invested in them that it would be simply helping the enemy to let them go into the Services.

It is a war of specialists, and our shortage of aeronautical specialists is one of the bottle-necks. It is also a war of realism, and people must if necessary sacrifice a right and natural inclination if they possess knowledge which is urgently needed in such a vital industry as our own. Fighting and bombing aeroplanes are what we want more than most things. They must be excellent in quality, fabulous in quantity; and trained technicians for the creation of them cannot be spared even for fighting.

As to the borderline cases, a man who feels in doubt about the value of his qualifications can rely upon conscientious people who are in possession of the facts and may be trusted for a wise ruling. Earlier in the war, before

the country's man-power was properly registered and analysed, there were unbalanced supplies—men of one class being held back from military service as indispensable in a certain district, when there was actually an excess of them elsewhere—but there are few such instances now. And certainly no doubts exist in aeronautical engineering, for the shortage of designers, senior draughtsmen, stress and aerodynamic graduates, production engineers and other specialists is all too evident. This matter really has been studied carefully in two and a half years of war and the procedure which the authorities have set up for judging individual cases does work well. Thus there should not be much room left for misgivings, and those who have been kept back can reckon upon it that they are in the place where they can help the war effort most. The keenest sympathy is felt for young men who are having to put their deep and urgent desire for direct personal action into the background. It is a continual strain upon them, but unfortunately they must be asked to stick it out, for the sake of the R.A.F.

WAR POWER THROWN AWAY

It is a pity when *Our Job* has to state the obvious, but the number of complaints about wasting electricity make a reminder necessary that electricity is concentrated power made from coal dug by the effort of hard-working miners, and we cannot afford to waste a single watt of it. Please do everything possible to augment the existing rules to see that lights are not left on when not wanted, especially at the termination of a shift. Please do not leave coolant pumps running when the job is finished. Nothing looks more forlorn than a lamp burning in the sunshine, nothing pants so effetely as a compressor pumping to waste.

The Engine and Propeller Division have actually asked for power-saving slogans in the suggestion boxes and offer a prize of 5s. for any used. This idea is a good one and has been adopted by our other divisions—so send your slogans in.

DO YOU KNOW THEM?

More D.H. Personalities.

Left : Mr. A. J. Brant, A.F.R.Ae.S., Service Manager, Aircraft and Engine Divisions, has been with the company 'since before it was formed.' He joined the Aeronautical Syndicate at Hendon in 1911 as an indentured apprentice (probably the first in the "industry"), and met Capt. de Havilland at Farnborough in 1913 in connection with the acceptance trials of Farman aeroplanes. Later, at the Airco works at Hendon he was superintendent of the Experimental Department under Mr. Hearle. When our company was formed in 1920 he became works manager, until 1927 when the development of our commercial side demanded his whole-time concentration on building up a world-wide maintenance organisation.

Right : Mr. G. W. Lineker, Chief Inspector, Propeller Division. Joined the company in 1934, after a wide practical experience with several leading manufacturers, including Rolls-Royce and Napier. Has been responsible for the inspection of propellers and constant-speed units from the first produced by our company. (Stag Lane delivered their first V.P. Propeller on July 30, 1935—they had 18 men and 12 machines in the department then)

Left : Mr. T. C. Jenkins, Chief Inspector, Engine Division. Served his engineering apprenticeship with the Ebbw-Vale Steel Company and got his technical training at Cardiff College. After a varied experience he went to Ford Motors in 1930 as a draughtsman, later specialising in inspection equipment and machine tools. Became Chief Inspector of our Propeller (Northern) Division in 1937 and transferred to the Engine Division in 1939 as Chief Inspector. A keen musician, he conducts and composes for our Dramatic Society's performances.

MORE ABOUT INCOME TAX

Mr. L. S. Hind of our Aircraft Division Income Tax Office writes : The new Budget has hit many very hard, especially the smokers. But for once the alterations in Income Tax Regulations have been made so as to leave *more* money in our pockets instead of to take more out of it.

The minimum wage which must be received after deduction of tax will be £2, £3, £4, or £5, according to whether one is single, married without children, or married with one or two children. This will come into operation as from August 1, 1942. The main concession, however, which the new Budget has given is the additional personal allowance for a married woman who is working. For many of these women previous wages have been heavily taxed. It worked out that all wages over £50 a year were taxed, but with the new allowance of £80, instead of £45, no married woman will pay tax until she has earned £90.

A man whose income, after reliefs, is taxable at 6s. 6d. in the £, will find his wife pays very little, but proportionately, if the man's income (again after reliefs) is taxable at 10s. in the £ his wife will pay more, as is shown below :—

Wife's annual income	Tax payable yearly if at 6s. 6d.	Tax payable yearly if at 10s.
£	£ s. d.	£ s. d.
100	3 15 0 (*1s. 5d.*)	5 0 0 (*1s. 11d.*)
120	9 2 0 (*3s. 6d.*)	14 0 0 (*5s. 5d.*)
150	17 17 6 (*6s. 11d.*)	27 10 0 (*10s. 7d.*)
200	32 10 0 (*12s. 6d.*)	50 0 0 (*19s. 3d.*)
250	47 2 6 (*18s. 2d.*)	72 10 0 (*28s. 8d.*)

(Weekly equivalents are given in brackets).

There is more news about " post-war credits "—the tax which is to be refunded after the war. Every year for which we are entitled to a post-war credit, a certificate recording the amount will be issued to each of us. The certificate will probably not be issued for some months after the financial deduction for the year has been made, as there are nearly 12,000,000 taxpayers each entitled to receive one, and the clerical work involved will take a considerable time.

For the year 1941–2, i.e., the tax which manual wage earners finish paying January 31, 1943 (non-manual employees, October 31, 1942), post-war credits are roughly :—

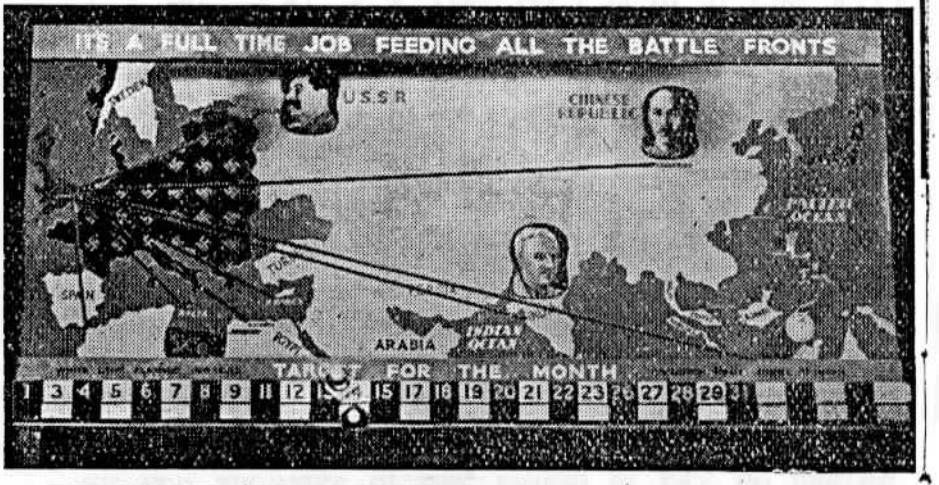
Wage per week	POST-WAR CREDIT 1941-42			
	Single	Married		
		No children	One child	Two children
£	£ s. d.	£ s. d.	£ s. d.	£ s. d.
4	11 0 0	14 5 0	—	—
6	19 10 0	16 10 0	16 10 0	13 5 0
8	23 17 0	28 17 0	22 3 0	18 15 0

Our general article explaining income tax appeared in *Our Job* No. 10 of 5/3/42.

BLADES BY THE THOUSAND

Mr. Hearle was pleased with the progress he witnessed at the new propeller blade shop, now getting into the full stride of production with all the advantages of a superior layout, and the note which he wrote following his visit must have gratified all concerned. A photograph of the production target for the month which has been installed in this shop is shown on the next page. The theme is fairly obvious—the widespread use of D.H. propellers on every war front. The horizontal scale at the foot is calibrated in days. The white light above it is moved along daily to show the planned output and the coloured light below indicates

actual output ; it shows red when behind programme and green when ahead. It was green when we took our picture on May 14. A party from this shop has recently been able to visit one of our aircraft assembly and test depots and others are hoping to have a similar chance.



WE SERVE ALL FRONTS. Production output indicator in the new propeller blade shop shows at a glance how we are doing.

THE DE HAVILLAND LIBRARY

The new library at head office was opened on Thursday, May 21, and a reference room is being prepared. The creation of this library has long been a cherished desire of the directors and particularly of Mr. Hearle, and it is hoped that it will give pleasure to many of our people. Four small collections of books within our organisation formed the nucleus for this venture. These were the libraries of the de Havilland Aeronautical Technical School, the Aerodynamics Department, our local branch of the Royal Aeronautical Society and our Aircraft Division Boys' Club. The Hertfordshire County Council, keenly interested, have augmented the collection with a loan of a thousand or more books covering many subjects, and these will be regularly exchanged for further batches.

Thus we already possess quite a representative library covering the main technical fields of our own industry, and fiction, history, biography and other subjects. This becomes available forthwith to all de Havilland employees. It has taken form at our main factory, but as the idea develops no doubt some arrangements will suggest themselves for bringing our other depots within the benefit of the scheme. The library is in a building outside the main factory gates. The hours have to be settled from experience of actual needs but for the present it will be found that the librarian, Miss J. E. Day, is available most of the day.

ANOTHER JOINT PRODUCTION COMMITTEE

First meeting of the Joint Production Consultative and Advisory Committee formed at one of our main component depots (now going onto propeller constant-speed units) took place on May 15. Members comprised Messrs. H. J. Nixon, H. Wilson and R. A. Morrison, Mr. A. E. White (assembly shop), Mr. S. Philpot (machine shop), Mr. O. Boobyer (inspection) and Mr. F. Taylor (plant department). Subjects discussed included the keying in of programmes for different components during the next few months, avoidance of waiting time, educational sub-assembly and assembly, floor inspection, inspection of jigs, tools and cutting tools on return to store, control of machine tool equipment when out of use, capstan section supervision, good efforts made by capstan trainees, the progress system, drawing-store personnel, etc. Many ideas came forward and are being investigated. The committee agreed that a progress chart would be a good thing and that everyone should be encouraged to take an active interest in it and maintain the required hours on all components.

Preparation of a chart has been started forthwith. Future meetings will be held on the last Friday in each month.

THE LOGIC OF SAVING

More than 30 of the team captains of our Savings League gathered together on Tuesday, May 19, at head office, to hear a short, vigorous talk on the subject of national savings by Mr. W. A. Northan, O.B.E., a director of Vauxhall Motors, Ltd., and Chairman of the Luton Savings Campaign Committee. Mr. Northan stressed the importance of savings at the present time for two main reasons : (1) Creating a "nest egg" for after the war. (2) Lending to the Government so that our democratic institution may survive. He commented on the fine progress already made by the de Havilland League, which has increased its membership by 85 per cent. in the three months since its inauguration.

We are reminded of an enquiry which was made within our company a couple of years ago, into the common logic of this matter, and the seven sound reasons for saving which emerged therefrom. They were as follows :

1. All unnecessary spending wastes the labour of somebody who ought to be engaged on war work.
2. Everything that we waste, whether money, material or labour, is so much dead loss in our war effort.
3. Anyone who could be saving money and is not doing so is helping the enemy.
4. Saving a "nest egg" to spend and enjoy after victory will give a feeling of security at a time when industry is being readjusted to peace-time needs.
5. The spending of our savings after the war will help to start the ball of industry rolling again and create jobs for those now in the Services or on munitions. It will help to prevent a slump.
6. While we are earning steady wages we should be very foolish if we did not make steady savings.
7. National Savings Certificates yield good interest, which is not subject to income tax, and the money can be drawn out at any time with interest up to date.

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AIRCRAFT DIVISION JOINT PRODUCTION COMMITTEE

The second meeting of the enlarged committee took place on May 26. Mr. Grinham introduced three members who had been co-opted to the committee in connection with dispersed machine shop problems, namely, Mr. Gillan, machine shop foreman, and Messrs. Flynn and Guy, representing the workpeople.

Points Arising from Minutes of the Previous Meeting

1. Stores problems sub-committee (Messrs. Grace, Harris, Farrer). Two meetings had been held and Mr. Grace explained progress. It was agreed the sub-committee had cleared several problems, but that it should be kept available for any future matters.

2. More efficient use of working hours. Mr. Allardyce read minutes of meeting of sub-committee on tea breaks, at which a scheme had been formulated. This the committee accepted. Sub-committee now to draw up scheme for night-shift tea breaks. Sub-committee to meet after kiosks have been erected in shops to discuss how to run them.

Mr. Grinham said that the average hours worked in the factory were still very bad and gave some figures in substantiation. Women were the worst offenders, quite a lot taking their half day off for shopping but not making up the time. Mrs. Davis pointed out problem of young children at home. A crêche is being opened in July to assist in this respect. Mrs. Davis, Miss Kerridge and Mr. Allardyce to form a sub-committee on women's problems, billeting, housing, etc.

3. Constitution of committee. Mr. Grinham agreed to

accept 13 representatives of the bench ; any who drop out not to be replaced until the number has been reduced to 10.

Workpeople's Proposals

1. Dispersed machine shop problems.

(a) Shortage of work and (b) Production bottle-neck. Capstan and centre-lathe capacity available. Mr. Rudge said capstans will be filled by bringing in work at present sub-contracted and explained how the shop-loading scheme on which he is working will solve the problem. Mr. Grinham said shortage of work on centre lathes must be expected ; machines not required are to be transferred elsewhere. Pressure on drilling machines will be relieved by shop-loading scheme.

(c) Drawings. Mr. Grinham said that future drawings will be varnished and filed in a central location in the fitting, erecting and sheet metal shops. Mr. Rudge mentioned the difficulty of keeping drawings up to date on account of numerous mods.

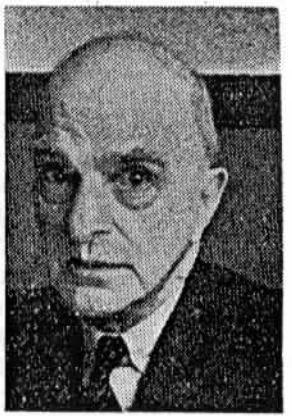
(d) Gauge shortages. Mr. Flynn's request for more gauges. Mr. Rudge explained that dispersed machine shop will be receiving three complete sets of full-range Wickman gauges.

2. Method of dealing with problems between monthly meetings. Subject raised by Mr. Sell. Mr. Grinham said that a special meeting will be called for any problem arising which affects a large proportion of the factory. Small queries to be solved through Works Query Notes and Engineering Query Notes. Mr. Allardyce to remind supervision staff of their responsibility concerning these.

Proposals Raised by Mr. Grinham

1. Anti-waste. Mr. Grinham outlined an anti-waste scheme already in operation in other factories. He suggested that each member of the committee became an

D.H. People you should recognise.



Right. Mr. H. Taylor, Manager of our Employment Department. Personal problems have constituted the study of his long career. Prior to entering the aircraft industry he was with the Thames Iron Works. In 1913 he joined the Aircraft Manufacturing Co. at Merton, afterwards moving to Hendon where he held the post of Employment and Wages Dept. Manager. He shares with most of our directors and a handful of others (whose photographs appeared in " Our Job " No. 5) the distinction of having been with this company since its formation in 1920 following the closing of the Airco concern.

Left. Mr. E. A. Walter, Propeller Service Works Superintendent, started with us as a junior engine test inspector in 1927, got his ground engineers' licences and transferred to airframe inspection. In 1932 he went to Rio de Janeiro to erect Tiger Moths for the Brazilian Navy. Returned to Stag Lane to work on the first Dragon. In 1934 he was " sub-contracted " to the Persian Air Force for 3 years. Returning in 1937 he took up c.p. propellers, which carried him to Holland, Yugoslavia and elsewhere. Home again he became an instructor in our Propeller School, then Service Dept. Foreman, and, in 1940, Works Superintendent.

Right. Mr. H. Whitlock, a personality in the Engine Division, where he is known to everyone as " Uncle," is a craftsman skilled at pipe work. He joined us in 1930 as a coppersmith and made pipe runs for the early Gipsy engines. Sixty-nine years of age, he claims that in 8 years he did not lose 15 minutes work.

anti-waste steward. Agreed. One steward to be elected for weekly meeting with Mr. Grinham.

2. Care of jigs and tools in production shops. Mr. Rudge complained of bad treatment of jigs and tools. Committee members requested to watch out for this. Mr. Rudge to look into the question of having a methods man on night shift.

Further Business

1. Mr. Grinham said that as the committee had been recognised by the National Service Officer for dealing with absenteeism and lateness, he suggested a sub-committee comprising Mr. Allardyce, Mrs. Davis and Dr. Thompson, with three works representatives, to consider cases prior to bringing them before the committee. Mr. Sell asked for time to discuss the question.

2. Answering queries raised by Mr. Lawrence and Mr. Sinclair, Mr. Grinham said that overhead gear will be erected in the receiving bay when despatch and receiving departments have been altered, also two overhead cranes inside foundry when completed.

3. Miss Kerridge mentioned waiting time in fitting and machine shops.

4. Mr. Murrell complained of a shortage of air drills. Mr. Barton to check up. Operators to be urged to hand in drills when not in use.

5. Mr. Lydall and Mr. Sell suggested that Mr. Harry Pollitt be asked to address the factory. Mr. Grinham to consider this.

CARE OF JIGS AND TOOLS

At the recent meeting of the joint production committee of one of the E. and P. Divn. dispersed units the suggestion was made that all jigs and tools and cutting tools should be inspected as they are returned to stores, so as to ensure their serviceability for the next operation. It was explained that in peace time and in the early days of the war this was the routine, but the shortage of good tool inspectors and tool makers in all the engineering industries, not least our own, and the necessity of inspecting a big volume of new tools, made it difficult to allocate personnel for this tool-store duty.

This is just typical of the troubles of war-time production. It must be left to all of us to give a little extra care to the tools we use, taking upon ourselves a responsibility which, in the easy days of peace, could be left to specialists. On the one hand every effort should be made to return tools to store (a) promptly after use and (b) in good condition. On the other hand anyone finding a defect in a jig or tool or cutting tool should please notify his charge hand or foreman without delay, and the information should go through to the jig and tool store, and on to the Planning Department. The same applies to any gauges found to be inaccurate. Obviously the principle applies to all our depots. The job depends upon the tool. Indeed, give us the tools and we will finish the job.

CONTROL OF MACHINE TOOL EQUIPMENT

Another point raised at the same meeting was the need for a better control of machine tool equipment. It was agreed that an area in the shop concerned should be allocated and equipped with bins for the storing of machine tool equipment and that a man should be made responsible for this equipment. This is being done. It is hoped thus to prevent such equipment from being put aside in the shop after an operation is completed, for often damage results from this practice. Here, again, there are instances of tools being broken during an operation and not being promptly repaired because the breakage has not been reported. This obligation rests with the operator and setter, who should notify the charge hand or foreman and through them the Planning Department. An important point is that any

deficiencies in new equipment should be reported similarly, and without delay. Disputes are always liable to arise when deficiencies are not reported on the spot.

AIRCRAFT OUTPUT

Aircraft production was again a little below the target for May, due mainly to small modifications.

Aircraft Division methods engineers and jig and tool drawing office have taken up their new quarters from June 1. The proximity to production shops will help considerably.

ANOTHER "HIGH" FOR HYDROMATICS

May constituted another record month for Hydromatic deliveries, also establishing a new high level for blade output from the new blade shop, which is now going well. These records were achieved in spite of two urgent programme adjustments necessitated by military considerations which had held back the output for the first three weeks of the month. In constant-speed units we were up to schedule, likewise in other work in the dispersed c.s.u. shop. On Gipsy Majors the May output was down, due to a little trouble with oil-consumption rate which we hope will quickly be solved, enabling us to catch up again in June.

THANKS TO THE S.A.G.

Now that the Second Aircraft Group is able to see the test flying of its own aeroplanes, it is interesting to look back over the great amount of work accomplished for the parent company,

This shadow manufacturing unit was created by The de Havilland Company at the request of the M.A.P. and was "budded off" from our main organisation with a small nucleus of experienced personnel and had to procure and build a number of factories capable of full-scale production. This was done, and manufacture was started in the individual depots as they became available.

The parent company was thus enabled to turn to the S.A.G. for contributory manufacture of many urgently needed components, and a big flow of production was built up which has been more valuable than can ever have become apparent to those engaged in the unostentatious routine of getting it under way. Deliveries from one of their factories include a great number of completed aircraft of an earlier type and for some time the parent company has also received from the S.A.G. large batches of major components such as completed wings and fuselages; many of which are now in service, whilst others take their place in the neat lines of machines now in course of erection. In fact, the figures, could we but publish them, are formidable. Furthermore, the S.A.G. planned and constructed ready-made premises for another manufacturing project altogether.

Helpful though such work has been the results naturally cannot be evident as they would be in the case of a shadow organisation planned to go straight on to a clear-cut programme with an aircraft already in fully established production elsewhere.

A very large proportion of S.A.G. personnel were trainees. In fact, an engineer from our Australian company who was looking over the depots recently got quite an eye-opener to the pioneering aspect of dispersal as practised here. When walking through a shop where several hundred men and women were working he asked how many of them were in the aircraft industry before the war. "Two," the superintendent replied, "my chief assistant and myself."

D.H. PEOPLE IN THE SERVICES

We may not state how many hundreds of men and women from our several Divisions are serving with the Navy, Army and Air Force, but early in the war arrangements were made for sending them parcels, and, when supplies became difficult, money. Very good results were obtained in our Engine and Propeller Division under a

committee of 14 with Mr. Wilson as chairman. In their first month they collected £161 18s. 4d. Their latest collection (May) was no less than £572 and the total to end of May is £16,764 They now send 15s. every four weeks to every single man—£2 4s. if he has a widowed mother. Married men get £2 4s. plus 4s. for each child. Women, single or married, get 15s. every four weeks.

In our Aircraft Division 55 collecting boxes have been going the rounds weekly, but hitherto no organised collection was made, so that the weekly revenue was in the region of only £12. Total income was disposed 50 per cent. to the Parcels Fund (nearly 3,000 parcels have been sent), 25 per cent. to the Troops Comfort Fund which caters for those on leave and for some who are prisoners, as well as contributing to national charities, and 25 per cent. to the Benevolent Fund which makes grants (£25 hitherto) to dependents of people killed on active service. Within the Aircraft Division there are smaller independent funds having similar objects, for example, in the Fitting Shop, the Coppersmiths and the Machine Shop. An idea has now been worked out for co-ordinating these efforts and organising a collection on the lines found so successful by the E. and P. Divn. This has quickly brought good results, the May collection amounting to £329 8s. 4d. and the total to the end of May £3,925 3s. 11d.

GOOD JOB ACKNOWLEDGED

All D.H. personnel will be pleased to hear that Flight Lieut. Victor Ricketts and his navigator, Sergeant Boris Lukhmanoff, have been awarded the D.F.C. and D.F.M. respectively for their fine reconnaissance in bad weather on March 4, when they photographed the Renault works near Paris from 400–600 ft. about 12 hours after the night raid of Bomber Command.

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JOINT PRODUCTION COMMITTEE REPORTS

Space in this memorandum is greatly restricted and it is unlikely that we shall be able to continue for long the publication of comprehensive reports of joint production committee meetings in our many depots. The intention, however, is to publish them so long as practicable, even in abbreviated form, because it must be beneficial for all personnel to compare the problems that are arising in different depots and the ways of solving them for the improvement of productive efficiency.

PROPELLER REPAIRS COMMITTEE

The first meeting of the joint production consultative and advisory committee in our main propeller servicing department was held on May 26. Present: Messrs. Burgess, Walter, Wilson, Coleshill, Woods, Bell, Goode, Spurling, Boddy, Davies. It was established that the general aim shall be to do the best with the equipment available rather than talk about what could be done if we had other equipment. The first subject concerned the laying out of propellers in full detail prior to first assembly. It was agreed that the appointment of a layout progress man for this duty would be beneficial. He would check parts against Inspection Report or D.I.S., and stamp mating members on barrel bolts, nuts, bosses, etc. The layout of propellers in storage racks for subsequent building, as now effected by the shop supervision, is to continue, but the progress layout man should act as a further check when the set of parts is passed to the shop for assembly. The second subject was the control of work issued to first-assembly section so as not to load beyond their capacity other sections through which the work must pass. In particular the dome section has not worked

economically on some occasions because of lack of space for storing work in progress. Additional racks are to be provided.

IN THE SKY AND IN THE FACTORY

Following the announcement in No. 17 of this memorandum concerning Flight Lieut. Ricketts and Sgt. Lukhmanoff, it is a great satisfaction to announce two further awards for war work in two different spheres. Flight Lieut. J. R. H. Merifield receives the D.F.C. for work the details of which we are not able to discuss. Nearer home Mr. Jock Allardyce, Works Superintendent of our Aircraft Divn., has been awarded the British Empire Medal in the recent Birthday Honours in recognition of his services to production.

INTER-FACTORY VISITS

About 100 people from our E. and P. Divn. Engineering Department, an organised party who had undertaken to make their own travelling arrangements, visited one of our principal aircraft assembly lines on June 13, as well as 30 members from the engine shops and 20 from engine assembly. So long as transport facilities allow we are trying to continue these visits.

NEW ECONOMY IN CUTTING TOOLS

In our Engine and Propeller Division, Mr. H. J. Nixon finds it practicable now to start an important salvage department to conserve valuable high-grade metals. Tools will be made from scrap which has hitherto been sold at scrap prices. Tips will be machined and butt-welded onto carbon steel shanks, a process which we ourselves can do and for which we are going to install a butt-welding machine. A worn one-inch reamer can be turned down to 15/16ths, and slab mill cutters will be re-gashed into smaller diameters. Broken cutters also can be used for smaller sizes. Foreman of the new department will be Mr. H. Wainwright, hitherto tool-trouble specialist in the engine shop. Mr. Nixon feels that the department will quickly grow and says he can picture the day when certain scrap from all D.H. depots may be sent here for redemption. Remember, tungsten is a key element in cutting tools and it has to be imported. The cutting-tool makers are hard pressed by all industries and the Government is very keen to see these economies in the factories.

PASSENGER TRANSPORT: AIRCRAFT DIVN.

Passenger transport to and from our principal Aircraft Division depots improves. Following the announcement in *Our Job* No. 3 last December that Mr. Guiver had been appointed Travel Trouble Tracer, he was inundated with queries and complaints. Close study was given to all problems and by co-operation between the management, the employment and transport departments, the shop stewards, London Transport, L.N.E. and L.M.S. railway officials, several of them have been solved. One major difficulty was the change-over from private-hire bus services to augmented public services, which was effected overnight on June 1 with little inconvenience. A halt on the local railway, near the main works, is scheduled to be in operation on July 27, with trains to suit 8 a.m. and 9 a.m. starting times and 5.30 p.m. and 7.30 p.m. finishing times.

Employees whose cars must not be used for home-to-factory travel after that date may consider licensing them for July only.

VALUABLES

Mr. Parramore, who is in charge of D.H. police, all depots, asks for everybody's co-operation in taking care of valuables. Please do not leave money or other valuables in clothing left in cloakrooms or in other parts of the buildings. Even in these days when the very existence of our country depends upon our own co-operation, there are still some people so low in spirit that they will take things which do not belong to them.

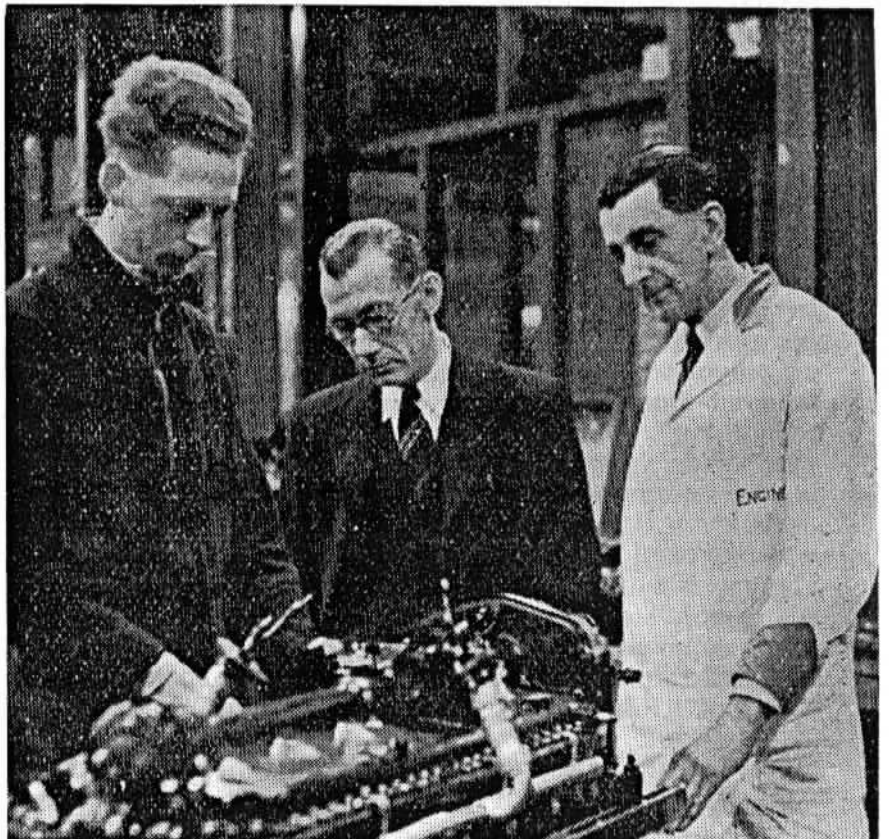
Mr. J. W. Dale (Below), Assistant Secretary of our company. Received his 20-year testimony last year, having joined the company in September, 1921. Looked after the office side of our aeroplane hire service and civil flying school from 1922 and our Reserve flying school (now known as No. 1 E.F.T.S.) when it opened in April, 1923. He has assisted Mr. Nixon since that year, taking on more and more responsibilities in financial and secretarial matters with the steady expansion of the company, and he was promoted to Assistant Secretary in November, 1941.

Mr. J. McNeil (Above), engineer in charge of communications fleet at our main Aircraft Divn base. Apprenticed in motor and general engineering in Scotland he went to Canada in 1929 and joined the de Havilland factory at Toronto in the servicing and engine overhaul department. He later spent more years in general engineering, and in 1936 returned to the Service Dept. of the English D.H. company. In appreciation of his careful work and cheerful manner he was recently given a silver tankard by the members of the Women Ferry Pilots' Pool of the Air Transport Auxiliary, whose heterogenous collection of communications aeroplanes have been serviced under his control for 2½ years. The tankard was inscribed: "A million miles in safety."

Miss J. McKay (Left), whose job is to check setting-plug screw gauges in our Metrology Department, where she was trained for this work, which has never before been done in this factory by a woman. Miss M. McKay was previously employed in a jeweller's shop where close attention to detail gave her good training for her present occupation.

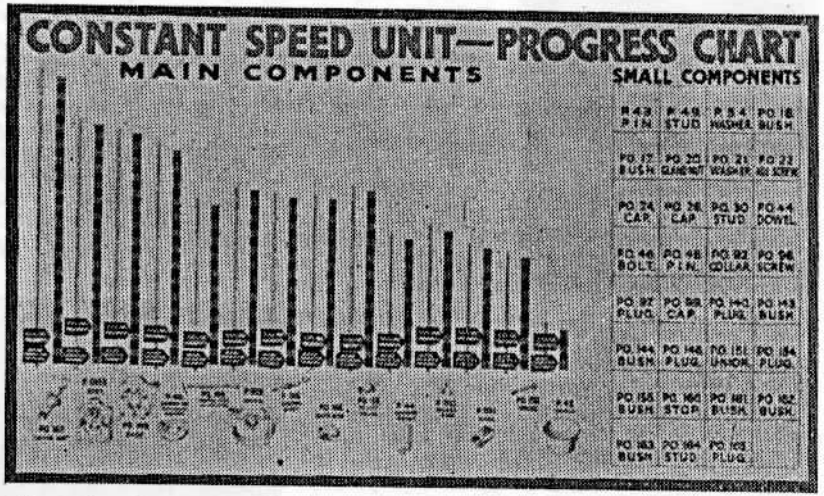
D.H. PERSONALITIES WHOM YOU SHOULD RECOGNISE.

Central figure in this group is Mr. S. Bence, engine assembly superintendent. He joined the company in August, 1928, as a fitter and advanced through all the grades to his present position. There is not much he does not know about the Gipsies. On the right is charge-hand Gilbert Winterbottom, who was a fitter in the old "Airco" days of the last war, and he remembers when an army hut stood where the present engine shop is. D.H's were building the Humming Bird at that time. On the left is Mr. E. A. Deane, who came to us straight from school in 1928 and is considered to be one of our most reliable fitters.



PROGRESS CHART FOR A NEW PROJECT

This memorandum has illustrated several charts which show day-to-day production against a monthly programme. The accompanying picture shows a progress chart in a dispersed shop making constant-speed units for propellers It is going into production on a new project and no programme can be set yet awhile. Nevertheless the chart gives most valuable indication of the progress being made. 14 columns on the left represent the 14 main components, with a picture of each component. On each column a red arrow indicates for how many operations the tools have been delivered to the shop and a green arrow (necessarily below the red one) indicates the progress of work. Over 30 small components are indicated by squares on the right. In each square is a red circle, replaced by a green one directly the tools have been delivered and work is up to scheduled requirements. This chart came into service on June 15.



On this chart everybody can watch the stages of getting into production.

PASSENGER TRANSPORT : E. AND P. DIVISION.

Mr. H. Wilson, Office Manager of our E. and P. Divn., is chairman of a committee of industrial representatives using public transport services in the locality of the main and dispersed depots. This is one of several committees covering the whole Metropolitan area, and includes representatives of the London Passenger Transport Board, the National Welfare Society (Miss Cross) and the Welfare Officer of the Ministry of Labour and National Service. All passenger transport queries in the area are first investigated by Mr. J. T. D. Hutton of our office administration department, who is frequently able to remedy small difficulties without recourse to the committee. Before the introduction of a new time table, which usually happens at the beginning of winter or summer, past experiences are discussed. Mr. Hutton does his best to see that the small factories get the same consideration as the large. The L.P.T.B. are doing their utmost in difficult conditions and ask all travellers to help their women conductors in a trying job with which they are not all yet familiar.

MUSIC WHILE YOU WORK

In its daily programmes of music broadcast for the factories the B.B.C. aims at satisfying the general taste. Several of our factories use these B.B.C. programmes, but sometimes we have broadcast selections of gramophone records of our own choosing, which possibly would be preferred. The popular taste is not easy to discover. It is difficult to judge, for example, to what extent classical music is enjoyed, and some indication through the suggestion boxes or by people voluntarily collecting opinions in the shops would be a considerable help. One morning recently one of our main Aircraft Divn. establishments was given the following half-hour by way of a change : Coleridge Taylor's Petite Suite de Concert, Sinding's Rustle of Spring, Sibelius' Valse Triste and Kreisler's rendering of his own Caprice Viennois.

COMMITTEES FOR ABSENTEEISM

To ensure the fair study of individual circumstances before instituting prosecutions for absenteeism the setting up of factory committees is being encouraged. Arrangements have already been made for such a committee at our Engine and Propeller Divn., and, in keeping with its objective, it will be known as the Attendance Committee, not as the Absenteeism Committee. Indeed, the less work this committee has to do the better we shall all be pleased with ourselves. Mr. G. Morgan and Mr. G. E. Malyon will be permanent members and the supervisor concerned in each case will be co-opted for the hearing. Messrs. Rumball, Morris, Hayward, Wheatley, Martin and Mrs. Booth will represent the workpeople. They will be in office for 6 months and eligible for re-election. A chairman will be selected at each meeting.

The clerk who keeps attendance records will select cases on grounds of:

(a) Lateness 4 times or more in one week.
(b) Absence for unknown reasons in 2 consecutive weeks.
(c) Working less than 54 hours in a week, due to persistently leaving early, etc.

This basis will be reviewed later if the committee effects a substantial reduction in the number of cases. Four days' notice will be given to anyone summoned before the committee. The shop steward of the department may attend and speak. Recommendation to the National Service Officer to prosecute will be made only if the efforts of the committee fail, and the N.S.O. will not prosecute if the committee's majority vote is against it. The first meeting is arranged for June 24, to review the period June 8–14.

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INDUSTRIAL expansion must always endanger the element of personal contact and understanding between departments. The very nature of big business demands a more impersonal system, a wider spacing of the individuals who form its framework. This feature creeps steadily into our own organisation as we continue to build up the de Havilland contribution to the country's productivity, and we should all recognise it and minimise its ill effects.

An effort has been made in past months to send parties on their "off" days from some of our factories on visits to others, to let members of the Aircraft, Engine and Propeller Divisions and overhaul depots see a little more of one another's daily round. There are difficulties of transport, security and so forth but so far as possible this will be continued.

Particularly is it desirable that supervision staff, many of whom have been with the company for a long time, should try not to allow the new conditions to sever too drastically their personal contacts with their neighbour departments. In their case the hold of responsibilities is strong, they are kept in their own shops or offices for long hours and the opportunities for contact with their colleagues are few indeed. But they are the guardians of the de Havilland tradition and a special effort to avoid the worst effects of segregation becomes necessary to them.

Our service engineers in the field, many of them old members of the company and accustomed to act as its ambassadors among the users of our products, are to-day widely scattered. Left to their own resources, sending in brief but pithy reports, and receiving terse bulletins of new mods and methods, they are liable to feel cut off and indeed may get out of touch with the bigger issues. This is realised,

and the rule that insists upon their periodically spending a few days at headquarters on refresher courses is a good one. They should feel a responsibility to arrange for their own relief and their return to the factories at the appointed intervals. And when "at home" they should meet and mix with their friends in the assembly and detail departments as much as they can.

Also it is important that aircraft and propeller specialists and Gipsy engine technicians should maintain a good working liaison. Never let it be said that de Havillands have become so large a concern that an aircraft engineer at an outstation might be unsensitive to some propeller problem because it was "not his department." We built our business in civil aviation on service to the user and well our old G.E's know the value of service in aircraft operation—whether for transport or for bombing, whether for Jersey's holiday traffic or for moonlight trips to the Ruhr.

It will be a pity if we grow too big. Yet we cannot grow too big for the R.A.F's requirements in the job they have before them. They have not got into their stride yet. More and more widely will our dispersal and production expand. Let this not turn us into a soulless organisation. Let us remember the days of our company's early childhood, when the fabric used to be kept underneath Mr. Hearle's desk because it was such expensive stuff.

ABSENTEEISM : ENGINE AND PROPELLER DIVN.

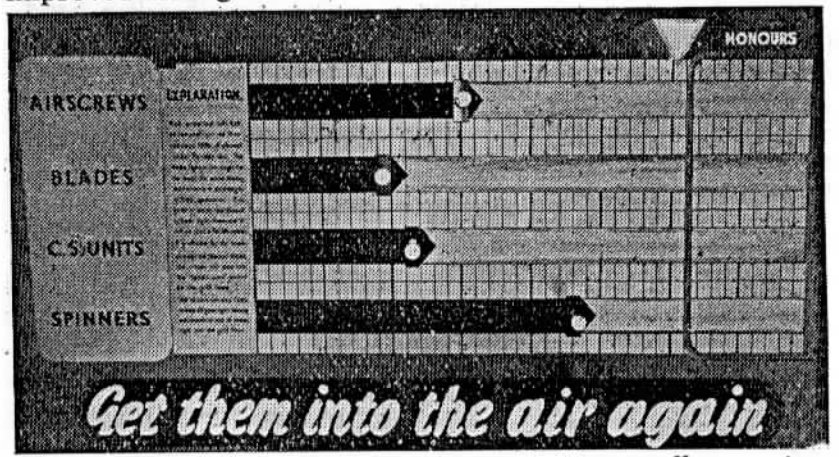
As forecast in O.J. No. 18, the E. and P. Divn. Attendance Committee met June 24 and heard about two dozen cases in 5 hours. Whilst in some cases extenuating causes were discovered, on about half of them it was admitted that time had been avoidably lost, and promises of improvement were made. Mr. Malyon thinks that the Committee will serve a useful purpose in making clear some of the underlying causes of absenteeism, etc., which statistics do not reveal.

RECORDING PROPELLER REPAIRS

Weekly output at our main propeller repair depot is shown on a new indicator and flow of blades, constant-speed units and spinners is recorded separately. Vertical lines indicate fifths of a day's planned output, with a triangular white light indicating the target for the week. In each of the four departments an arrow is extended daily towards the right to indicate actual production. If production is as good as or better than planned, this arrow is headed by a green light ; if not so good, by a red light.

If production for the whole week exceeds the planned output the arrow will pass into the gold framed "honours panel," ! Thus the double aim is (1) to keep all lights green. and (2) to put four good bands across the gold frame.

This indicator came into use on June 8. Blades were in arrears when photographed on June 12—but for no fault of the blade shop ; it was largely due to delay in an outside operation, but the new factory extension will afford improved arrangements for this operation.



A week's work in propeller repairs. D.H. propellers go into battle time and time again.

S.A.G. JOINT COMMITTEE : WING SHOP

First ordinary meeting was held June 5 and 10. Present : Captain Walker, Messrs. Statham, Davis, Ashpool, Mitchell, Gauld, Morse, Westacott, Starck, Redwood, Millgate, Hunt, Tank, Mrs. Walker.

A sub-committee will deal with specific cases of bad time-keeping and absenteeism and report to the full Committee who will decide whether to place before the National Service Officer.

Period of Office : Workpeoples' representatives' election to be every six months. Any group may approach the Committee with a view to changing their representative. Production snags between meetings to be dealt with by Supervision. Production programme : wing output at present leading, due to absence of major mods. Visit to aircraft assembly depot and visit from experienced pilots to be arranged soonest possible. Dope shop conditions to be improved. Mrs. Walker was given permission to hold a meeting of all women workers to discuss Women's Parliament to be held in London concerning industrial training of women, women's wages, wartime nurseries. Factory ventilation before 8 a.m. to be improved. Mr. Mitchell (Planning) and Mr. Hunt (Electricians chargehand) to try to remedy incomplete accord between schedules and drawings. Tank door equipment : Broom & Wade riveter and twin drills urgently needed. Shortage of cadmium-coated screws discussed. Loose material and shortage lists not to be sent out until two days after wing has left. Inspection Dept. emphasise minimum glue-setting time of 4 hours where tacking strips are employed. Standard charts for treatments of washers and bolts to be put up on walls. Further representations to be made to Board of Trade *re* overalls for work. Delays and wastages in normalising and heat treatment will be eliminated when our own plant is completed. When workpeople hold meetings to discuss production management will advise supervision staff of the particular departments

MORE D.H. PERSONALITIES

Right : Mr. P. F. Bryan, Chief Draughtsman, Aircraft Divn. He served 7 years' workshop and D.O. apprenticeship with the Air Navigation and Engineering Co., Ltd., starting 1917. Joined Beardmores in 1924 on the Clyde, assisting in design of the Wee Bee 2-seater (Bristol Cherub engine) and the big Inflexible monoplane bomber. Went to Bristols, engine design office, in 1927. Became Chief Draughtsman of the Larkin Aircraft Co., Melbourne, Australia, in 1929, where he met Mr. Lee Murray. Returned to England 1932 and joined our design staff at the time of the DH.86. Became Chief Draughtsman in 1940. Above, left : Mr. Fred Law, superintendent of an important Engine Repair Section under Mr. Snell, is quite a character among our old-timers. He joined the company in 1924 after many years of experience in aero engines elsewhere. Worked in the Fitting Shop under Mr. Jock Allardyce. Was transferred to inspection staff and later to aerodrome inspection. Concentrated on engines from the birth of the first Gipsy and has been present as Experimental Department Test Inspector at every Gipsy type test from the Gipsy One to the Gipsy Six H. Promoted to Deputy Chief Inspector, Engines, under Mr. Povey and Mr. Miller. Joined engine experimental department under Mr. Snell in 1938 and transferred to this special repair section when it was inaugurated, becoming superintendent in May, 1942. Left : Mr. and Mrs. J. H. Taylor after their marriage on June 20. Jack Taylor came to us from Gloster in 1932 as a skilled aero tools man, rising to take charge of his section and later becoming assistant foreman and foreman of the Tool Room. Promoted superintendent o all jig and tool shops, Aircraft Divn., in Aug., 1940. He has married Miss Stella Marquis, who joined us early in the war as a lady driver and lately transferred to the Aircraft sub-contracts department.

to be present. Unsatisfactory work entering Fitting Shop from outside firms to be returned for rectification as soon as flow becomes adequate.

S.A.G. JOINT COMMITTEE: FUSELAGE SHOP

First meeting held June 12. Present: Captain Walker, Messrs. Edworthy, Tyler, Campion, Read, Gauld, Preston, Grives, Branton, Mrs. Stocking, Miss Morgan.

Period of office to be six months. No meeting to exceed two hours. Fuselage shells to be given aircraft numbers and cleared in correct order. One clinometer to be transferred from Inspection to shop. More clinometers and straight-edges to be ordered. Assembly and rigging-line plan awaits delivery of equipment; temporary scheme to be investigated. Mr. Edworthy to investigate proposal for distance rod between bulkheads 2 and 4. Rostrums to be supplied soonest possible for assembly and doping. Curtain to be fixed to separate spraying from doping. Band at tail of aircraft to be tried for glueing bulkhead No. 7. Ventilation: bricked-in windows to be opened if possible. Need for splicing machine to be investigated. Two moveable erectors' benches to be made. Notices to be posted about ceasing work before time.

After discussion it was agreed to appoint a sub-committee to act as the appropriate committee under the Essential Works Order to investigate absenteeism and bad time-keeping.

PRODUCTION COMMITTEE MINUTES

Reports on production committees in this memorandum are unavoidably becoming briefer. Therefore boards are being put up in the Aircraft Divn. (near to the multiple-poster boards) on which the full minutes will be posted, also the agenda for the next meeting. Each committee member receives a copy. Other Divisions may follow this plan.

UNSCHEDULED PROPELLER DEMAND

In issue No. 17 we referred to two urgent propeller programme adjustments necessitated by military considerations. The efforts involved in these sudden demands produced good results, and by adjustment in forgings, etc., we were able to start deliveries within three weeks, and give quite good quantities shortly afterwards. Colonel J. J. Llewellin, Minister of Aircraft Production, wrote Mr. Parkes a personal letter of thanks to all concerned, saying: "The way in which you and all those working in the factory have produced this new propeller in record time is a great credit to you all . . . They are much needed . . ."

Others in our organisation also have reason to be pleased for the Director of Repair and Maintenance has sent us a copy of a letter which he received from the Air Officer Commanding in Chief, Bomber Command, to ask that all concerned should have conveyed to them appreciation for the work they have done, contributing towards the establishment of 1,000-a-night bomber raids. He said all in Bomber Command realised how hard they had worked often in difficult circumstances. Their continued efforts will materially help to hit Germany hard and often.

GIPSY ENGINE REPAIR ORGANISATION

A plan instituted a year ago to organise a country-wide Gipsy overhaul and repair service, and develop an output proportionate to the inflow, was realised during May. The co-ordination of all repairs and overhauls of Gipsy engines in the British Isles was put into our hands, as "parents" of the Gipsy range of engines, by the Directorate of Repair and Maintenance of the R.A.F. In addition to our own overhaul department other engine-overhaul firms in various parts of England and Scotland handle Gipsies under this scheme so that the organisation is well dispersed and transportation is saved by allocating engines geographically from flying schools, etc., to the nearest overhaul depot.

Working out of the scheme naturally fell upon Mr. Brant and his Service Department staff. His task was to develop the overhaul capacity in relation to the volume of engine-hours per year, and to reduce to an economic level the float of engines awaiting overhaul.

Coincident with the achievement of this objective came the official permission to extend the overhaul period of the Gipsy Major I engine to 1,260 hours. This permitted a further adjustment of the repair capacity and the release of labour for other branches of the war effort. We cannot quote figures but, considering that every pilot learns to fly behind a Gipsy Major, the enormous scope of the system and the need for exact control of overhauls becomes more than obvious. Incidentally, as parents of the Tiger Moth trainer, our company maintains a technical liaison with all Tiger Moth airframe repair depots and supervises their methods,—another of the responsibilities of the Service Department engineers.

JUNE PRODUCTION

AIRCRAFT DIVISION.—The output curve was well above the target line by June 30 which brought complimentary remarks from Mr. Grinham at the Joint Production Meeting about which more will be said later. The target line is raised for July and all are trying again to beat it.

ENGINE AND PROPELLER DIVISION—"A very good show" was the comment by Mr. H. J. Nixon when looking at the figures for the month. Allowing for the Propellers' holiday, the output was better in proportion than the previous month and in the Blade Shop satisfactory progress was made towards the large end-of-the-year planned "high." The average of the past few months in engine output was maintained; in fact, June was a useful all-round one to exceed in July.

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AIRCRAFT DIVISION JOINT PRODUCTION COMMITTEE

The third meeting was held on June 30. Individuals co-opted to the Committee for specific subjects are named in the appropriate paragraphs below.

Work-people's Proposals.

1.—Women's training : Mr. Grinham introduced Squadron Leader Reeve, now in charge of the training of women for the shops which is taking place at a dispersed depot. Mr. Bowler to submit to Mr. Grinham a list of bigger assembly jobs which he considers women capable of doing. Mr. Lydall asked whether efforts were being made to bring more girls into the works, in view of Mr. Bevin's proposed new call-up. Mr. Fitzhenry suggested a publicity campaign. Mr. Grinham agreed to a weekly list of vacancies being posted, but all applications would have to go through the Ministry of Labour. Mr. Marshall suggested putting intelligent girls with skilled electricians on the assembly line instead of sending them first to a training school. Squadron Leader Reeve to discuss with committee members.

2.—Fitting Shop—Planning and Sub-contractors : Mr. Bowler expressed concern at time wasted on sub-contractors' mods, also delivery delays. Mr. Bowler to submit list of points for investigation. Mr. Bourne, co-opted, explained difficulty of introducing mods immediately. Mr. Bilton, co-opted, reported on capacity available at dispersed Machine Shop (see previous meeting). Mr. Rudge forecast more even flow henceforth. Mr. C. G. Long was also co-opted for this discussion.

3.—Canteen : Mr. Trounce asked for workers' representation on canteen management. This was felt to be beyond province of Production Committee. Management always

pleased to receive ideas from Shop Stewards' Canteen Sub-committee. Miss Mould was co-opted for this discussion.
4.—Transport: Mr. Bilton described transport problem of dispersed Machine Shop, etc., and effect upon overtime. Mr. Guiver, co-opted, reported that Ministry of Transport would not grant special bus. He to arrange for Union representatives to meet Ministry officials. Mr. Guiver trying to arrange for priority in bus queues for workers and season ticket holders.

Proposals Raised by Mr. Grinham.
1.—Production for July: July target calls for augmented night shift. Mr. Marshall said more girls would be needed in Electrical Department. Mr. Grinham agreed to give priority to Electrical Department when placing girls in factory.

Further Business.
1.—Mr. Harris complained of major units arriving with certain operations incomplete, and with shortages not listed. Mr. Long to discuss with sub-contractors. Stores sub-committee to discuss best method of obtaining shortages, aslo Stores Layout for Assembly line.
2.—Mr. Grinham to investigate capacity of main Machine Shop and possible transfer of girls elsewhere.
3.—Committee advocates another visit from an Operational Pilot.

PASSENGER TRANSPORT: AIRCRAFT DIVN.

Referring to the paragraph in O.J. No. 18, the halt on the local railway near the main aircraft works is to be opened on Aug. 1. Timetables and fares are posted on the works notice boards.

ADJUSTMENT OF THE PROPELLER PROGRAMME.

For the third month in succession our Propeller Division has been called upon suddenly by the Ministry to meet special military requirements, and this has naturally involved a considerable adjustment of the July production, with the result that the programme indicated on the "target for the month" chart will not be achieved. We have the satisfaction of knowing that the work we are doing instead this month is of the highest importance to the air striking forces.

SAVING PAPER

Our secretarial department requests all departments throughout the company to take more specific action for saving paper. Will the head of every department please appoint a salvage officer to search all records and files and explore the possibilities of turning out old material? Older documents in current files can be transferred to storage cases, replacing still older stored papers which can be cleared out for salvage. Heads of departments are urged to under-order rather than over-order when instituting new forms because in these days new systems quickly become out of date. It is emphasised that the idea that the saving of office stationery is of no great importance is utterly false. No department is too busy to ignore this appeal. However rushed any department may be it can never be too rushed to save paper.

HOME GUARD RESPONSIBILITIES

Questions are asked concerning priority as between factory responsibility and Home Guard parades. Our own Home Guard units in the various factories so arrange parades that little or no interference is caused to production. Even so it may happen that a man warned for a parade may be required to work to finish an urgent job. He should obtain a note from his foreman, requesting exemption from the parade, and send it to the Home Guard office before parade time. In the case of men attached to outside H.G. units our H.G. office are able to get in touch with the local H.G. commander and inform him should a man be required on

urgent work in the factory. It is rarely necessary because the majority of outside H.G. units commence their parades late in the evening. Some doubt exists as to categories A and B in the Home Guard. These categories are for use only in the case of a general Home Guard mobilisation and are not used for assessing a man's availability for training parades.

CONTINUITY OF WORK IN AIRCRAFT REPAIR FACTORIES

The following letter has been received from Mr. J. R. Woodcock, Director of the Civilian Repair Organisation, R.A.F., who directs the flow of work through our aircraft repair establishment :—

The Minister has received a large number of letters from work-people employed at Aircraft Repair Factories in which a temporary shortage of work is being experienced. It is thought that an explanation of the problems peculiar to the Repair Industry will be of interest to those who are so intimately concerned with this important type of work, and will enable them to understand more fully why a steady flow of repairable aircraft cannot be arranged.

Input of repairable aircraft is dependent upon a number of factors which are beyond anyone's control. It is affected by the number of a given type in service, the intensity of use to which a type may be put, to weather conditions, and fluctuations of war. The Repair Organisation as a whole has been planned to cater for a maximum number of aircraft and not for an average number, and it sometimes happens that the holding of any particular type falls considerably below that of the repair capacity which has been set up to cope with the estimated input. It is essential that this unused capacity be available at a moment's notice, however, as it is the unexpected turn of the wheel that can prove so dangerous unless proper precautions have been taken to meet it.

A talk recently broadcast by Mr. Arthur Woodburn, M.P., gives a clear illustration of this point. Mr. Woodburn said :

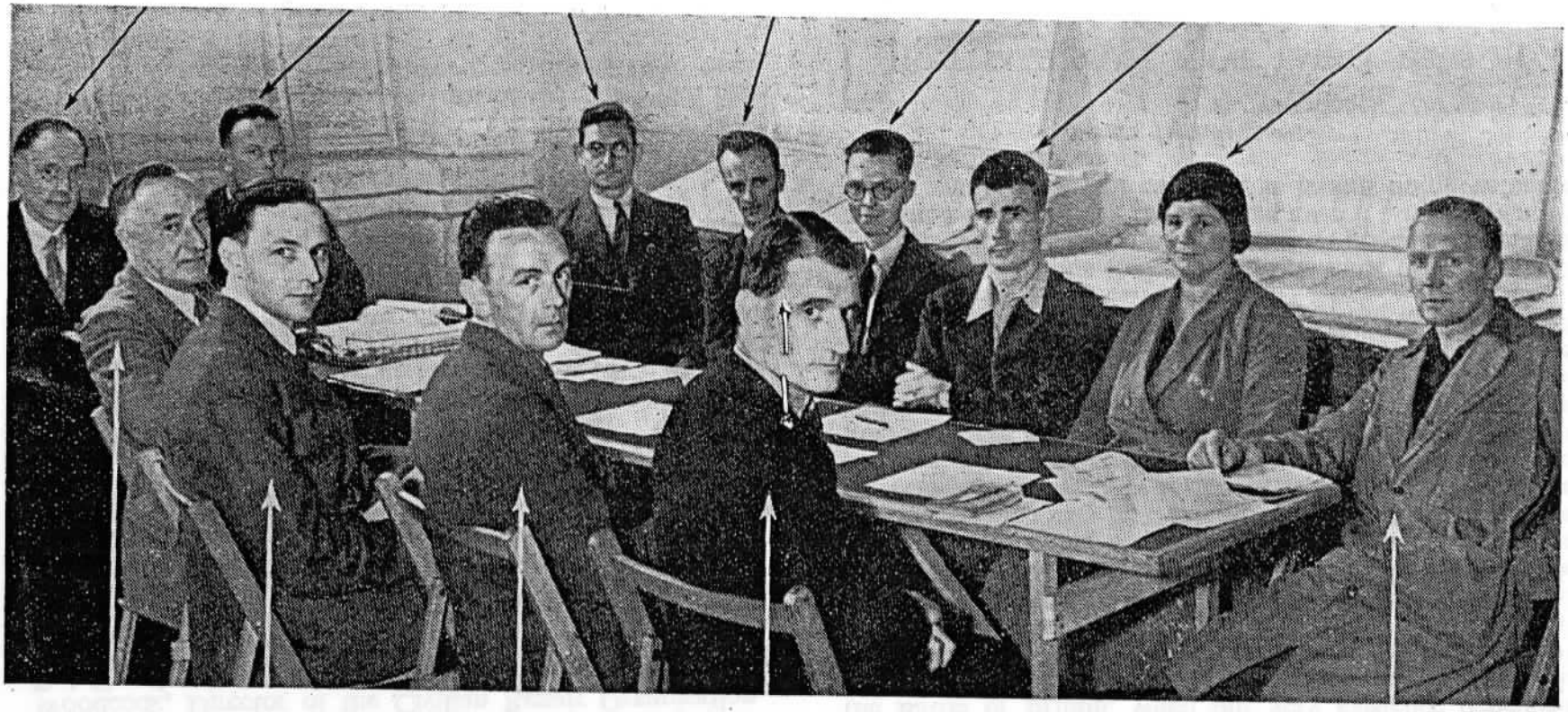
"I had a complaint recently from engineers in a certain aircraft factory that they were not fully employed. This factory, however, turned out to be engaged on the repair of aircraft. Now, there is an instance of one great cause for men and women to be standing idle ; and yet there is no easy solution. We must keep services ready for emergency. There was no idle time in this repair factory during the Battle of Britain, when our very existence depended upon planes being repaired immediately and thrown back into the fight. At any moment the whole nation may be at bay and we must have reserves in industry ready to deal at once with damaged planes, damaged ships and damaged tanks. You will understand this more easily if you think of the great hospital services standing idle in readiness for casualties which may be created over-night. Great numbers are also on waiting duty in the Civil Defence Services, the National Fire Service and even in the Army itself. The question does arise whether in the meantime we cannot make some use of these people's energy, but we certainly cannot take any risks in not having fire and hospitals staffs as ready for service as the Army itself. This is equally true in workshops which are hospitals for damaged ships and planes."

It will be obvious that repair work must not be looked at from the same point of view as new production, and it is desired to emphasize the fact that even if a repair factory is not working to full capacity, it is still doing valuable service to the war effort.

Yours faithfully,
J. R. Woodcock, *Director.*

HOSPITALS MUST HAVE EMPTY BEDS IN READINESS.

P. Davis, *Assistant Supt.* S. G. Statham, *Works Supt.* H. R. Hunt, *Assistant Foreman, Electricians.* G. Redwood, *Inspector.* C. R. Millgate, *Chief Shop Feeder.* H. A. Tank, *Aircraft Woodworker.* Mrs. E. Walker, *Sprayer.*



A. Morse, *Inspector in Charge.* J. Ashpool, *Senior Foreman.* T. Mitchell, *Chief Ratefixer & Method.* K. W. Gould, *Joint Secretary.* A. Westacott, *Joint Secretary.*

S.A.G. Joint Committee, Wing Shop. Members of the committee whose first meeting was recorded in O.J. No. 19. Captain Walker, General Works Manager, chairman of the committee, was absent when the photograph was taken.

BADGES FOR SERVICE ENGINEERS

D.H. engineers working in civilian clothes at R.A.F. stations, etc., are to be supplied with lapel badges of the company's trade mark, recognised the world over. They will be issued, against signature, by the Aircraft Service Department (covering Aircraft and Engine Division engineers) and the Propeller Service Department. Each badge will be numbered and will remain the company's property.

ENGINE OVERHAULS BUILDING UP

Mr. W. U. Snell (see issue No. 10 of 5/3/42) reports that in a recent month the output of repaired engines from his department was 46 per cent. higher than in the previous best month and 21 per cent. up on Ministry programme. As a consequence the M.A.P. have increased the programme by 20 per cent., which the department has every confidence in maintaining and surpassing this summer. An important point as regards organisation is that the increase has been obtained with hardly any expansion of personnel since the very early days. Joint production committee and absentee committee have been started.

WAR SAVINGS LEAGUE

Mr. R. Robert, Secretary of the War Savings Group, Aircraft Division, writes: "The League has now been operating for 4 months and as a result of the great response, in both works and offices, the membership of the No. 2 Savings Group has more than doubled in that period. A reference to the recently published "League Table" shows that two teams have now achieved 100 per cent. membership: Service Dept. (Captain, Mr. H. H. Cox) and Dispersed Sheet Metal (Captain, Mr. H. J. Sheppard). There have also been two noteworthy improvements in team percentages: Drawing Office (Captain, Miss Christiansen) jumped no less than 41.5 per cent. in one month, whilst Receiving, Despatch and Transport Staff (Captain, Mr. W. C. Ivimy) were almost as spirited with an advance of 32 per cent. for June. This should prove to Captains still at the bottom of the Table, that good progress *is* possible provided that the initiative is taken."

AIRCRAFT DIVN. A.R.P. TRAINING

Dispersal so complicated the training of A.R.P. personnel in the Aircraft Divn. that Mr. Rippin had to provide a team of instructors. To this end three consecutive Sundays have recently been set aside for an instructors' course, and it is refreshing to note that in these difficult times, when a free day is of enormous value from every point of view, the attendance, and the number who took the final examination, was high. In most cases it meant working through a full month without a free day—a good effort on the part of the students and those who instructed them.

BLOOD FOR URGENT REPAIR WORK

Besides their output of repaired aeroplanes and components in the week ended July 11 our main Aircraft Repair Depot provided 100 pints of blood to be dried into plasma for storage. This will be used for war casualties, Air Force, Army, Navy and civilian, abroad and at home. Part of the enlarged canteen was converted into a clinic for one day and blood was drawn from 100 donors in six hours. About 150 had volunteered and the rest will have their turn on the next occasion. The arrangements were organised by Mrs. Bridgman, who is in charge of all first aid matters at the depot, and were excellent. Mrs. Sharp assisted her. Dr. Thompson, the company's medical officer, arrived by air, supervised the day's work, and flew to head office immediately afterwards. The blood transfusion service is one of the most valuable repair services in the whole war effort. There are centres all over the country from which mobile units comprising doctors, nurses, orderlies and equipment go out to take blood from organised groups of citizens in all walks of life. Every pint given will greatly help a human repair job and will probably save a life.

DO YOU KNOW THESE FACES?

More D. H. Personalities

Left, above, Mr. H. Wilson, Office and Labour Manager of our Engine and Propeller Divn. group of factories. He joined our Stag Lane office in April 1933, in the cost accounting department, afterwards transferring to the Wages Office. With a few months' coaching from Mr. Taylor, he remained behind in charge of wages and labour when aircraft manufacture removed to the new factory in 1934. In 1939 he became Labour Manager, E. and P. Divn., and in August, 1941, he was appointed to his present responsible post.

Right, above, Mrs. Dorothy Hicks, dope and fabric charge hand, has been with the company 13 years, having joined us at Stag Lane in 1929, under Mrs. Leach. She moved to Hatfield when the Dragon Rapides and Tiger Moths were wanting covers in quantity. Now responsibly placed at a dispersed shop.

Below, left to right: Messrs. F. Crudge, W. S. Cowell, A. Ayre, A. E. Staines, E. J. Drake, A. W. Wallace. Messrs. Crudge, Cowell and Drake were three of the first fitters engaged for propeller assembly, in 1935. Mr. Staines, Propeller Superintendent, joined us in April, 1933, as a machine shop foreman and went to the new propeller shop in 1935, where he laid out the original machine shop and blade shop and produced the first layouts and the first propeller fully machined in our own shops. Mr. Ayre has been an engine fitter, a tool maker and for some years on the inspection staff since he joined us in 1928. He was concerned with the building of our first propeller. He is now general foreman of propeller assembly. Mr. Wallace joined us in 1935 and is now assistant to Mr. Lineker, our chief inspector, propellers. He went to U.S.A. in 1937 in connection with inspectional standards.

Right, above, Miss I. Carson and Miss I. Horn, useful members of an important engine repair section, were respectively a chemist's assistant and a cinema cashier before taking up war work.

Left, above, Mr. R. A. Barton, Sheet Metal Superintendent. Joined the company in 1929 in the Sheet Metal Dept., Stag Lane. Became charge hand in 1936 under Mr. Long, when the first experimental department was started, working then on the Dragonfly. Foreman on metal side of the Albatross, 1937. When Mr. Murray and Mr. Plumb returned from America he was made foreman to develop Foundry and Press Shop, and later was promoted to his present position.

SHEET METAL

The S.A.G. sheet metal shop have made the best of the canteen facilities available since they moved to their new premises last November, but the new canteen will shortly replace the present temporary arrangement. The shop has made good progress with the training of labour. Only about 11 per cent. of their personnel are skilled and 48 per cent. are women, practically all obtained from one of the Government Training Centres. The majority of these had no previous experience, yet the quality of their work has advanced well and they are doing the same hours as the men.

£10 FOR A GOOD IDEA

Mr. S. E. Bailey, E. and P. Divn. Tool Room, has been awarded £10 for his suggestion for prolonging the life of cutting tools on the Sundstrand shank milling cutters. He recommended that the keepers which hold the cutters should be advanced towards the periphery of the cutter body so that more of the length of the cutter can be used before replacement becomes necessary. The old position of the keepers, chosen in days when high-speed steel was abundant, gave a liberal margin for firmness of grip.

240,000 PENNIES

Mr. Hearle has had a letter from the organisers of The Duke of Gloucester's Red Cross and St. John Appeal, congratulating personnel of the de Havilland Aircraft Division on having passed the £1,000 mark in their contributions to the Red Cross Penny-a-Week Fund. He writes : " Thousands of lonely men in enemy prison camps, wounded members of the Fighting Forces, at home and abroad, as well as civilian victims of enemy air attack in this country, have cause to bless the humanitarian services these weekly con- tributions to the Penny-a-Week Fund have helped to make possible."

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Private O. J. No. 21
Memorandum of information to all de Havilland personnel. 6/8/42

SAFETY PRECAUTIONS

We have been asked by Mr. Street to publish the following:

A.R.P.—The posting of large notices at the main aircraft factory giving particulars of the A.R.P. warnings completes the revision of signals throughout the Company. From time to time alterations may have to be made to meet current conditions, but meanwhile it is up to all to keep themselves familiar with the signals and to know the allotted shelter to which they should go.

We think we are right in saying that during the time of great enemy activity over this country considerable confidence in the warning system was felt. Since that time great numbers of new employees have joined the Company and it is to them that the following remarks are mainly addressed. All should note :

(a) Rely on the Company's warning systems rather than the public alert.

(b) In the interests of production, never more important than now, as many as possible should continue working until the final warning is given, when they should, without fail, TAKE IMMEDIATE COVER. This does not mean standing about outside the factory exposing themselves to machine-gun and cannon fire or other evils.

SECURITY.—If at any time in the factory you see persons wandering about whom you do not remember having seen before, tactfully enquire their business. If you are not satisfied see that a message reaches your own Police, for you may help to prevent unauthorised people remaining on the premises.

READING ROOM NOW OPEN

The reference room at the new library at Head Office was opened on Tuesday, August 4. It is free to all D.H. personnel

who are members of the library and for the present is open every weekday from 8.45 a.m. to 6.15 p.m. Evening opening is contemplated and should be popular as winter approaches. The room is pleasant, well-lighted, ventilated and warmed. The reference library is small as yet, but growing, and there is a representative selection of daily, weekly and monthly journals. As at August 1, the library had 786 members; the record issue was 101 books in a day, almost all during lunch-time. There is less rush at 5.30 p.m.

E. AND P. DIVISION NEW CANTEEN

By now the new canteen may already have been in use a day or two, although the prospect seemed remote when going to press, so much had still to be done. The Plant Department, under Mr. Nott and Mr. Swain, have worked very hard and at last, instead of a converted factory, we have a canteen designed and equipped for the cooking and serving of meals. Unfortunately not all the wished-for facilities could be provided because of the considerations of space and wartime difficulties but the canteen is freed of many of the old handicaps unavoidable when centred in a protected establishment. Restrictions on social gatherings will be mainly those imposed by the Ministry of Home Security and the necessary shelter accommodation, for we may not use shelters provided for local residents.

The move makes room for a badly needed new machine shop and a finished-part store, as well as providing offices for the jig and tool draughtsmen.

CARE OF PROPELLER CUTTING TOOLS

The following message has been received from Mr. Wainwright of the Cutter Grinder and Tool Salvage Department, E. and P. Divn. :

Machine shop efficiency depends largely upon care in making, using, regrinding and salvaging all cutting tools. It is very gratifying to notice the care some operators exercise in setting up their Berliner machines for the shaping of propeller blades, by adjusting the jacks under the blade, ensuring that the centres of the machine are engaged correctly, and then (most important) gradually feeding down the cut instead of allowing the cutter to take the full depth on the first stroke. Recent records show that on two occasions 13 camber sides and 22 face sides were obtained by careful cutter use. This is exceptionally good and does help in the saving of high-speed steel.

During the past few weeks Berliner cutters produced from the cutter grinding department have been brought up to precision standards, with limits of ½ degree and ± .002 in. All this on 16 teeth gives a very tight limit. On these cutters each tooth costs several shillings and many hundreds were used last month. It should be remembered that re-blading the cutter body is an operation taking 7 hours 40 minutes. The cutter grinder inspector handles, checks and records the life of these cutters meticulously and his work, coupled with care on the part of the operator, does a great deal towards hitting our production target for the month.

ENGINE REPAIR JOINT COMMITTEE

The third meeting of the Joint Production Committee of an important Engine Repair Section was held on July 20. Discussion began on crankcase deficiencies in one assembly shop, which will be righted when the new machine shop is completed. Acid tank troubles should be over when the extra extractor fan arrives ; and until Mr. Little receives his universal grinder it was agreed an outside concern should remove excess chromium plating on certain units. On the question of labourers' bonus it was explained that Mr. Snell was trying to reach a satisfactory conclusion.

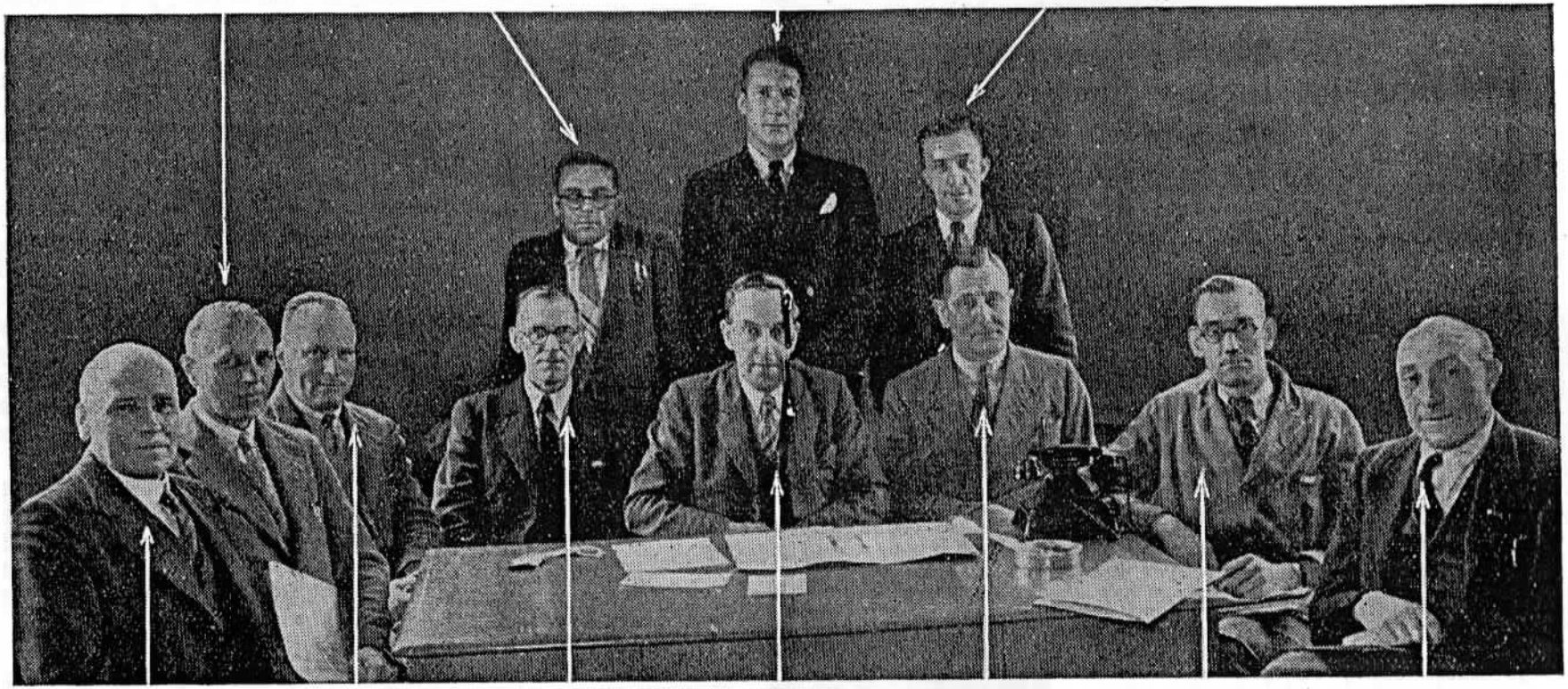
At the other assembly shop the seeming difficulty in getting clear information concerning work required on rejected engines was discussed, a knotty point made harder because of the distance between assembly point and test-bed. The suggestion that part of the first-aid room at the latter place

G. Boultbee,
Works Foreman,
Assembly Shop.

D. S. Edge,
Inspector, Shop Steward,
deputizing for J. Storey,
Shop Steward.

R. Grew,
Works Foreman,
Assembly Shop.

T. Cullen,
Test Beds Fitter.



C. W. Bull,
Foreman Inspector,
deputizing for W. Hislop,
Deputy Chief Inspector.

C. E. Aubrey,
Works Foreman,
Test Beds.

F. Little,
Works Foreman,
Machine Shop.

Fred Law,
Superintendent.

W. Taylor,
Inspector,
Shop Steward.

A. Lovegrove,
Fitter,
Shop Steward.

S. Levy,
Shop Steward.

Engine Repair Section, Joint Production Committee. *Report of the Committee's third meeting is on page 3.*

should be used as a ladies' rest room was thought unsuitable, mainly on account of noise, and some other place will be sought. In further debate it emerged that the general noise problem is hoped to be solved when a silencer, now on order, arrives. Then those responsible gave information on certain shortages and explained that proposals put by Mr. Snell before M.A.P., if approved, will give more shop room.

It was interesting to hear from Mr. Fred Law afterwards that these meetings are doing much good, not the least because better feeling already exists between assembly and inspection.

FACTORY MUSIC

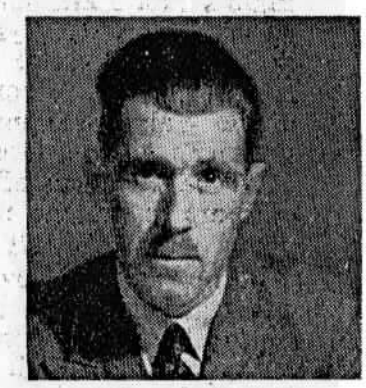
Seven written suggestions (two of them anonymous) were received in response to the request in O.J. No. 18 for ideas about music in the factories. Knowing that the majority of people have ideas, a few volunteers set about asking others and, for those who may be interested to know the outcome, it would appear that opinion is broadly as follows :

Music While You Work is popular with the majority. It should be at regular times only. Classical, semi-classical and light music, military bands, dance bands, pianoforte and violin solos, etc., are all liked and suitable, and the following requirements seem to be universal : (1) Music should be of the type that is enjoyable without being an effort to listen to—some very enjoyable music is no aid to production. (2) Rhythmic and melodious music is best. (3) Music with wide variations in volume is unsuitable. (4) Deep melancholy movements are useless.

The gramophone librarian should remember that records of which we tend to tire quickly, records that " date " easily, should be taken out of the repertoire soon—perhaps to be revived with ingenuity later. Those of which the melody is interesting enough to be not easily remembered or associated with the title will " last " longer and give a greater amount of enjoyment and stimulation, other things being equal. Classics and old favourites are often exceptions to this rule ; they go on standing the test of time but even

MORE D.H. PERSONALITIES

Left : S/Ldr. J. W. Bell, D.S.M., Service Manager, Propeller Division, has a long career on the technical side of Service flying. Received engineering training in Royal Navy and transferred to Royal Flying Corps early in 1914. *Was shot down in Heligoland Bight after raid on Cuxhaven Xmas Day,* 1914, *and picked up by submarine, later serving as Engineer Officer and flying-boat pilot. After that war he served in the R.A.F. and Air Ministry for* 18 *years in various technical appointments, including having charge of Command Engine Repair Sections at Malta and and Baghdad. Devised and formulated system of engine repair tolerances used by R.A.F. Retired from R.A.F. and joined our company as Propeller Service Manager,* 1936. *Was recalled to the Service at outbreak of present war, and after organising propeller maintenance from within the R.A.F., was permitted to return to us in Nov.,* 1940, *to supervise our propeller liaison with the squadrons.*



Below : Mr. C. (Tubby) Rose started at Stag Lane in 1930 *in the Puss Moth erecting shop, soon becoming a charge hand. Was transferred to Hatfield, and by* 1937 *was a rigging foreman. In* 1941 *was placed in charge of the dispersed wing shop. Mr. T. Gould is a woodworker and the representative responsible to the Aircraft Division Joint Production Committee for this wing shop's personal affairs.*

Above: Mr. R. C. Grinter was in peace time on the staff of the Air Registration Board. When in the Battle of Britain some important repair work came along on aircraft with which he was familiar he joined us as senior inspector. Became foreman in charge of the job soon after, and later assistant erecting shop superintendent. Appointed superintendent in 1941.

so must not be repeated too frequently. Vocal refrains lose marks for being too easily remembered and palling too soon.

Particular suggestions at random are Fred Hartley, Victor Silvester and Carroll Gibbons' orchestras of light music and dances, Ivor Moreton and Dave Kaye's Tin Pan Alley series, some Gilbert and Sullivan, Brahms' Hungarian Dances, Coleridge Taylor, Dvorak's more popular Slavonic Dances, Sibelius' Finlandia, Romance, Valse Triste, etc., Rossini's William Tell Overtures, etc., Sinding's Rustle of Spring, March Grotesque, etc., almost any of Kreisler's violin solos, Elgar's Pomp and Circumstance March, etc., Liszt's Hungarian Rhapsody, Cyril Scott's Sea Pieces, etc., Tschaikowski's Casse Noisette Suite, Romeo and Juliet Suite, etc., Johann Strauss' Viennese Waltzes, etc., Weber's Invitation to the Waltz, Smetana's My Country, Mendelssohn's Midsummer's Night's Dream, etc., etc.

We have records of some of the above and hope to build up more to suit the expressed taste.

JULY PRODUCTION

In the Propeller Division the amended planned production was reached despite the red light that was shining in the factory for most of the month, due to reasons beyond our control. The C.S.U. again did very well. In the Engine Repair Section the newly enlarged programme (see O.J. No. 20) was fully maintained. The Propeller Service Depot reports that for the first half of 1942 the joint output of propellers from their various depots was well up on the same period of 1941, whilst in the same period the C.S.U. repairs at the main propeller service depot almost equalled the whole of 1941. The Aircraft Division production for the month was better than ever before, and with the inspiration of Mr. Lee Murray's announcement over the amplifiers, aim in August to beat July by a considerable margin.

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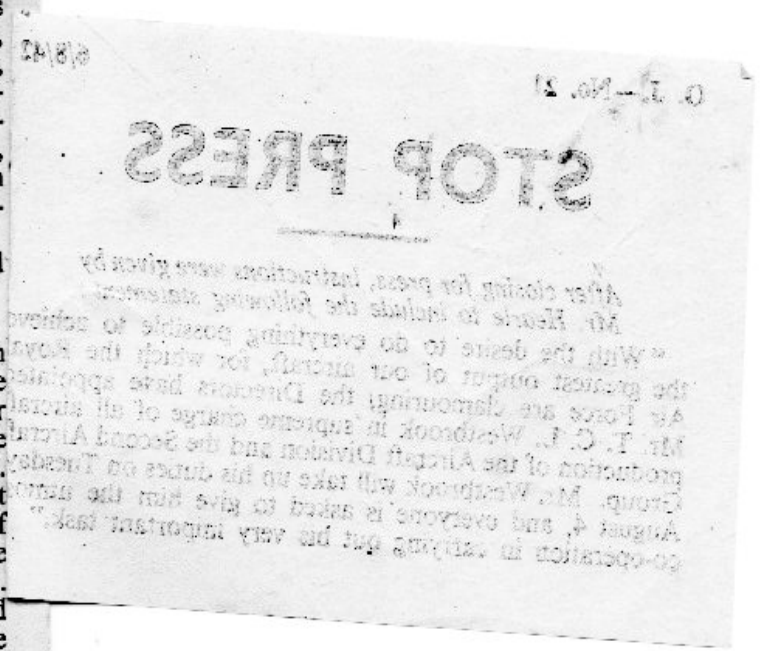

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STOP PRESS

After closing for press, instructions were given by Mr. Hearle to include the following statement:

"With the desire to do everything possible to achieve the greatest output of our aircraft, for which the Royal Air Force are clamouring, the Directors have appointed Mr. T. C. L. Westbrook in supreme charge of all aircraft production of the Aircraft Division and the Second Aircraft Group. Mr. Westbrook will take up his duties on Tuesday, August 4, and everyone is asked to give him the utmost co-operation in carrying out his very important task."

repairs at the main propeller service depot almost equalled the whole of 1941. The Aircraft Division production for the month was better than ever before, and with the inspiration of Mr. Lee Murray's announcement over the amplifiers, aim in August to beat July by a considerable margin.

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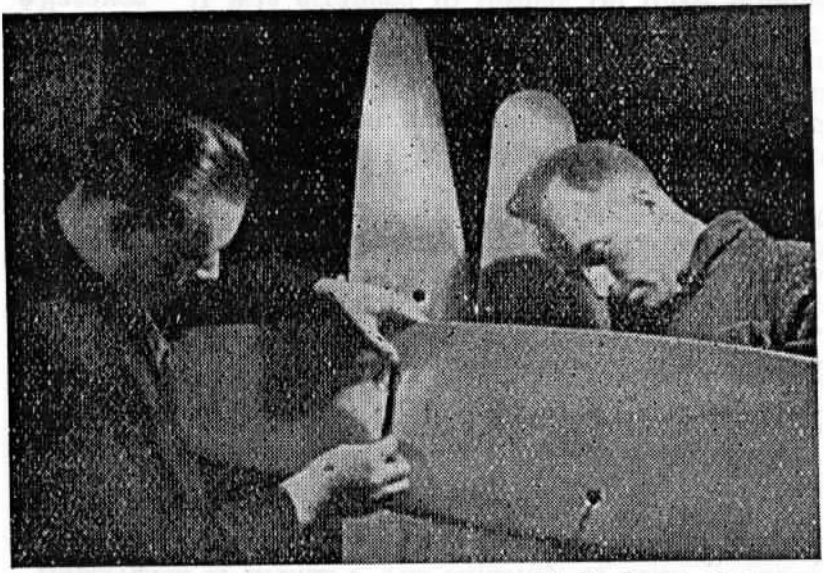
Private
Memorandum of information to all de Havilland personnel.
O. J. No. 22
18/8/42

OUR PROPELLERS CAN TAKE IT

Mr. Nott and Mr. Swain, E. and P. Divn. Plant Dept., have beaten the prophets by rapidly building the new department of the Propeller Repair Organisation. The time they set for this task—like their programme for erecting and equipping the new E. and P. Divn. canteen—was admittedly ambitious, and high credit is due to them for



A casualty receiving treatment at one of the hospitals in our propeller repair organisation. Mr. S. Hunter (left) joined the propeller division in 1937 and two years later was sent as charge hand to the service depot. His companion is Mr. C. McBride, who joined in 1940. They recalled that in the Battle of Britain this depot pioneered the roof-spotting system, everybody working on until bombs were falling nearby.

completing the two big jobs to schedule.

Opening of the new department will greatly increase the scope of the repair organisation. The old quarters had become cramped. The improved equipment in the new place (censorship disallows details) will speed up output. The new facilities are naturally designed to give greater capacity than the present state of the war demands, but " hospitals must have empty beds in readiness."

The high serviceability and repairability of our propellers greatly helps the R.A.F. Not only do our ductile dural blades bend neatly under in crash landings to act as skis and save aircraft and crew from severe damage, but the bent blades can be easily straightened and made good. They can take it. Incidentally, de Havilland propellers, in transport craft which stand less chance of being shot at, are now exceeding 5,000 hours in service without change of any main component.

AIRCRAFT DIVN. JOINT PRODUCTION COMMITTEE

The fourth meeting was held on August 5, beginning with points arising from the minutes of June 30. Reported : that the formation of a sub-committee of anti-waste stewards was awaited ; that the Ministry of Labour is in contact with the Man Power Board to get more girls for the factory ; that the machine shop previously short of work is now on full time ; and the stores sub-committee had a satisfactory meeting in July. Other points were that some members of the committee were anxious to see Sq. Ldr. Reeve on the subject of women's training, and it was arranged for Mr. Trounce to supply a list of stewards on the canteen committee. The agenda for the day was then dealt with.

Man-Power : Mr. Vickery said there was a feeling that everything possible was not always done to retain men due for call-up. Mr. O'Dell, who was present to explain the system adopted, pointed out that men do not always report

to the wages office that they have received de-reservation notices. When this is done deferment is always applied for but the final decision rests with the Man Power Board. Mr. Vickery wanted labour within the factory to be more mobile to enable transfer of operators from one department to another where needs be. Mr. Grinter said this was already being done. It was suggested a transfer sometimes caused misunderstanding and Mr. Allardyce agreed that in future anyone transferred would be given an explanation why.

Supervision of Breaks : The tendency by some to sneak off before the proper time for meals and breaks was discussed and deprecated and a more rigid control of breaks was agreed upon. It was arranged with Mr. Street, who was co-opted for the discussion, to have the collaboration of his staff. It was pointed out that clocks were not always synchronized, which would be remedied.

Inspection : Mr. Harris gave recent instances of some of the difficulties which crop up for inspection operators, resulting in congestion at the end of the production line for which they were often unjustly blamed. After discussion it was agreed that a sub-committee of charge hands and inspectors with Mr. Grinter and Mr. Adams should meet to discuss problems and suggest remedies.

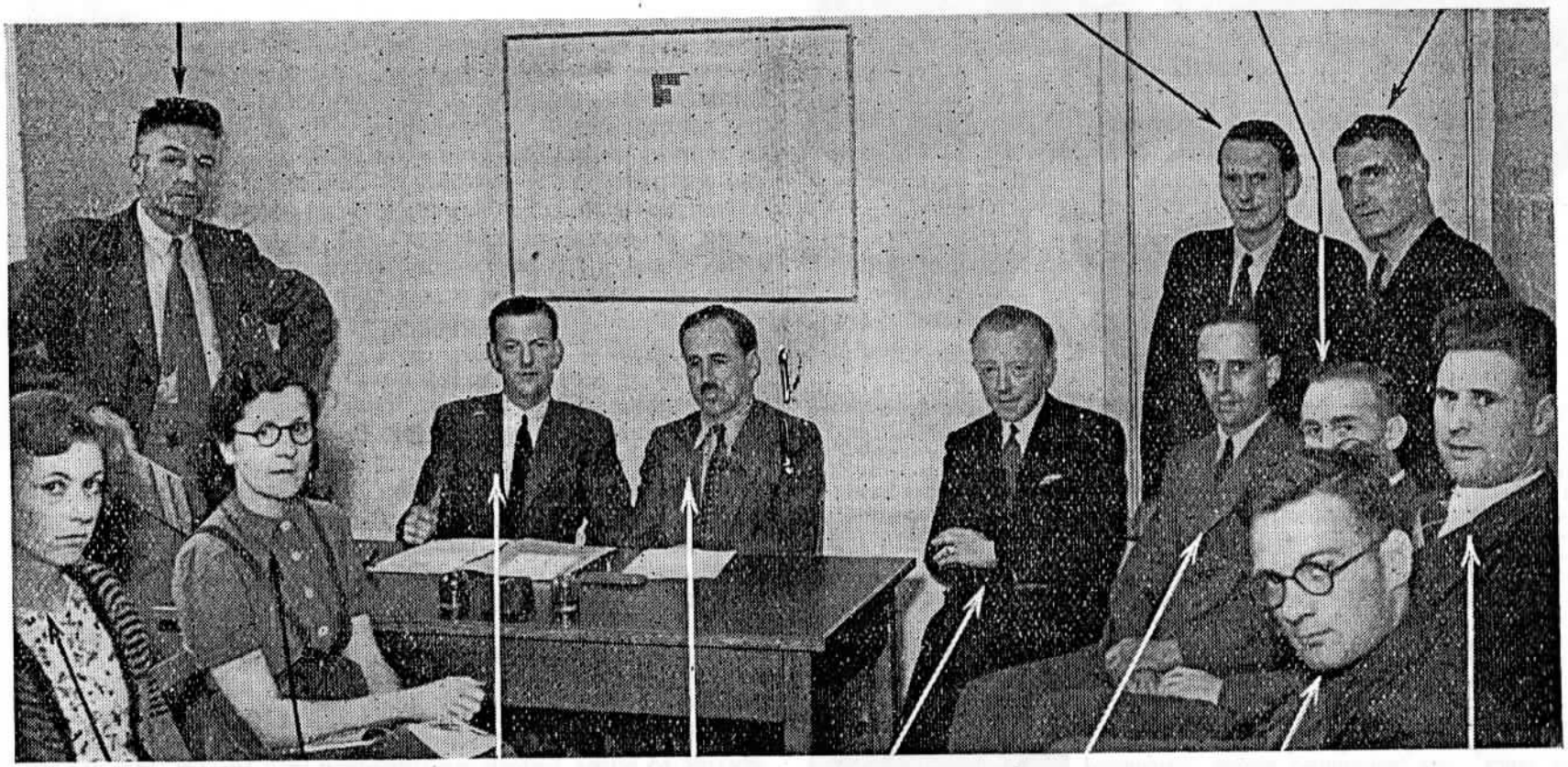
Average Working Hours : Mr. Grinham gave figures to support his statement that more hours should be worked on the average. The operators' representatives agreed to call a meeting to draw up a schedule with proposals for bringing it into force, which would be submitted to Mr. Allardyce. It was arranged to display on three suitable positions in the factory a graph showing each week the average hours worked. Mr. Grinham also said the time had come to change the night-shift rota from 25 per cent. to 33⅓ per cent. The committee thought this would be acceptable to all if it was done when production demanded and it was not arbitrarily enforced without reason. It was

L. Grives,
Fuselage Assembly.

G. Preston,
Joint Secretary.

R. Campion,
Shop Foreman.

K. W. Gauld,
Joint Secretary.



Miss J. Morgan,
Shop Feeder.

Mrs. E. Stocking,
Charge Hand, Dope Shop.

A. Edworthy,
Works Supt.

Capt. Walker,
General Works Manager, Chairman of Committee.

F. Tyler,
Works Inspection Dept.

E. Read,
Erecting Shop Foreman.

J. W. Perryman,
Erecting Shop.

P. Branton,
Works Inspection Dept.

S.A.G. Joint Production Committee, Fuselage Shop. An account of the first meeting was given in O.J. No. 18.

explained that more labour would be transferred from another place which would improve the manning of shifts.

SAVE SAILORS' LIVES—

If anyone has any ideas on waste prevention they are urged to make them known through the suggestion boxes, remembering that nothing is so small as to be unimportant. We are told by Mr. R. R. Arkell, the salvage officer for the Aircraft Divn., that although the money value of salvage he dealt with in July was 50 per cent. higher than in May, there remains great scope for the anti-waste stewards proposed at a recent Production Committee Meeting. The money value is not the best unit of measure, for more important is that when shipping is saved, sailors lives are saved. The uses for scrap metal need hardly be stressed, but it is not perhaps well enough known that waste paper helps to make radio sets, that waste rubber is wanted for barrage balloons, that bits of rope, string and twine go to make the high-grade paper needed for maps and charts, and that household bones produce nitro-glycerine for explosives. We are asked by Mr. Arkell to say he warmly appreciates the help he gets, but he needs much more. Please save all scrap and take particular care to put it in the right bin.

—AND HELP THEM TOO

The girls of the E. and P. Divn. have formed two committees to provide some sailors of the R.N. with extra comforts. The Shops have adopted a group of minesweepers, the Offices look after the crew of a destroyer. Out of a weekly collection of pennies it is hoped by one committee to provide fresh milk and vegetables, bought by skippers when in port. Requests for other things like gramophones are sympathetically considered—even a sailing dinghy has been asked for ! A petty officer and four ratings from a minesweeper called the other day to say how much it helped.

MORE D.H. PERSONALITIES

Left, Mr. E. Rainbird, test rig engineer, Aircraft Divn. Joined us at Stag Lane in January, 1929, in the aircraft erecting shop under Mr. Middleditch. Transferred in 1931 to experimental department under Mr. Plumb and attended at Air Ministry test station with D.H. 90, 91 and 93 prototypes. Transferred in 1937 to Mr. Povey's production team, in charge of hydraulics, pneumatics, engine installation, etc. Later that year became superintendent of aerodrome staff. In 1941 he was given charge of aircraft test rigs — their design, development, trial and production. Below, Mr. H. J. Nixon (right) in conference with Mr. A. W. Hallpike (centre) and Mr, P. W. Witt (left). Mr. Nixon, after 12 years with the Ford Motor Co. in Canada, joined us in 1935 as draughtsman at Stag Lane. When the Aircraft Divn. was moved he became the first jig and tool draughtsman to the Propeller Divn. Progressing through the stages of chief jig and tool draughtsman, planning superintendent and propeller production manager, he was appointed production manager of engines and propellers in 1940. Mr. Hallpike came in 1937 as production control superintendent of the Engine Divn., assuming the post for both engines and propellers a couple of years ago. Mr. Witt also joined up in 1937 and from planning engineer on the engine side was appointed planning superintendent of both sections in May 1941.

MORE AIRCRAFT WORK FOR ENGINE DIVISION

Our engine production shops are shortly to take over manufacture of more airframe components. The parts they have been turning out for a long time are proving themselves well in service, and now the Engine Divn. is about to jig and tool up for a larger unit. Before long they will be doing quite a big proportion of the high-precision machined equipment on certain aircraft.

REPAIR DEPOT'S BIGGER CANTEEN

The enlarged canteen is now well on the way to completion at our main Aircraft Repair Depot. Already there is general enthusiasm for its improved all-round amenities. A particular word of praise is due to Mr. Lockyer, the Canteen Manager, and his staff, who have battled successfully and cheerfully against tremendous odds in the way of builders' major alterations. In spite of falling walls, pneumatic drills and clouds of brick dust, they have kept the counters filled and the customers well served. Our aim is to make the Canteen as good as the best of its type in the country, and present progress augurs for this ambition.

FIRST COME, FIRST SERVED

The Wing Education Officer of a north-western R.A.F. headquarters administering a number of isolated stations writes to say they are " constantly endeavouring to obtain comforts for the personnel." We would be pleased to pass the address to anybody representing a shop wishing to help. It would be appreciated, he says, by both R.A.F. and W.A.A.F. Enquiries should be sent to the Editor at the head offices of the Company.

Seen on the wall of a sub-contractor's factory : " Bread is the staff of life, but the life of our staff is one long loaf."

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PROPELLERS ON THE AIR

The B.B.C's weekly "Award for Industry" fell upon our company the week before last, and four hard workers from our Propeller Division, in collaboration with a Coastal Command squadron leader, told the story of their jobs and their product in a high-pitch 15-minute broadcast that must have entertained millions of listeners at home and overseas. Describing the processes of machining components for the propeller and constant-speed unit was inseparable from describing the function of the propeller of to-day, and we hope that many people who never before knew what a constant-speed propeller was were enabled to understand the principles of pitch changing, constant-speed control, and feathering. Certainly it was put across in a simple enough way, the usual analogy of the gear-box of the motor-car being brought in at the beginning.

Mr. Rodney Roberts, charge hand of one of our big propeller assembly shops, was the "worker of the week," and he was supported by Miss Hilda Chaplin (c.s. unit machine shop), Mr. Jim Fowles (hub machine shop) and Mr. Bill Lewis (blade finishing shop). Mr. Roberts had a garage before the war, and his father and grandfather were doctors. Miss Chaplin was a nursemaid. Mr. Fowles has been 5 years on his present job, following 15 years in the motor industry, and is fond of reading and poetry. Mr. Lewis was for years a labourer. They and the squadron leader told the world how feathering can save a bomber after one engine has been hit, how the ductile duralumin blades bend under to form skis when an aeroplane with damaged chassis has to make a belly landing, often preventing disaster, and how bent and damaged (even bullet-holed) blades are straightened out to send back into battle

four and five times. If it gave people a realistic understanding of one vital aircraft component it was well worth the trouble they went to.

MACHINING CONTRACT CLEANLY FINISHED

Thanks to those in the dispersed constant-speed unit shop for the way they have worked out their recent contract. A difficult job, it has been well done despite the war-time necessity of using mainly unskilled labour with a bare nucleus of trained hands from the main factory. That is the test to-day—trainees quick in the uptake and old-timers patient to show how.

E. AND P. DIVISION OUTPUT

It will not help the enemy and will not comfort him to be told that the prospects (at the time of our going to print) are that we shall have turned out during August the largest quantities of Hydromatic propellers that our E. and P. Divn. has ever completed in a month, not to mention considerable additional work. In constant-speed units it is practically certain that we shall attain the August programme as laid out to allow for the effect of certain removals, and shall also complete the August schedule of an additional task. On propeller blades we are looking for a better output in September than has been possible during August and Mr. H. J. Nixon is counting upon full co-operation in his plans to this end.

In engines we shall just reach our August schedule for one type, but our total for another type will be low on account of a small technical problem concerning oil consumption which has been overcome, and which is not expected to trouble us in the future.

As regards airframe components, the main programme will be attained in addition to a quantity of a certain new-type unit.

All repair and overhaul sections, both engine and propeller, are well up to schedule.

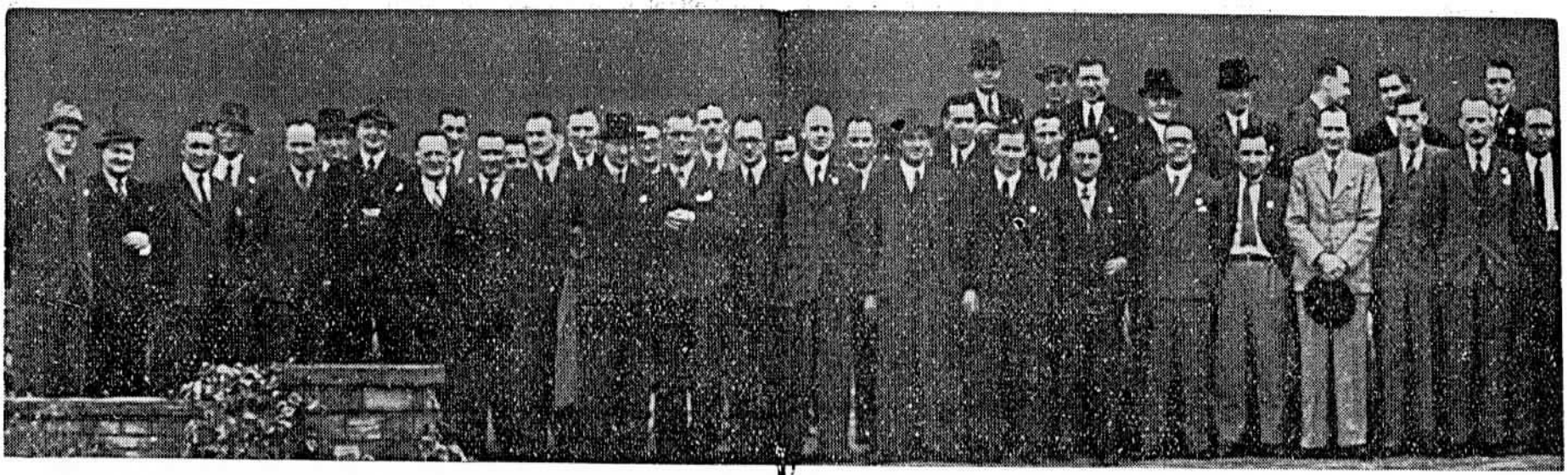
E AND P. SUPERVISION VISIT THE AIRFIELD

On a rest day late in August about ninety members of the management and supervision staff of the Engine and Propeller Division paid a visit to one of the main Aircraft Division factories where, dividing into convenient parties, they were shown through the principal departments by some of the directors of the company and members of the Aircraft Division management. Apart from the chance it gave them of seeing the aircraft work in progress and getting on friendly terms with the product itself, this was something rather exceptional in the way of a get-together of those who supervise our propeller and engine production and repair. Men who had long worked in adjacent shops found themselves in company, outside working hours, for the first time almost since war began.

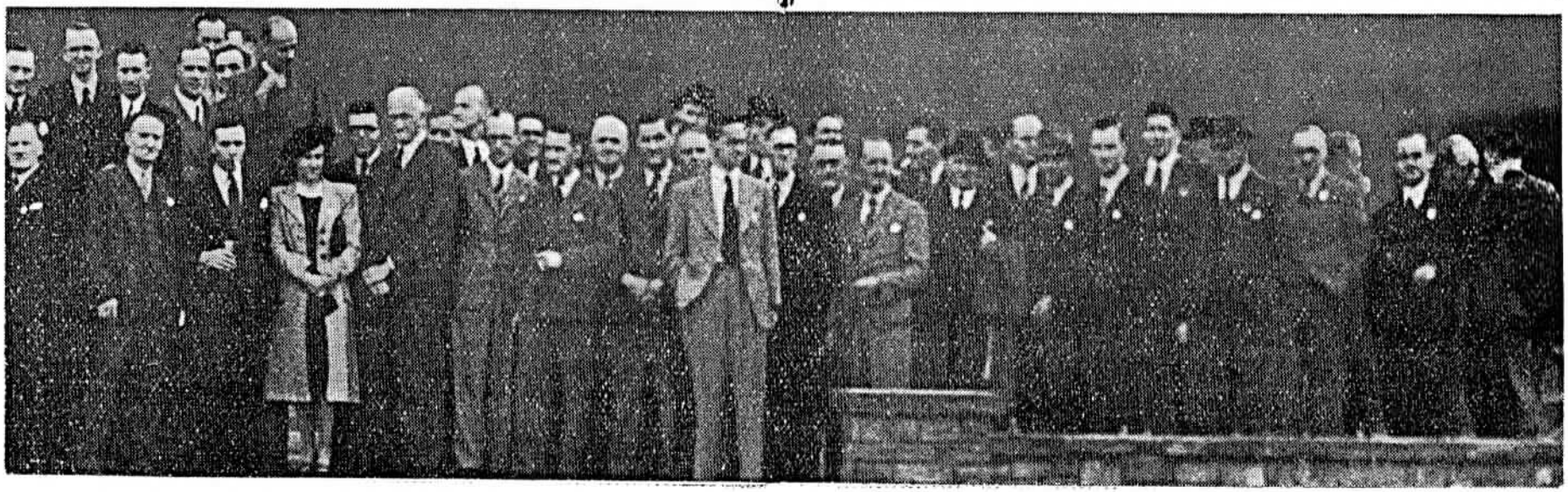
They were given a 10-minute show of our chief test pilot's finished demonstration flying, in the course of which an unpremeditated element of competition served to emphasise the finer points of manœuvrability which the ground worker usually finds difficult to appreciate.

After lunch Mr. Hearle said how glad the aircraft people were to welcome their colleagues and show them round. He hoped that they would be invited on a return visit. Mr. Hearle spoke of the importance of maintaining the virility of the engineering staff, keeping them always on their toes and continually bringing in young blood. It is the engineering staffs in the divisions of the parent company who get the difficult jobs to work out, and that is as it should be. In war time it is the function of the parent company as an organisation to create new equipment, develop it and open up the production. In this initial stage of the manufacture the engineers of the parent concern have all the difficulties of eliminating the teething troubles. Around them are grouped the shadow factories who are intended to take on quantity manufacture on a trouble-free basis.

He asked the experienced engineers and senior executive



Supervision staff of the Engine and Propeller Divn. on a visit to one of our principal airfields. We will not attempt to give the names from left to right, but many well-known faces will be recognised.



to encourage the young engineers undergoing training, to have a chat with them now and again and make them feel individually that perhaps they do matter just a little bit in the organisation—for indeed they do. They are the future

Winners of heat and final, the eight members receive their trophies from Major Butler. They are, l. to r., Cpl. L. L. Hagen (Propeller D.O.), Pte. L. S. Knowles (Prop. Machine Shop), Pte. L. Dunton (Prop. D.O.), Pte. J. W. Hetherington (Prop. D.O.), Pte. C. F. Piggott (Despatch), L./Cpl. J. S. Smith (Jig and Tool D.O.), Pte. J. W. Bond (C.S. Unit Shop), Pte. E. B. Dove (Prop. D.O.). Capt. A. R. Hopkins, Second in Command, is on the left.

strength of our engineering departments. He asked the engine and propeller engineers to make a point of visiting from time to time our engineering and trade school in the locality of their main works, to show interest in the training that was going on there, and to bear the school in mind as a source of supply for their fresh personnel.

Mr. H. J. Nixon thanked Mr. Hearle and the Aircraft Division on behalf of all the visitors and said that they had seen enough to convince them that others had problems as well as themselves.

SIGNAL SUCCESS IN HOME GUARD COMPETITION

The competition open to all the factory units in the local battalion of the Home Guard has been won by No. 2 Section, "A" Platoon, of the unit at our Engine and Propeller Division main centre. Major A. S. Butler, chairman of our company, who commands this E. and P. Divn. unit, is particularly gratified by this result because the winning section had first to compete with thirteen other sections in our own unit, and had by no means an easy victory over them ; as it then beat the winning sections in all the 23 other factory units in the battalion, there is good evidence that the standard of *all* our sections must be high. There were, of course, inter-section competitions in each of the 24 factory units, and only the winning sections competed in the final. The subjects taken were anti-gas training, fire orders and fire control, message writing and reporting, bayonet fighting and shooting (.22). No. 2 Section of "A" Platoon scored 432 points out of a possible 500 points, and won by a margin of 37 points.

BETWEEN OURSELVES

We were fortunate that two operational pilots on a business visit to our Aircraft Divn. and S.A.G. factories recently, and who had a store of experience most interesting to us, were willing to stand up and tell us what we wanted

to know. In a short time they could not answer everybody's questions, but we have since been able to arrange some 5-minute talks over the loudspeaker systems which should be of widespread interest. They will be available to the dispersed shops of this Division and to the night shifts.

EASY WAY TO HUMANITY

It is a year since the Aircraft Divn. R.A.F. Benevolent Fund week. It raised £1,000, and we were not displeased with that until our Northern Propeller Divn. turned in £1,250 from a like effort. (They said that the R.A.F. had broken quite a few records on *their* behalf from time to time). The E. and P. Divn. had no special week, but have kept sending in sums from various events. Sept. 12–20 are the dates of the Aircraft Divn.'s new drive, to be marked by a string of events, all calculated to give a lot of amusement for a little money and yet get in a good margin for the R.A.F. Benevolent Fund and the D.H. Troop Gift Fund (see O.J. No. 17). The Sports Council are to thank for this initiative and have done all the voluntary work involved. Full programmes are on the notice boards. The theme of the week will be that we are making first-rate equipment for the Services, but we owe them something more.

AIRCRAFT OUTPUT

As we go to print a big try is being made to reach the rather difficult aircraft production target that was set for August. We are framing another stiff programme for September. It will take the stoutest efforts of every department to hit it off. Follow the progress on the new charts and keep the red line above the black. Mr. Dale particularly asks the co-operation of all in making a success of new methods which he is introducing in the production control department.

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Printed by Samson Clarks.

Private O. J. No. 24
Memorandum of information to all de Havilland personnel. 18/9/42

AN INVESTMENT FOR THE FUTURE

Our Technical School Evening Classes for the 1942–1943 session began for the E. & P. factories on September 14 and will begin for the Aircraft factories on September 21. Comprehensive lists of subjects relating to the aircraft industry are arranged for the evenings of each week from Monday to Friday when instruction will be given by a strong team of lecturers. Candidates are expected to attend three lectures a week if possible. The fee is 30s. for the whole session, payable on enrolment. Although the E. & P. series is already launched, there is still time to join and Mr. A. W. Seeley will be happy to advise those interested. For the Aircraft Divn. Mr. G. M. Saul-Brown is equally ready to advise on classes and subjects and a list is displayed in the shops of the main factory explaining when and where he can be seen.

Day-time technical classes for selected 1st year entrants and 2nd year apprentices have also been arranged at places convenient to both the Aircraft and E. & P. Divisions Selection is by Technical Training School examination. It is warmly hoped that many youngsters will reach the National Certificate stage by the end of the 3rd year, and that some will even continue to the Higher National Certificate, a passport to any of the more important engineering posts. Mr. Saul-Brown, in charge of all lecture programmes, was appointed chief education officer to the Company in July last and is attached to our Technical, Trade, and Training School, of which Sq. Ldr. Reeve is Chief.

GOOD

Those who work in Mr. Snell's Engine Repair Organisation were recently complimented in a letter to Mr. Hearle from the

Director of Repair and Maintenance, for the consistently high output of overhauled engines, despite spares shortages and other difficulties. Now even greater efforts are to be made, for they are asked to cope with an increased allotment until the end of the year, a challenge which they have accepted. The additional engines will be more difficult ones than before, being a later model with important improvements, but they are determined to prove equal to the task. Their shops have output clocks (described in O.J. No. 7) for all to see, and if the white hand on them is always under the black hand, they will know the bigger programme is being maintained.

AND NOT SO GOOD

One day recently the A.R.P. first warning was sounded at one of our main Aircraft Divn. centres followed five minutes later by the factory final warning. We are told by those responsible for safety precautions that the factory was emptied quickly and satisfactorily. Three minutes later the public alert was sounded. Unfortunately a large number of people remained outside the shelters and trenches gazing upwards, conspicuous among them being girls in bright frocks and men in white overalls. In the clear weather conditions then prevailing, the large sums of money spent on camouflage and safety measures generally must have seemed rather wasted, and the complaints by some that entrance to shelters was blocked by rubbernecks was justified.

It is greatly to be regretted that the same fault has been noticed at all our factories at one time or another. There has been a great deal of thought, time and money spent to ensure as much as possible the safety of everybody, and it is the duty of all to collaborate by getting quickly INTO the proper shelters, and not hanging about.

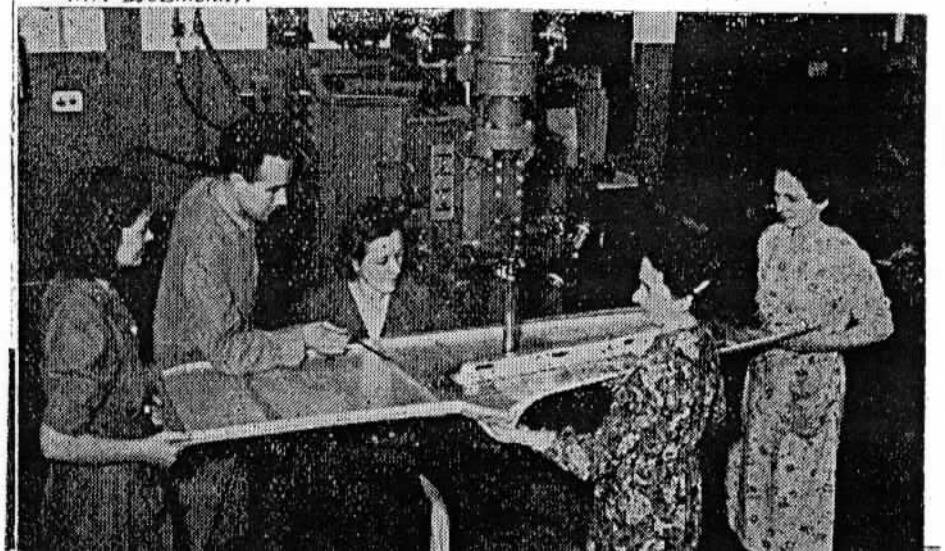
At night-time, too, there is a tendency to become careless. During an alert period, particularly when making for

ANOTHER INTER-DEPARTMENTAL WEDDING

Mr. D. W. Corrick, who joined our drawing office from Fairey's at the beginning of the war, was married on August 29 to Miss E. M. Pritchard, a senior member of the Aircraft Division lady staff. Miss Pritchard joined us on February 25, 1935, and after 4½ years' experience in the Business Office became Mr. Murray's secretary.

WOMEN WORKERS IN SHEET METAL

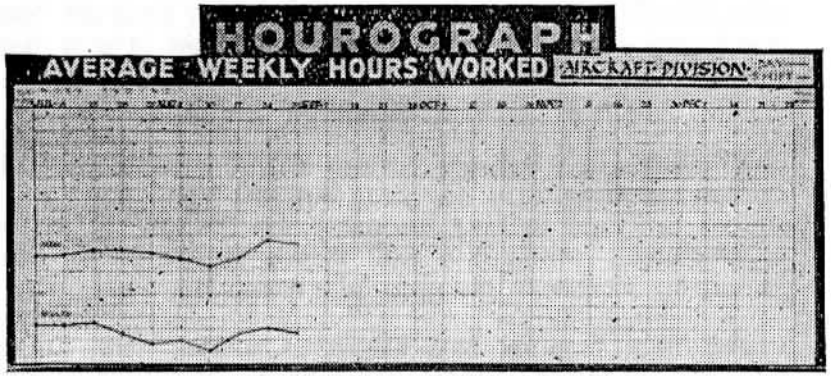
In O.J. No. 20 was mentioned the high percentage of women employed at S.A.G. sheet metal shop. Here is the spot welding team, the composition of which released the male operators for night shift, thus keeping the machines running day and night. L. to R.: Miss M. Varley, operator in training; Mr. A. McElhenny, chargehand (process dept.); Miss C. Spain, who joined as assembler in Oct., 1941, and became operator in April of this year; Mrs. E. Allen, assembler; Mrs. E. Adlington, assembler. Not one has been on the job 12 months yet: a tribute to the training by Mr. McElhenny.



shelters, smoking and the use of torches are wrong, for such practices do much to spoil an otherwise complete black-out.

AVERAGE WORKING-HOURS GRAPH

Until now the only operatives who have seen an " Hourograph " are those working in one main aircraft factory, where three have been displayed for the last few weeks. Others will soon be put in each shop of the Aircraft Divn. which will give week by week the average hours worked by all who are employed therein. When moving about the factory the personnel of one shop will be able to see how they compare with another. This illustration shows the upward tendency for the three weeks until the photograph was taken, which was particularly interesting because a large number of those concerned had a week or two before pledged themselves to longer overtime. We have deleted the actual figures in case a copy of O.J. got to where it shouldn't.



A PETROL-SAVING TIP

Mr. Ken Clarke, chief metallurgist, writes to say that much of the great care taken to prevent propeller-blade corrosion is wasted when the blades are cleaned down with petrol, the result of which he himself has seen at service stations and even at our Aircraft Divn. Propellers leave the factory with a finish designed to meet the twin needs of camouflage and non-corrosion, and it is highly important that nothing be done to spoil it.

Mr. Clarke explains that the prepared surface of duralumin blades is subjected to light shot-blasting under controlled conditions, followed by an anodic oxidation treatment which not only serves as a corrosion preventative but also produces a surface which will absorb the dye subsequently applied. This dye to be ideal should be black, but as no really black colour is available, a very deep purple is used, which the shot-blast finish intensifies. Then follows a film of lanolin which enhances the corrosion-protective qualities of the whole scheme. If a solvent such as petrol is used for cleaning the blades, this finish is broken down and a dull grey-purple hue is the result. Not only is the whole camouflage effect altered, but the component is exposed to the corrosion which production shops have taken so much care to avoid. What should be done is to wipe the blades briskly with a rag soaked in lanolin. By this means the original finish will be preserved and the blades will not be left completely dry and susceptible to corroding atmospheric conditions.

Incidentally, the questions of corrosion control and chemical protective films are so important to the aircraft industry and so full of interest in themselves that it is being arranged to say more about them in a later issue.

TOOLS TO FINISH THE JOB

A very sound suggestion has been made to ease the shortage of general-purpose tools. Many operators have relatives in the Forces whose tools, at present idle, could help to swell production if sold to the company. For those wanting them when the war is won, it could be arranged for the owners to buy them back or a sort of lease-lend arrangement could be planned by which the company would pay a sum to compensate for wear and tear. Such a scheme would also keep in production the tools of those called up should they care to surrender them when leaving.

DIFFERENT LANGUAGES WITH ONE PURPOSE

The two lecture rooms in the new Propeller Repairs extension are now in full use, to which each week Technical Training Command sends service personnel for a maintenance course on the newest types of propellers. The instructors are drawn from fitters and service engineers within the Repair Organisation, in the selection of whom the question of whether a man can teach others is quite as important as technical skill. Each course ends with an examination after which the pupils return to their squadrons or ships competent to deal with minor repairs on the spot, leaving busy service engineers free to deal with bigger problems.

The varied uniforms and national shoulder flashes of those attending the course give a splendid impression of the forces fighting for freedom, for, in addition to the R.A.F., R.C.A.F., and the Fleet Air Arm, there are usually represented the Fighting French, Czechs, Norwegians, and Poles.

RALPH READER'S RETURN

Further to the note in O.J. No. 23 about the Aircraft Divn. R.A.F. Benevolent Fund and D.H. Troop Gift Fund week, we have been extremely fortunate in obtaining once again the valuable help of the famous R.A.F. Concert Party, Ralph Reader and his Gang. Notices were quickly circulated concerning this auspicious wind-up for the week's effort. Their concert will start at 2.30 p.m. on Sunday, Sept. 20. A row of 70 seats was sold within half an hour of this becoming known. Tickets (all guaranteed seats except those at 1s.) can be obtained from Miss Greenwood, Mrs. Davis, Miss Chapman, Messrs. Watkins, Dance, Lewis, Williams, Shepherd, Holloway, and W/Cr. Pike.

SUPERANNUATION FUND MOUNTING UP

On Tuesday, Sept. 8, at 5.40 p.m., the annual general meeting of the de Havilland Superannuation Fund was

MORE D.H. PERSONALITIES

Right : Mr. G. Nicholls, Foreman of a dispersed tool room of the Aircraft Division. Joined in 1935 *as toolmaker, and was promoted to his present position in* 1940. *A very able engineer with many improvements to tools and tooling to his credit ; his flair for spotting drawing errors prevents much wasted time and labour. Left : Mr. Charlie Ball joined us in* 1936 *and has been with Propeller Service since its inception. Noted for willingness, he has gone from labourer to polisher and later to semi-skilled fitter and to his present job of stripping damaged propellers. Below: Aircraft Divn. Erecting Shop Foremen's Meeting. L. to r. : Mr. B. Kedge joined in* 1932, *was promoted to supervision in* 1939 *and is now foreman of an assembly line ; Mr. R. C. Grinter, Superintendent (see O.J. No.* 21); *Mr. B. Palmer, now electrical foreman, joined in* 1936 *and reached supervision rank in* 1940 ; *Mr. E. F. Bacon, came to us in* 1932, *was on supervision staff in* 1937 *and is now foreman, engine and hydraulics ; Mr. F. Poll, has been with us since* 1929, *in* 1938 *he became charge-hand and is now foreman of an assembly line ; Mr. G. Davis joined* 10 *years ago, reached staff rating in* 1937 *and now is in charge of the fuselage section.*

held in the Club House at Engine and Propeller Division main works. As at 31/12/41 the sum standing to members' credit was £168,593, or £40,063 more than a year previously. £146,960 had been contributed by members, £62,045 by the Company, and £7,032 by interest on investments, making a total of £216,037, from which £47,443 had been paid out in refunds to members. Any member wishing to inspect the complete accounts for the year should ask Mr. H. Taylor (at Aircraft Divn.) or Mr. H. Wilson (at E. and P. Divn.).

Any member of the company over 21 years old is eligible to join and those wishing to do so should apply at Wages Offices during December for enrolment as from Jan. 1.

THOUGHT FOR THE FOURTH YEAR

The arrangements made in one of our main factories for broadcasting the Christian service at 11 a.m. on Sept. 3 were cancelled at the last minute because it was considered, from enquiries made by shop stewards, that opinion generally was against the 15-minute break. In another of our main works a 2-minutes' silence was observed instead. Elsewhere a 10-minute service was held in the canteen, preceding or following lunch hour. In one big D.H. factory this service, led by an R.A.F. Chaplain who is also a pilot, was very popular. At only a few of our depots was the national 11 a.m. service broadcast.

Opinions and practical considerations varied widely throughout our numerous units, but many workers remarked that 15 minutes' break in production really would lose a lot of man-hours. The heartening reflection on all this is that there is scarcely one among us who does not know, consciously or subconsciously, that the spiritual principle of co-operation is the world's only hope.

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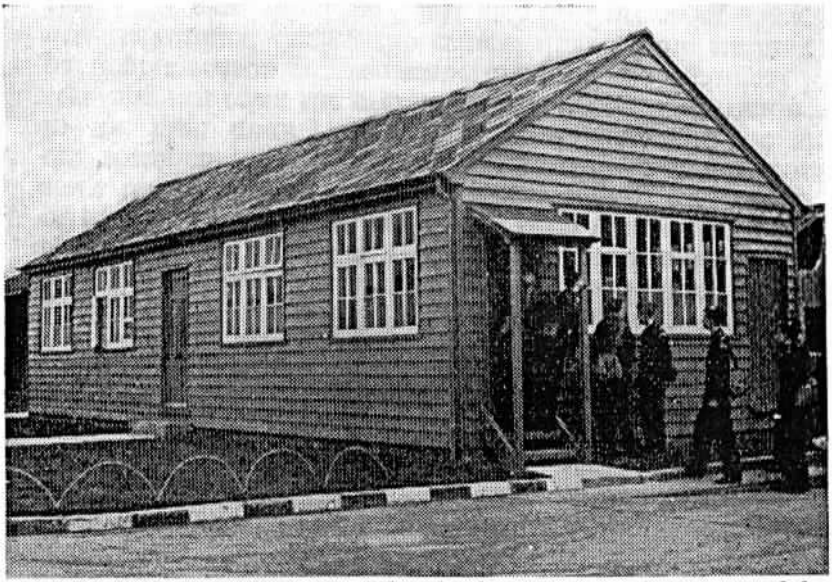
Private O. J. No. 25
Memorandum of information to all de Havilland personnel. 30/9/42

OUR TWENTY-SECOND BIRTHDAY

The de Havilland Aircraft Co., Ltd., was incorporated on September 25, 1920, 22 years ago, and began its activities at Stag Lane Aerodrome, Edgware, a few days later. The office building was a wooden shed, and it remained there and in use for 20 years, while the aerodrome disappeared beneath a town of factory buildings and a large housing estate. Then the shed was carefully taken to the company's new headquarters, where it stands unostentatiously and still in service to-day. It has the same old door and letter-box.

As they laid it out in 1920, the door opened onto a short



A Museum Piece Now : This building, passed unnoticed by thousands of us to-day, housed the entire administration of our company when it was formed in 1920.

passage. On the left was a large room (about 18 ft. by 10 ft.), occupied by Captain de Havilland and Mr. Walker; this was the Technical Department of the company. On the extreme right was Mr. Hearle's room. He was General Manager and in charge of production, though the only job actually on hand at the time was the completion of a couple of DH.18's for the Air Ministry. In a smaller room on the right sat Mr. St. Barbe, Business Manager, with a desk by the window so that he could get early news of any caller. In the same room, behind a more impressive roll-top desk, Mr. Nixon, the Secretary, controlled the company's finances. He drew the first wages cheque on October 8, 1920, and carefully counted out the money, £23 2s. 10½d. On the other side of the passage was the general office and waiting room, and there sat the general staff (one girl) with the office telephone.

Those five men who moved into the little shed, late in 1920, have guided the company's destinies ever since and are now directing its creation of war equipment. Eleven other members of the company at its inception are still with us: Mr. R. Hutchinson, Mr. T. Sayers, Mr. G. K. Carlson, Mr. H. Fidler, Mr. J. A. Speller, Mr. A. H. Morse, Mr. H. G. Reed, Mr. F. Cole, Mr. A. J. Brant, Mr. S. T. Webb, Miss J. Dunman; 14 more have been with the company 21 years. These veterans hold the de Havilland tradition in trust for the thousands who are following on.

The company started with little more than a faith in civil aviation. Business picked up gradually. Even in the second week the wages cheque had shot up to £109 14s. 1d. and it has grown fairly steadily since. To-day it is a tidy sum. From 1920 to the late 1930's progress was slow because of the conservative attitude towards civil aviation in this country, contrasted with Germany and America. De Havillands were not interested in war or war aeroplanes. We sent engineers out to the Dominions from 1928 onwards and gradually got a chain of overseas de Havilland assembly

and servicing depots going, all dedicated to the cause of civil flying. They are great manufacturing establishments to-day.

The present war is an interruption in the enduring mission of our company to develop aviation for the true service of mankind. The regrettable paradox is that the pace of technical advancement in these three years of war has far outstripped that of any peace-time progress (up to the present) and that it has taken air battles and night bombing, death and destruction to make the public believe at last in the safety of flying.

THE GREATEST DAY

On September 15, our company sent a telegram to the Air Minister, saluting the Royal Air Force on the second anniversary of the greatest day in the Battle of Britain and pledging our best endeavours towards maintaining the technical lead over the enemy, to match the personal superiority of the British air crews which has been constantly manifest since the war began. It is no empty pledge for, thanks to our technical workers, we have contributed much already to the high quality of R.A.F. equipment and we shall certainly not relax the pressure. Our Propeller Division has particular reason for remembering how the technical lead was maintained during the critical days of the summer of 1940. We gave them the " last inch " of propeller efficiency during that battle, and our aircraft and engine factories took on emergency work without relinquishing their research programmes. In two intervening years the struggle of the development engineers has intensified—and it is still up to de Havillands, in a number of significant respects.

BLACK DIAMONDS

The talk by Mr. Hearle on the urgent need to reduce fuel consumption was recorded for all de Havilland employees to hear. The matter is vital. Published figures show that coal production is falling short of requirements by more

than a million tons A MONTH. Mr. Hearle emphasized how grim would be the prospect if factories such as ours lacked power, for the consequences would indeed be dire. Before that would be permitted personal wants would have to be sacrificed completely. There is, therefore, urgent need for strict factory economy and domestic economy to the point of self-denial, but the company's aim is to ensure reduction with the least hardship to employees. The more each helps the more can be achieved.

The slogan competition announced by Mr. Hearle will help to keep the matter to the fore. By now most of those with a flair for turning a phrase will be ready to use the form printed on the back page, which when completed should be put into a suggestion box. If that is not available hand it into your time office. Please do it by Saturday Oct. 3, when the competition will close. The best entry from each factory will each be awarded £1. These prize winning slogans will be published in the next issue of *Our Job*, when everybody will be asked to put the figure 1 against that considered the best, the figure 2 against the next best, and 3 for third. The slogan with the most votes will receive a further £5, and the next two an extra £2.10.0 and £1 respectively.

FOUR-BLADERS CUT THEM DOWN

We are not telling the enemy what our programme is for four-blade propeller output, but the de Havilland four-blader is no secret. It has been described in this memorandum and as it means higher performance at altitude the need is obviously urgent. The German Air Force have been more wary than ever recently of each little improvement in R.A.F. equipment. These new things look like the whip to them. Everybody concerned with four-bladers can crack it hard in the next few weeks and months—and especially the hub shop. The machine shop extension and new inspection quarters will help considerably.

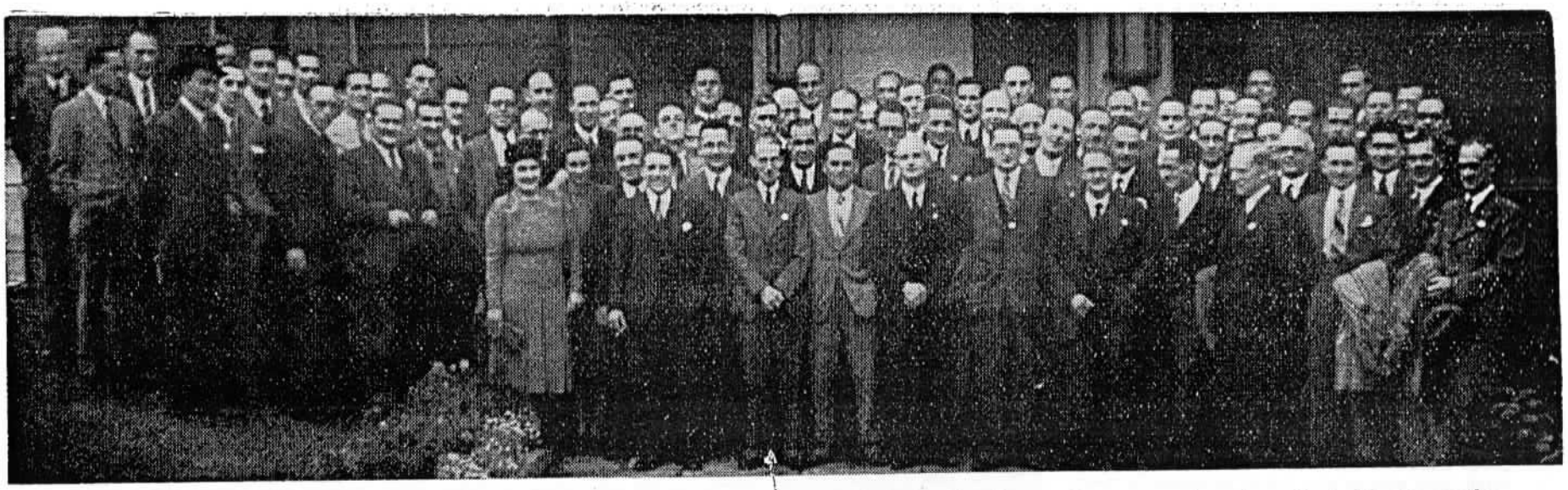
DO YOU KNOW THESE FACES?

More D.H. Personalities

Mr. F. C. Balaam, foreman at a dispersed fittings shop. Joined as a bench hand in 1924. He left the company in 1935 until April, 1936, when he returned to Stag Lane as assistant foreman. At the end of 1937 he came to the main aircraft factory to work on the 91, returning to the fittings shop in 1939. He took the first lot of fitters to this shop's present location, and was made foreman in 1941. He is seen with Miss V. M. Marshall who joined the company about a year ago.

Above : Mr. R. A. Morrison is the works superintendent of the shop now in full production of Constant-Speed Units (See O.J. No. 18, p. 6). He joined in 1937 as engine shop foreman, becoming night shift superintendent in 1939. He assumed his present post when the shop opened up eighteen months later.

Right : Mr. K. B. Gillmore, chief designer of propellers, joined as an apprentice in 1931, afterwards passing through the D.H. Technical School, into the aircraft drawing office. When the propeller division was formed in 1934 he was the first draughtsman to work there, as assistant to the engineering manager, who was then Mr. Thomas from Hamilton Standard Propellers. In 1940 Mr. Gillmore was appointed to his present post.



Visit to Engine & Propeller Division by Aircraft Senior Supervision Staff. The family reunion atmosphere is reflected in the smiles

A WAR-TIME SUNDAY

On September 20 some 70 members of the management and supervision staff of our Aircraft Division, accompanied by Mr. Hearle, were shown over several of the main Engine and Propeller Division production and repair depots. The visit was made interesting for them by Mr. Parkes and others who knew the processes in detail, including S/L Bell, Messrs. Nixon, Hallpike, Witt, Bence, Lineker, Jenkins, etc. Of what they saw unfortunately censorship precludes practically all mention, but new D.H. propellers and new D.H. engine developments and new repair methods were examined against the background of roaring production typical of an ordinary working Sunday. The large proportion of women in the machine shops and assembly shops was astonishing.

Men met again who had worked together for years in the old days and had since become separated in the wide dispersal of our activities. The original home of the company in Stag Lane was visited and people who remembered it in the nineteen twenties discovered their way about by almost hidden landmarks. A ramp is still visible that indicates the slope down which D.H.9As were wheeled from the assembly shop on to green fields that are now covered by houses.

With a word of welcome at tea-time Mr. Parkes spoke of the reasons that his Division has for taking pride in its work, the place of the Gipsy engine in the Empire Training Scheme and the place of the D.H. propeller in the front line of the R.A.F. Mr. Grinham expressed thanks for the " visitors " —though many of these felt that they were home among their own folk.

Mr. Hearle emphasised the need to go on building up the virility of our central engineering staffs steadily right through the war period. A happy thought which occurred to him when talking of the very roots of our company was that he could not remember any important division of opinion between the directors since they started at Stag Lane in 1920.

IMPORTANT NEWS

The present E. & P. Divn. Joint Production Committee is being dissolved by mutual agreement to make way for one with more representatives of the shops than before. Members representing the employees will be elected by ballot, and all adult organised workers with no less than two years continuous service at the factory are eligible for election. All workers over 21 can, and it is hoped will, vote for one of the nominees in their own department. Each nominee must have a proposer, a seconder and eight supporters. Nomination papers can be obtained from Mr. Foster and Mr. Benham in the engine and propeller time offices respectively. It is suggested that the committee consists of one representative from each of 9 shops, the names of which will be published by posters, and the management will nominate the same number or less to represent their side. Keep your eyes on the poster panels for more information.

SEPTEMBER GLADNESS

At the moment of going to press we are able to mention that a cheque for one hundred guineas, nett proceeds from our E. & P. Divisions' spring show "April Foolishness", was presented by Mr. A. S. Butler at a gathering last Thursday evening to Wing Commander John Cunningham, D.S.O., D.F.C., who accepted it on behalf of the R.A.F. Benevolent Fund. Group Capt. E. H. M. David, O.B.E., accompanied him.

GOODBYE AND GOOD LUCK

The good wishes of all of us go out to Mr. A. W. Hallpike, Production Control Superintendent, engines and propellers, who is leaving us this week to take up an important post elsewhere in industry.

REPAIR DEPOT BIGGER STILL

Mr. Hearle and Mr. Nixon spent some time last week at our main aircraft repair depot, their visit coinciding with the

completion of the office and canteen extensions. At the homely function which marked this fresh expansion, Mr. Hearle recalled that he had been present at the original opening of the canteen, and it would not surprise him to come down again later to inspect a still further enlargement. Almost unrecognisable to anyone whose last visit was a year or more ago, this depot has recently shown marked signs of consolidation in its shop layout, equipment and routine, and it is now undoubtedly one of the most valuable units under the Civilian Repair Organisation of the Royal Air Force.

AIRCRAFT DIVISION JOINT PRODUCTION - COMMITTEE

The fifth meeting was held on September 15. The minutes are displayed on the boards erected for the purpose in the relevant shops (see O.J. 19, page 6) and the only points reported here are those thought to be of general interest. Arising from the last meeting, it was agreed that suitably ruled lists of men receiving call-up or dereservation notices, submitted by shop stewards, would be kept up to date with all available information by Mr. O'Dell's office, and any man wishing to see how his own case stood could do so on application. Then came the agenda for the day. The shortage of canteen staff was stated to be the subject of many complaints. Miss Mould (canteen manageress), who was present for the discussion, said girls preferred to go into the factory because they believed they would be better paid, but in her view when meals and uniform were taken into consideration there was little in it. This aspect of it would be examined by Mr. Grinham. It was stated that there had been only a slight improvement in the numbers queuing for meals before time.

Shortages. The claim by Mr. Middleditch (Chief Progress) that these were becoming less and less day by day was generally accepted, and the position, he said, would continue to improve. He stated also that the situation would be better

still if everybody helped to prevent damage to details issued in good order.

Women's Employment. Mr. Sell (shop steward) expressed the view that sufficient care was not taken to see that women took over the men's jobs for which they had been trained; that when somebody could be spared, it was the woman who was transferred, often to a job for which she was untrained. Mr. Grinham accepted the point and said that if labour had to be transferred from one section to another, the supervision staff should remember it would be better to retain the female if sufficiently skilled and release the male for work on another job.

Nightshift : Shortage of Work. What were characterised as very good suggestions of Aircraft Divn. interest were made by Mr. Collins, who with Mr. Turner had been co-opted from the nightshift. Mr. Grinham dealt with them and pointed to the need for better co-operation between the nightshifts and dayshifts, particularly to enable the one to finish an operation uncompleted by the other. There was a tendency on the part of many to lock away unfinished operations which prevented the next shift from continuing them, which sometimes caused men to stand idle. The question was influenced by the bonus factor and it was hoped to devise a scheme to make time-allowance for the change-over period. Then followed the employers' proposals.

Sunday Work. It was ruled that operators shall come in only when asked, and those wanted would be warned by the previous Wednesday or Thursday. Sundays would be reserved for " high-spot " work and A.R.P. personnel. The nightshift rota would remain as before.

Pilfering. Some figures of losses were quoted which disclosed widespread theft of articles such as airdrills, electric drills, rivet guns, and the like. The numbers were far too large for it to be a satisfactory explanation that they were in locked drawers, forgotten. Mr. Grinham ruled that a missing tool must be reported at once to a chargehand for immediate investigation. It was suggested that shops should never be left unattended, and the regrettable but unavoidable need for increased searching at the gate was stressed.

MORE PERSONAL CONTRIBUTIONS

One hundred and twenty-nine bottles of blood were delivered from one of our principal aircraft factories on September 18 for military and civil hospitals at home, and some for drying for export to Forces in the Middle East. To take blood from anything over 100 donors is considered a good day's work for the small team of doctors and nurses whose daily job this is.

Some of our engine and propeller depots and our chief aircraft repair depots have topped the 100 figure, and only once before has this factory reached 129. This represents over 10 gallons of blood and may be expected to save 60 or 80 lives, mostly of bomber crews.

A VETERAN IN AUSTRALIA

Some of us will perhaps remember one of the early Dragons, VH–URE, made at Stag Lane about 1933. It has long been in service as an air ambulance in New South Wales and we have just heard that during 1941 it travelled 36,405 miles on 75 urgent flights, taking a doctor and equipment to attend cases of serious illness and accident in remote parts of the Australian back blocks. Public subscriptions from widely scattered settlements contribute about £3,000 a year for this flying doctor service, which operates over 400,000 square miles. An interesting feature is a network of small radio stations for which the transmitting power is provided by a bicycle pedal arrangement. War or no war, this essential service is maintained and Gipsy engine dependability is one of its keystones.

ENTRY FORM
"SAVE FUEL" SLOGAN COMPETITION

1st PRIZE £5.
2nd PRIZE £2.10.0.
3rd PRIZE £1.

CLOSING DATE OCTOBER 3, 1942

Name and Initials.....
(In Block Capitals)

Shop or Dept.....

No.....

Slogan .....

.....

.....

.....

.....

Please put the completed page in a suggestions box or hand into your time office. If you wish to enter more than one slogan, write on plain paper and pin to the form.

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PRELIMINARY SLOGAN RESULTS

The number of slogans received (many hundreds) well shows the general interest taken in Mr. Hearle's save fuel talk. For the preliminary prize of £1 for the best from each factory the judging was left to the unit itself—where practicable by a small panel of operators. The fact that each factory was judged locally may cause disappointment, for some from one unit will feel their entry to be better than one from another unit, and others will say their entry was the same as a prize winner elsewhere, but that all will take it in good part we have no doubt. The main thing is to arouse everybody to the compelling need to avoid waste of coal and its products.

The slogans chosen are printed below, and continued on the back page. To find the three best in popular estimation, everybody is asked to put the figures 1, 2 and 3 in the considered order of merit, and to put the page into the nearest suggestion box or time office by Sunday, Oct. 18. To ensure unbiassed judgment we are not at this stage saying where each has come from—that will come later.

Inter-Factory Winning Slogans

..... Give our ——— extra bite
By saving power, heat and light.

..... Fuel save and few will suffer.

..... Save light to increase our might.

..... Remember even if it's cold,
Black diamonds are worth more than gold.

..... To hasten peace saviour coal.

..... Target for to-night : save power, heat and light.

..... Save light and fuel and give Hitler his gruel.

..... Save fuel—make it hotter for Hitler.

(*Continued on page Eight*)

ELECTION OF E. & P. JOINT PRODUCTION COMMITTEE

The previously announced decision to have one representative from each of nine groups (See O.J. No. 25, p. 8) has been changed to enable the biggest shop in the factory to have two representatives, a more equitable arrangement. This brings the number representing the employees to 10, and no more than that can represent the employers. To-day (Thursday, Oct. 15) by 7 p.m. is the latest by which nominations can be handed to Mr. Foster and Mr. Benham in the engine and propeller time offices respectively. Polling will be on Thursday, Oct. 22, when ballot papers will be included in the wages envelopes of all concerned. It is important to remember that nothing should be written on them except a X against the chosen name; anything else will cause the paper to be rejected and the vote lost.

RECORD REPAIR OUTPUT

Our main aircraft repair depot achieved a record output in the last week of September. In a message to his superintendents and foremen, Mr. Marshall, manager of the depot, recognised the efforts which the depot as a whole is making to build up output without increasing the number of productive or ancillary workers. At this depot (see O.J. No. 9) the week's work is measured by points and the target is estimated on this basis. In the week in question the record was achieved not as a " roll-up " output, but as an increase on two good preceding weeks. Consolidation of factory and office expansions is the keynote at present, and what has been achieved by exceptionally long hours on the part of many individuals should become possible soon with reasonable overtime such as can be steadily maintained.

WAR SAVINGS GROUPS

Recently meetings of team captains of the war savings groups have taken place to decide on future plans for still further increasing the already good results achieved, and here are their decisions briefly stated. No. 2 (Aircraft Divn.) Savings Group: The team captains concerned agreed in future to stop the award of free certificates to the captains of the 6 winning teams. The 6 thus gained to be added to the 6 already allotted to the teams showing the best improvement each month. Now there will be two categories of awards—for the three teams at the top of the league, 3 prizes of 6, 4 and 2 certificates respectively; for the 6 teams showing the best improvements 1 prize of 3 certificates, 4 of 2 certificates and 1 of 1 certificate. No. 3 (E. & P. Divn.) decided differently. The prize certificates for the 1st, 2nd and 3rd highest teams each month will be halved to 3, 2 and 1 respectively. The certificates thus in hand will be given in the same proportion to the team showing the 1st, 2nd and 3rd highest increase in average contribution per head each month. They have not changed the awards of 3, 2 and 1 certificates for the teams with the highest improvement over previous month. No. 4 (Aircraft Repair Depot) are about to be an entirely independent group instead of forming part of No. 2. It is expected to include details in our next issue.

ABSENCE FROM WORK

One or two points of general interest were noted at a Nightshift Attendance Committee Meeting (E. & P. Divn., Sept. 30). There is a widespread belief that for less than a 3-day period of absence not only is a doctor's certificate not wanted, but no explanation need be given. On the contrary, a reason should always be proffered, which if thought adequate will avoid an appearance before the Committee, and wasted time will be prevented. Another point was that it is not enough for an operator to say on Monday that he will not do overtime on succeeding nights because he hasn't enough to do, for a day or two later something urgent may turn up after 5 o'clock.

The meeting seemed to deal sympathetically with cases needing sympathy and firmly where firmness was required.

A Respite from the slide rule. Miss Hawking seems not to mind being the one lady in this concentration of technical talent.

THRUST EXPERTS EMERGE

Following the visit of E. & P. Divn. production supervisors to one of the main aircraft factories of the company late in August, a similar visit was arranged on Oct. 3 for about 65 members of the E. & P. Divn. design and engineering departments. Many of these technicians, absorbed in the intricacies of power-plant prototypes, had not for months been among the noisy detail shops of airframe manufacture or the echoing avenues of assembly lines, and some had not before seen the current aircraft on test. Although the wide dispersal of our manufacture prevented them from witnessing every component operation and deprived them of really impressive assembly vistas, there was a good deal of novelty in production methods to interest them. And, of course,

the production-test evolutions (and their audible vortices) struck a new note in low-flying technique.

At lunch Mr. Butler, our Chairman, said that so far in this war the emphasis had been on production rather than development, but that he was glad to detect a stronger inclination now towards technical advances. He considered this auspicious and pressed the need for making all ranks of all departments in the Ministry enthusiastic for development at the present stage in the struggle. Our company's policy, he said, is to strengthen our research and design departments, and we are certain that it is the right policy. Major Halford thanked him and Mr. Hearle for arranging this visit, and congratulated the aircraft engineers on the results of their labours.

DO YOU KNOW THESE FACES?

Close-ups of a few of those who visited the main aircraft factory the other day from the E. & P. Engineering Department.

Above—
Mr. John L. P. Brodie, Manager of the dept., of which Major F. B. Halford is Chief. When in 1923 Mr. Brodie joined Major Halford, it renewed a working association of 1916. He has been concerned with design and experimental work for very many years, which is about all that we may say these days.

Right—
Mr. E. S. Moult, chief engineer. When he joined in 1927 the staff numbered four. He worked then on the development of the engine which was to become known as the Gipsy One. Afterwards in charge of calculation dept., and then chief technical assistant. Was appointed to his present post last year.

Left—
Mr. R. H. Warde, chief draughtsman, propeller division of the dept. After experience in heavy engineering he joined us in 1932 as fitter improver in the engine shop, working on Gipsy Major and Gipsy VI engines. At the very beginning of the propeller division in 1934 he joined it as draughtsman.

THE PROBLEM OF THE ACCIDENT-PRONE

The Medical Research Council issued the other day a report on " The Personal Factor in Accidents," particularly valuable in these days when every lost man-hour helps the enemy. Accidents at work are of two kinds : those due to the character of the work and those due to the character of the worker. When danger is due to the nature of the job, safety precautions can be devised, and are indeed required by the law of the country, which will considerably reduce if not altogether eliminate risk. Our records show that some operatives require attention soon after joining the factory, due probably to inexperience, and others require first aid only after being on the job for many months perhaps because they have become over-confident and careless.

Age and experience, speed of the work, fatigue and proper supervision all have a bearing on liability to accident, but there are some who as they go about their work are more liable than others to do, or refrain from doing, those little acts which make the difference between safety and danger. The First Aid Dept. works closely with the Labour Dept. to try to place operatives in jobs best suited to their temperamental and physical capabilities, and when they are discovered, accident-prone individuals are transferred to work with less risk of injury. It would help if more personal interest in new operatives were taken by their colleagues. Adequate instructions should be given by supervision in such things as the use of protective clothing (such as caps to keep control of women's hair, and suitable footwear), protective creams, the value of cleanliness, the handling of work and work tools ; and all operatives should be well-versed in factory routine and methods.

DIGGING FOR OURSELVES

We are now growing 75 per cent. of the vegetables needed for the day and night shift meals served in our Aircraft Divn. canteens. Think what this saves in transportation.

Winning Slogans—continued

..... You can help to beat the Hun
With fuel economy as your gun.

..... Fools and fuel are soon parted.

..... Turn off the heaters and build more.

..... Don't be LIGHT hearted, be light conscious.

..... A moment's thought, a little less haste ;
Save tons of coal going waste.

..... Save your coal and gas and heating
And give the Hun his greatest beating.

..... Brighten our chance by burning less.

..... Endure 60, procure 98.

..... Coal and light saved means more aircraft made.

..... Mein Kampf can be defeated by mine economy

..... " A few saved many " ; many can save " fuel."

..... Coal less ; goal less.

..... Save all the souls you can by saving all the coals you can.

..... Coal is your saviour
Save-yer (saviour) coal.

D.H. FIRE BRIGADE INTER-TEAM COMPETITION

Regular and auxiliary fire-brigade teams competed recently in the finals for the Inter-Group (South) Challenge Cups. The one for regular teams was won by the S.A.G. Aircraft Factory, led by Mr. J. J. R. Burn, followed by the Aircraft Divn. and E. & P. Divn. teams. Times were : 1 min. 11 4/5 secs., 1 min. 13 2/5 secs., and 1 min. 14 1/5 secs. The E. & P. Divn. team were first in the Auxiliary Section, with Mr. A. J. Airey in charge. Next were the Aircraft Divn. with S.A.G. third. The sequence of times was : 1 min. 16 4/5 secs., 1 min. 22 2/5 secs., and 1 min. 25 1/5 secs. At the end Mr. A. S. Butler presented the cups.

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Private O. J. No. 27
Memorandum of information to all de Havilland personnel. 6/11/42

DE HAVILLAND ATTACKS ON ALL FRONTS

The first issue of this memorandum appeared a year ago to-day. We then expressed the hope that its distribution would help to keep all of us informed about the company's effort as a whole and in touch with one another throughout the broadly dispersed factories and depots of our different divisions. It has not been easy to fulfil this function without telling the enemy things which it isn't good for him to know, and sometimes we have had to leave our own people to read between the lines.

The sole purpose of O.J. is to promote productive efficiency, and if its diminutive pages can be more effectively used than hitherto the editor is the servant of our common cause.

Many good bombers have flown down the Rhine in these twelve months. Many severe blows have been struck at the enemy by our own company in our own ways. And our ways are several for our activities feed many fronts. Furthermore, our products are potent weapons, indispensable to the ceaseless bombing, fighting and reconnaissance work of the R.A.F., and to that wonderfully organised training programme which enables crews of youngsters to bring bombers across the Atlantic by way of their first major cross-country flight !

The public announcement of the Mosquito has been gratifying to all of us, and the acclamation it has received from authoritative commentators in newspaper and radio has expressed without exaggeration the general feelings of the R.A.F. We may take heart also that it has expressed in converse the forebodings of the enemy at the daily assaults of this hard-hitting streak of lightning upon the exact centres of his effort.

The British press have been quick to realise the significance

of the wood construction of the Mosquito in permitting widely dispersed manufacture. The Mosquito draws little upon the treasured supplies of aluminium sheets and extrusions, forgings and high-grade tubing, or upon the manpower in the skilled metal crafts. Besides the scores of de Havilland production centres we have literally hundreds of sub-contractors at work on Mosquitoes and their components. And we are glad to have the enemy know this. Let him attack this production if he can. Let him realise that the Mosquito is being produced in Canada by our own company—with another stout battery of sub-contractors. Let him know that our propellers are made by our own Australian company as well as by the American and Canadian plants ; that the Rolls-Royce engines are made in America as well as here, that our Indian establishment continues to build up its production of aeronautical supplies, that the little Gipsies are pouring out of Australian shops, and so on throughout the whole parts schedule of not only the Mosquito but many other fine battle planes.

At no D.H. factory can we see the full vista of our output of aircraft, propellers, engines, components. At no D.H. factory can the enemy crush out a vital flow ; de Havilland supplies pour forth from four continents strategically dispersed about the axis of the plunderers and de Havilland's blow will be among the heaviest contributing to their downfall.

WHAT SAY THE MEN ?

A number of women operators met on Friday, October 23, at one of the main factories, when Mrs. Margaret Jones appealed to all her sex to strive their hardest to increase production until the enemy is overthrown. The chief point debated at the short discussion which followed was the disinclination on the part of menfolk to show women how to go about their jobs, although things are better than they were. It was also asked why women trained for one job should be detailed for another, a point ventilated at a recent Joint Production Committee Meeting (see O.J. No. 25, p. 10).

E. & P. JOINT PRODUCTION COMMITTEE ELECTION

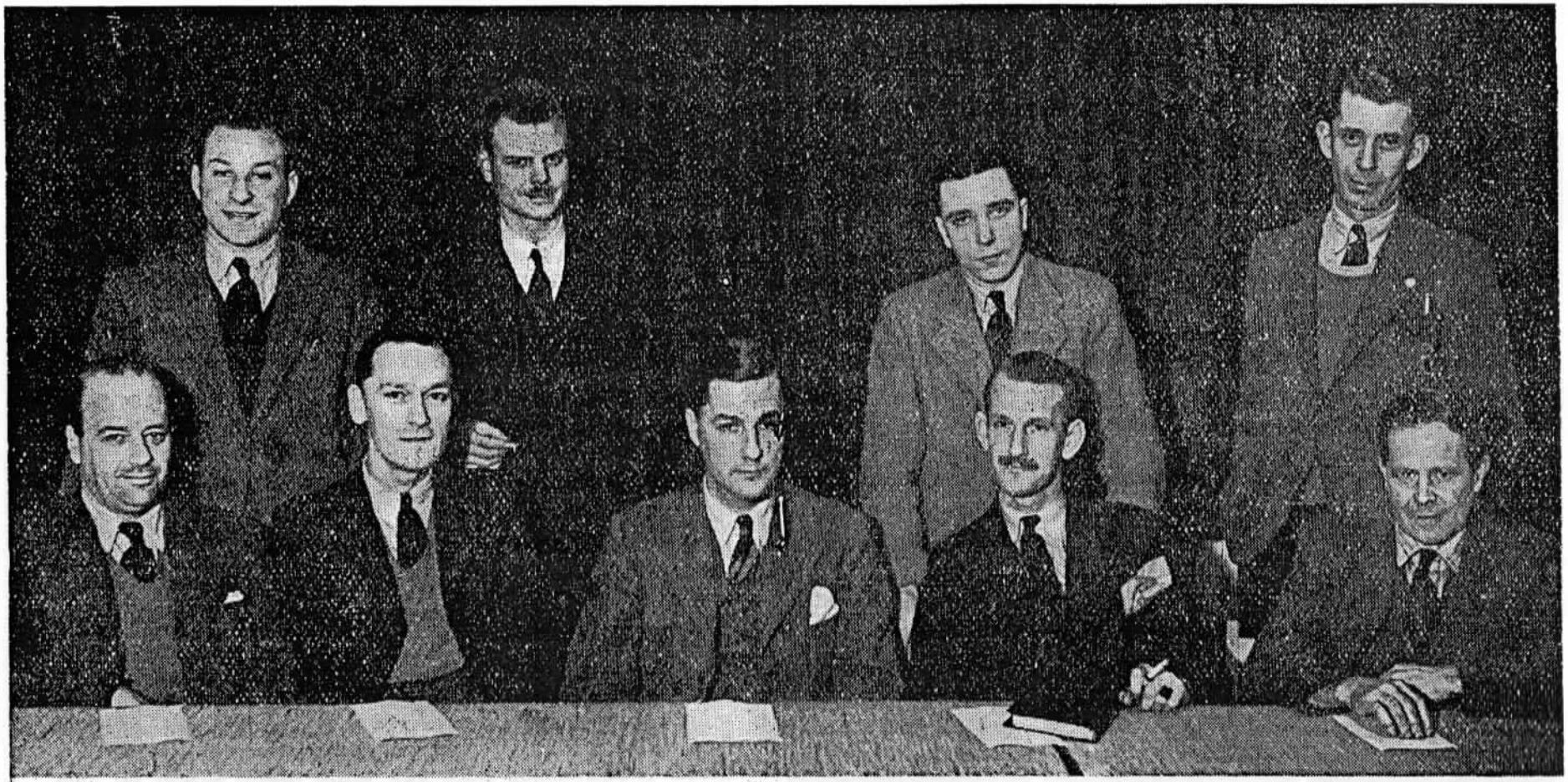
The first meeting of this committee on October 29 will be reported in our next issue. The photograph below was taken during the count on the day following the ballot, which took place on October 22. There were 25 nominated candidates for 10 seats, one of whom, Mr. A. W. Shepherd (propeller assembly) was returned unopposed. The other successful candidates were : Mr. R. Bass (engine machine shop), Mr. F. H. Squibb (engine assembly), Mr. J. Smart (engine inspection), Mr. G. McKay (tool room), Messrs. W. T. Rumble and E. E. Powell (propeller machine shop, two representatives), Mr. E. Purcell (propeller inspection), Mr. C. E. Rogers (propeller blade shop) and Mr. W. R. J. Wright (plant dept.). More than 67 per cent. of those eligible voted, and there were 17 spoiled ballot forms.

R. Gold (*C.S.U. Repairs*).

F. Emery (*Assistant Chie Inspector, Repair Div ision*).

W. A. Woods (*Assistant Works Superintendent*).

L. Levett (*Joint Secretary*).



J. L. Rodrigues (*Blade Repairer*).

W. J. Thompson (*Inspector*).

C. R. Burgess (*Chairman*), (*Controller o Repairs, Spares and Maintenance, D.H. Propellers*).

E. A. Walter (*Works Superintendent*).

T. Wrigley (*Blade Repairer*).

Propeller Service and Repair Joint Production Consultative and Advisory Committtee.

AIRCRAFT DIVN. JOINT PRODUCTION COMMITTEE

The main points raised on October 22 were: waiting time at the dispersed machine shop, which will be overcome by the transfer of work to create a reserve to fall back on. Wing shop production difficulties brought out some strong points, which a methods man would examine on the spot. It was explained that if all queries were entered in the proper way on works query notes, the long delays about which complaints were made would not occur. Fitting shop lighting was debated, and criticism of dirty windows disclosed that they were covered by an anti-glint compound applied for security reasons. If those reasons were still compelling, more lights would be installed, in spite of the fuel economy drive, for production must not suffer. Contrary to general belief, a separate switch for individual lights is impracticable mainly on the score of materials and expense. Sub-contractors jigs were next discussed, for the feeling was that parts arrived not up to drawing. Mr. Grinham described existing inspection safeguards, and all things considered it was decided the suggestion to instal master jigs was unnecessary. Points made by Mr. Gardner on problems of fuel economy will be given publicity elsewhere.

A SUNDAY VISIT

A party from the Aircraft Divn. dispersed wood detail and coppersmiths shops, about 70 in all, visited one of the main assembly lines on October 18. A view of the finished job in the air is of high interest to those turning out the many hundreds of small but vitally important parts, a long way from the points of assembly. Transport difficulties prevent many we try to arrange, but where public travelling facilities exist inter-factory visits are warmly welcomed.

SAVE SCRAP SORTING

The Aircraft Division salvage officer, Mr. Arkell, asks that all scrap should be placed in the correct bins, please.

Mr. J. Weedy, Assistant Works Manager at S.A.G. Main Assembly.

Capt. F. A. Walker, General Works Manager for the Group.

Mr. H. J. Bagnelle joined Stag Lane in 1933, now Works Supt., S.A.G. Sheet Metal Shop.

Mr. A. Edworthy, an old D.H. hand, now Works Supt., S.A.G. Fuselage Shop.

DO YOU KNOW the S.A.G. Production Managers?

More D. H. Personalities

Mr. S. G. Statham, also an old D.H. hand now Works Supt., S.A.G. Wing Shop.

KEEP IT UP

In judging the results of the inter-factory Save Fuel Slogan Competition, each first selection counted 3, each second selection counted 2, and the third counted 1. The three to poll the most points were: "You can help to beat the Hun, with fuel economy as your gun" (210); "Target for to-night: Save power, heat and light" (203); and "Save your coal and gas and heating and give the Hun his greatest beating" (189). Mr. L. Nolan, No. 9150 aircraft dispersed fitting shop, therefore gains the first prize of £5. Mr. T. Polston, No. 9543 aircraft dispersed sheet metal shop, gets second prize of £2 10s., and Mr. S. Dolomore, S.A.G. sheet metal shop, gets the third prize of £1.

We are told by the maintenance departments of each division that they are getting active fuel-saving co-operation from almost everybody with highly encouraging results. Since September 12 an aircraft divn. factory has saved 210 tons of coal, and two visiting Ministry of Fuel officials complimented the factory, through Mr. Gardner, on what was being done. Incidentally, at the last Joint Production Committee Meeting, the impressive point was made by Mr. Gardner that to raise the temperature of the factory concerned by 1 degree took more than half a ton of coal a day.

The E. & P. main factory has a weekly committee to examine means to secure fuel economy and electricity peak-load has already been reduced. A note from them beginning DO YOU KNOW says: the average medium machine tool is powered by a 5 h.p. motor, to generate the electricity for which takes 4.8 lb. of coal per hour. Therefore for every minute that a dozen machines are left running unnecessarily the energy from almost a pound of coal is wasted, by no means an infrequent occurrence. So, switch off your machine when you leave it.

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WHAT AMERICA THINKS

The following recent article from the *New York Times* has been sent us by a noted American engineer who visited our factories not long ago. He thinks that it talks from the heart of the great multitude of the American people. Maybe it will cheer up some of us who are working long hours and facing long journeys in the blackout night and morning:

Every war has its disillusionments, even for those who are to be the victors—sometimes, above all for them. Statesmen make mistakes. Generals and admirals miss opportunities. In parliamentary countries legislators squabble and waste time. War production never comes up to hopes. Censors are pigheaded. The spectre of what might have been pursues the democracies in this war, and we can be sure, though the facts are more securely hidden, the autocracies, too.

Britain is no exception. How easy it is, with a little help from Axis sources, to find the flaws and rust in her armour! As easy, almost, as to find the defects in our own. But there will never be any disillusionment as to what was happening in the skies over England, and in England's streets, cellars, subways, shelters, shops, factories, on England's docks, farms, railways, in the hearts and minds of English people, two years ago this week. If this war were to be lost, if a hundred years of the beast were to begin to-morrow, that week of 1940 would still be remembered, and the memory would still make certain that some day freedom would be regained.

The Battle of Britain in September, 1940, was a great victory. It has grown greater in perspective. It was not a victory for the British Empire, the House of Lords, the British way of talking our common language, the old school

tie or the British habit of being reserved with strangers. It was a victory, first, for the British people—all of them, those of Norman ancestry and the men of the docks, for a King as a man unafraid, but also for sergeant pilots, tramway conductors, women serving beer in pubs and women in uniform running ambulances, for common, ordinary people like the people of our own city, who didn't know how they would take it but did take it.

If the pilots and gunners and people of Britain, the Lords and the commons and the people living in slums, the rich and the sick and the old and the dispossessed, hadn't stood up to the Nazi assault two years ago ; if they hadn't cursed or laughed at the Nazi raiders, according to their natures ; if any considerable number of them for one moment had seriously considered surrender, not only Britain would have been lost : the world of civilized men would have been lost, for untold years. New York City wouldn't have had practice blackouts—it would have had real ones. Times Square would look like Rotterdam and Coventry. The material which makes up this newspaper would be written, put into type and printed under fire. Or it would not be written at all, because the terms of peace with Nazi Germany would prohibit it.

France fell but Britain stood. This is what happened in 1940. The people of Britain held until reinforcements could be brought up. They held as Stalingrad has held. This is no miracle of social systems. It is a miracle of human nature, which asserts its dignity against the forces of hell.

Because Britain held in 1940 Russia can now hold, China fights on, guerillas in the Balkans die with their hands on Nazi throats but their places are taken by others. Because Britain held, mankind can now hope.

This week we can well bow our heads in memory of the dead pilots and the dead civilians of Britain. We can well hold out our hands to the living, who pray with us, who march with us, who will stand with us on the day of victory.

A FINE ACHIEVEMENT

The letter below will hearten all in the D.H. organisation too widely dispersed as it is for everybody to appreciate the growing strides of output. The pity is that the thousands of operators in sub-contractors' shops cannot also read it although they are just as much concerned. Targets were reached at assembly points although weather prevented test-flight programme.

MINISTRY OF AIRCRAFT PRODUCTION,

2nd November 1942

Dear Mr Hearle.

October has been the best month during the whole war for production of aircraft.

In this great effort all the de Havilland factories have played their part to the full.

Counting those awaiting flight test, and it was horrible flying weather last week, the month's programme was achieved.

I should like to thank both the Management and all who work in the factory for this achievement.

Your programme for this month is a higher one. The Mosquito has made its name. I am sure I can rely on you all to make it in ever growing quantity.

Yours sincerely

J. J. Llewellin

F. T. Hearle, Esq.,
The de Havilland Aircraft Company.

E. & P. Newly Elected Joint Production Committee

Mr. G. McKay (*Toolroom*), was present after the photograph was taken. Mr. A. W. Shepherd was unavoidably absent.

E. & P. J.P.C. MEETING

The first meeting of the new E. & P. Joint Production Committee was held on October 30. Mr. H. J. Nixon welcomed the members and asked that all criticism should be constructive, with increased production as its aim. The general ground of future output was discussed which cannot be reported here. Then followed discussion on difficulties of certain fixtures, inequalities of labour on day and night shifts, and the part-time employment of women, remedies for which are being sought. Micrometers would be regrouped to make them more accessible to all; and in reply to a criticism of jig & tool storage it was stated alterations which are in progress would ease the situation. A point made by Mr. Nixon regarding the quality of tool room work available was that the first duty of a factory tool room was to promote production requirements. Future meetings will be on the last Friday of each month.

SAVINGS LEAGUE CHANGE

No. 4 (Aircraft Repair Depot) War Savings Group are now separate from the Aircraft Division Group. Nine new teams have been formed, and the Directors have authorised 6 certificates to be given each month as prizes. The membership percentage of each team as it stood on October 15 has been published, when No. 3 team (No. 3 hangar, capt. Mr. Poore) was top with 86.6 per cent.; No. 2 team (No. 2 hangar, capt. Mr. Davey) was second with 70.3 per cent., and No. 5 team (office staff, capt. Mr. Higgins) was third with 67.5 per cent. On the 15th of each subsequent month positions will be reviewed and the following prizes awarded: TOP PLACE TEAMS, 1st prize 2 free certificates, 2nd prize 1 free certificate; BEST IMPROVEMENT TEAMS, 1st prize 2 free certificates, 2nd prize 1 free certificate. The depot is to be complimented on the fact that more than 60 per cent. of its employees are already savings members.

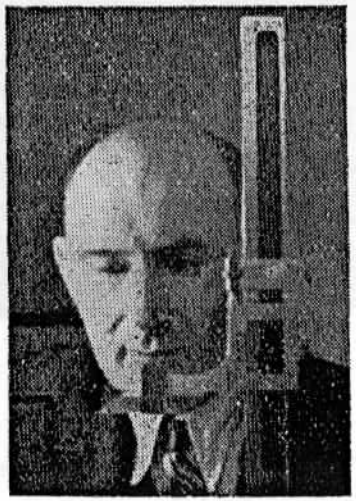
MORE D. H. PERSONALITIES

Miss Connie Barrett joined us not long before the war, as fabric hand, and is now liaison officer between aircraft divn. assembly, progress and stores. The smile comes from being section leader of the Keep Fit Health and Beauty Classes.

Mr. C. Goodfellow, chargehand of an E. & P. constant speed assembly shop. He trains most of the women who come there and has been responsible for several devices for aiding the semi-skilled in their work.

Centre above—
Mr. G. K. Carlson who had with few others a special interest in our recent 22nd birthday. He joined the Company in 1920 as draughtsman at Stag Lane, becoming chief draughtsman in 1930. Later on he was in charge of a department dealing with our customers' special requirements, and took over his present post of chief inspector, Aircraft Divn., in 1938.

Right—
Mr. S. Gold, at a dispersed tool room, Aircraft Divn. For five years from 1932 was one of our tool makers, and from 1937 onwards has held the post of tool inspector. The tools room Superintendent says anything which gets by him can be relied upon as being "spot on."



A SMALL EFFORT WITH LARGE RESULTS.

Our chief education officer, Mr. Saul-Brown, says the value of expert classroom guidance in one's daily job is so generally recognised that many of the evening classes are full to overflowing. When more accommodation is found certain classes will be duplicated. A demand for classes from any department will be met if numbers warrant it ; in fact, those requested by the sheet metal workers are already in being.

D.H. (E. & P. DIVN.) ORCHESTRAL SOCIETY

At the recent Annual General Meeting among the officers elected for the ensuing year were Mr. T. C. Jenkins (Conductor), Mr. K. Bargus (Secretary), and Mr. H. Goldstraw (Treasurer). The orchestra played at 17 concerts in the year just ended and raised more than £300 for charities.

PLEASURE PLUS PROFIT

At the New Club on Wednesday, November 18, at 7 p.m., Major the Viscount Plumer, M.C., will be present at a film and variety show arranged by the War Savings League, Aircraft Divn. Tickets are 6d. each and the proceeds will be converted into savings certificates, which will be drawn for during the evening. Lord Plumer will award them to the lucky winners.

WARM CONGRATULATIONS

During the dinner break on November 3 and 5 Mr. T. H. Price and those who assisted him gave a fine concert in the canteen at an S.A.G. aircraft assembly point, to launch a social and sports club, and raise funds by a collection for a piano. The £17 collected included an anonymous gift of £5. With such initiative and talent on the spot we predict complete success for their aims.

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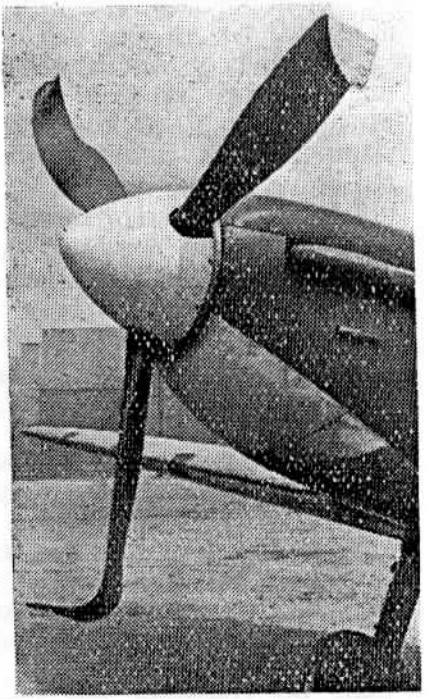
Private O. J. No, 29
Memorandum o information to all de Havilland personnel. 25/11/42

FLAK SELDOM STOPS THESE D.H. PROPS

Another de Havilland propeller repair depot is being established in Australia, where our propellers are already being manufactured and repaired at de Havilland plants mainly in the Sydney district. The new repair base will be in Queensland, the large State covering the north-eastern part of Australia, significantly nearer to the New Guinea and Solomons battle fronts.

In Britain, America and elsewhere near the theatres of war big depots deal with the overhaul and repair of Hamilton and de Havilland propellers by the thousand—by the ten thousand, in fact.



Dural blades can take it, and go on working This aircraft climbed away, flew on and landed safely.

The great feature of our dural-bladed propellers (apart from the superiority of their thinner blade sections from the performance point of view, and the ease and cheapness of their manufacture, their high precision of form and interchangeability) lies in the sheer serviceability of dural as a blade material. When hit by flak, or when they strike the sea or rocks as they have done in the throes of war-time

flying, the tough and ductile dural blades do not shatter. They take the punishment but go on doing their job, and many an aircraft, many a crew, has been saved for this reason. Just look at the accompanying Spitfire picture. And everybody knows how in crash landings the dural blades bend under and, acting as skis, take much of the weight of the whole aircraft as it slides along the ground, so localising and minimising damage to airframe and engines (not to mention crews!). For these excellent reasons many repair depots are in full swing straightening out blades (with heat treatment if very badly bent) and polishing off damaged surfaces. They go back into service five or six times after repeated repairs. Even bullet holes just have their edges polished and do not qualify blades for discharge from the R.A.F.

FACTORY MUSIC

Invitations for opinions and suggestions concerning music put over in our factories are resulting in a satisfactory sifting of our library of gramophone records to meet the several requirements, but it is entertaining to pick examples at random from comments that have been sent in. Concerning a trial programme of light classical music at an aircraft shop on October 19, one person writes : " Programme much preferable to the weary reiteration of jazz tunes usually inflicted on us," while another says " Terrible ! What we want is music. Give us swing." The trouble of being unable to hear the music in certain shops is a difficult one.

SWING OUT THE STINGERS

Slogans are wanted for posters, and the like, to be displayed in numerous factories of Mosquito sub-contractors. Any suggestions (in the suggestion boxes) will be welcome. A poor example is " Mosquitoes are biting where it hurts most. Short slogans with more bite are needed.

EVERY LITTLE HELPS

Up to October 22 the sum raised for the R.A.F. Benevolent Fund by the sale of reproductions of Frank Wootton's oil paintings of aircraft was £2,099 9s. 10d. It will be remembered that these paintings depicted a few of the aircraft types equipped with de Havilland v.p. propellers, and they are among the finest studies of their kind ever executed. Sales arrangements have been conducted on our behalf by Samson Clark & Co., Ltd., and stocks are not yet exhausted. Lord Riverdale, Chairman of the R.A.F.B.F. Appeals Committee, in a letter to our own Chairman, Mr. Butler, thanking our company for their further contribution says that " particularly in view of the recent large-scale offensive operations undertaken by the Royal Air Force. which must, of necessity, mean that the claims upon our Fund are greater than they have ever been and must continue to increase, such help as you have afforded us is more than ever welcome."

Mention should also be made of the special drive during the week September 12/20 by the Aircraft Divn. Sports Club in aid of the same fund and their Troops Gift Fund. By one means or another £788 was raised, so that each fund benefited to the extent of £394. Good work, indeed.

And now comes two more ways to help the R.A.F.B.F. and at the same time acquire interesting souvenirs. For 4s. you can buy the recorded version of Mr. Martin Sharp's talk on the 22nd birthday of the company, and for 5s. you can get an unsigned copy of the colourful picture " Briefing," by Frank O. Salisbury, depicting bomber crews getting the " gen " before leaving to smite the enemy where it hurts most. A signed copy can be had for 10s. These are on view and can be ordered at the library of the Aircraft Divn. and at the office of the general secretary of the E. & P. Divn. Sports Club ; profits on the sale of the recording and all the proceeds of the picture sales (printed at the expense of two anonymous gentlemen) will go to the Fund.

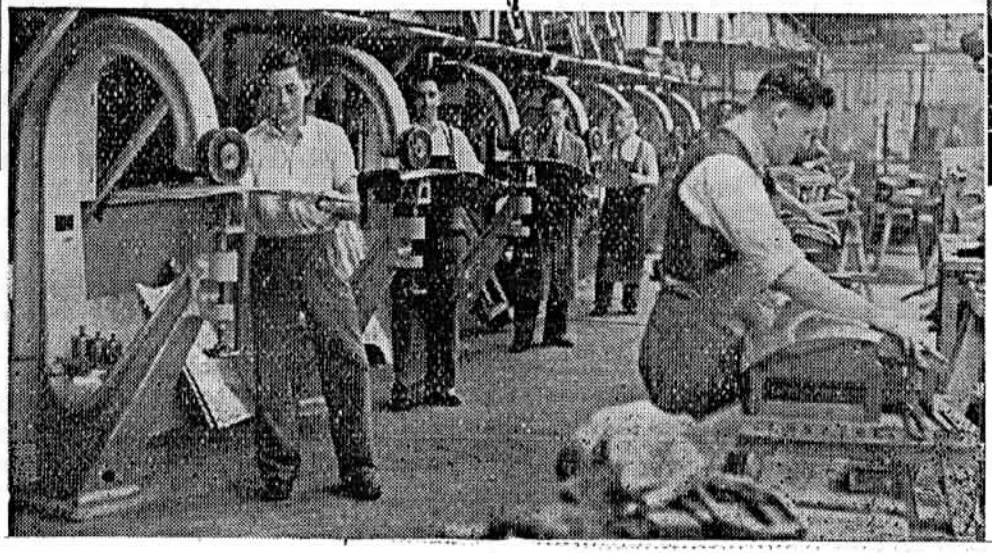
(*Left*) *Mr. G. E. Malyon who joined Stag Lane as time clerk in* 1935, *in the engine machine shop. Later he went to the wages office when all employees numbered no more than* 700. *He is at present employment manager, E. & P. Divn., and runs the National Savings Group there.*

(*Right*) *Mr. W. A. Ward (Aircraft Division one of our old-timers, who joined the company in* 1928, *and after a year in the cost department took over the position of stock controller. In* 1930 *the spares and despatch were brought under him, and in* 1935 *production control as well. It was in* 1941 *that he took over his present position of Spares Control Manager. bringing his long experience of Spares to the organising of a department which is important enough in peace time, but vital in war.*

(*Right*) *Mr. A. V. Cleaver, in charge of the propeller aerodynamics dept., E. & P. Divn. He joined the drawing and stress office in* 1936, *and afterwards became Mr. K. B. Gillmore's assistant* (*see O.J.* 25) *on the aerodynamics side.*

MORE D.H. PERSONALITIES

Left to right, below : Messrs. G. W. Pargiter, A. H. Wheeler, H. J. Wildey, F. Bradbeer, F. Parish. These form part of a team of panel beaters in the second aircraft group to which the works superintendent gives high praise. Never yet, said he, have they fallen down on a job. Mr. F. Bradbeer has a photograph of himself taken when he was working on the D.H.9, *on subcontracted work. Hidden behind Mr. F. Parish are Messrs. J. Shimmell and G. Panson.*



Miss A. E. King, checking concentricity of the hydromatic dome, and outside dimensions. It was after a short period in a government training centre that she joined the Propeller Divn. in July last as inspector, and is typical of the many girls who are making a good show of an unaccustomed job.

Page Four

Mr. B. E. Ray, began on the Gipsy engine test beds in 1935, *and later on engine installation in the Albatross days. He became chargehand in* 1938. *Incidentally, he is the member of de Havillands Sports Club who won the putting - the - weight county championships before the war began.*

Page Five

TO PROPELLER ENGINEERS

The de Havilland propeller engineers in the field, with innumerable squadrons to look after and plenty of rain and mud to cope with at dispersal points during the winter months, will enjoy this letter from an instructor (pilot officer, D.F.C.) at one of the Canadian stations :

" We are all pleased as punch at the arrival yesterday of all the gen on Hydromatic props.

" I am taking the next few days off to look through and try to learn it from a pilot's standpoint, as I am expected to teach it to pilots and I aim to do just that, and well. If I can put it across as well in my way as you do in yours and at the same time give your kind of service we should finish off this war damn soon.

" Many thanks to de Havilland, with faith in your props."

AN E. & P. DIVN. FUEL FLASH

Process tanks holding approximately 600 gallons normally run at 208°F. If the temperature is raised by only 5° above the normal there results an increase in coal consumption of 3 lb. an hour, or 72 lb. round the clock.

THE SAME AGAIN BUT MORE SO

The poster reproduced on page 7 was displayed in the Hendon works of the Aircraft Manufacturing Co., Ltd., during the 1914–18 war, calling upon all to speed the output of de Havilland war aeroplanes, mainly D.H.4's and 9's. The poster has come to light among the treasures of Mr. F. E. N. St. Barbe, our Business Director to-day ; he was personal assistant to the Director of Production at the Airco works in those days and well remembers the struggles he had to clear deficiencies and bottlenecks in the detail shops, with an output rising in 1918 to over 250 aircraft a month.

The fitness of the old wording to the present conditions is surely a lesson in itself. There must be quite a few among us in de Havillands who were in the Airco works and remember this very poster.

NOTICE.

At this stage, when immediate delivery of Aeroplanes and parts is an absolute necessity, I hardly think it is necessary to appeal to the loyal assistance of our men, but I would remind them that at any time the possession of one of our machines may mean the winning or losing of a battle.

EVERY MAN WORKING FOR THE AIRCRAFT COMPANY IS WORKING FOR HIS COUNTRY.

I hope and believe that every man will put his BEST WORK and his QUICKEST WORK into everything he does, with the knowledge that the immediate delivery of machines, and parts, is of great importance to the Country.

The Staff will be considerably increased and extra hours will have to be worked. Our old employees can give enormous assistance by helping the new hands, and the new hands can help by learning as quickly as they can.

I feel that I can rely on the loyal assistance of all to see that, in working at high pressure, every precaution will be taken to ensure the good work hitherto obtained.

The Government look for our support, and that support MUST come from every man throughout this business. I know I can rely on getting it.

G. HOLT THOMAS.

AIRCRAFT DIVN. J.P.C. MEETING

The heartening news now coming along from the Western Desert and North Africa makes everyone want to do even more, to strive harder for bigger output to help the boys out there. At the meeting on November 17 Mr. Vickery said on behalf of the operators it was felt that perhaps everything was not being done to achieve the utmost possible, and they wished to form a committee to look for bottlenecks and ease any found. Mr. Grinham replied that to form a full-time committee such as had been suggested would mean duplication of the work already being done by those who keep contact with subcontractors, and also those who do progress work. The Joint Production Committee itself existed for the purpose of bringing to the front difficulties experienced in the shops, and if properly used the troubles would be ironed out.

After long discussion during which Messrs. Lydall, Sell, Harris, Trounce and Bowler gave their views, the sense of the meeting was that full advantage had not yet been made of the machinery provided by the Joint Production Committee, a state of affairs to be rectified. It was decided that in future the Committee would meet in the third week of each month to debate the production position of the current month, investigate bottlenecks if any existed, and discuss the target for the month following.

A COMPLAINT

We have been asked by Mr. Dovey, canteen accountant of the Aircraft Divn., to say that cups and cutlery disappear from the canteens at a faster pace than they can be replaced in these days of short supplies. In no circumstances should any be taken from their rightful place. To use cups as receptacles for oil, or grease, or paint, renders them completely unfit for further canteen use.

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NOVEMBER PRODUCTION

The bright news from the fighting fronts during the whole of November was not matched on the factory fronts, at least so far as some D.H. shops were concerned. The Aircraft and Propeller Divisions failed to reach the difficult but achievable target set. No single reason can be advanced as the sole cause, but it is stated to be true by Mr. Grinham (Aircraft Divn.) and Mr. H. J. Nixon (E. & P. Divn.) that if all operators concerned with parts badly needed to complete the programme had worked the required number of overtime hours, actual output would have reached planned output. There are, of course, many difficulties in the way of working the recommended number of overtime hours, and in some cases the rate of flow is such that there is no compelling need to do so. But where bits and pieces are urgently wanted, personal convenience might well be kept in the background, for the importance of the products of these two divisions does not have to be stressed. A visiting Mosquito crew the other day emphasised the greater importance of quantity deliveries *now* compared with later, so as to exploit to the utmost the new tactical features of this outstanding bomber.

On the other hand, the output last month from the propeller repair depots was reported by Mr. Burgess to be well up and Mr. Snell's engine repair group maintained the substantially increased target set a little time back (see O.J. No. 20, p. 8). Additionally there is on page 5 an excellent item of news from an Aircraft Divn. shop.

THE CANADIAN MOSQUITO FLYING ALREADY

Scarcely had it been announced that the Mosquito was being produced by the de Havilland Company in Canada as well as under dispersed and duplicated conditions in

Britain than we read in the papers that Mr. Geoffrey de Havilland, chief test pilot of the British company, had actually demonstrated the first Canadian-built Mosquito at Ottawa on Saturday, Nov. 21, before the Earl of Athlone, Governor-General of the Dominion of Canada ; Mr. Howe, the Canadian Minister of Supply ; Mr. Ralph P. Bell, the Director-General of Aircraft Production in Canada ; and many high officers of the Royal Canadian Air Force. In point of fact, that Canadian-built prototype did its first flight a month earlier and Mr. Geoffrey's second flight in it took the form of a demonstration of some importance which, from reports we had already received, seems to have outclassed even the most finished Mosquito exhibitions that we had been accustomed to watching at airfields in this country.

Not only have our friends in Canada got out their first machine in remarkably quick time, and indeed made good all-round progress which the censor will not allow us to discuss, but they have also produced a very sweet-flying Mosquito even compared with the British product. They are to be congratulated, and particularly is credit due to the two senior technicians who went across from England to get the project moving : Mr. Harry Povey, who is in charge of all production over there, and Mr. W. D. Hunter, who controls all design matters. We were naturally not allowed to mention before now that they had flown to Canada to organise Mosquito production there, but now the good news is out and those of us who know just when they went, and what they had to do, realise that they have done a fine job. Our best wishes to them all in this loyal and lusty branch of the de Havilland family, which was inaugurated, with keen foresight, in 1928. By the time the war began D.H. Toronto was building Tiger Moths in a big way and was able to turn out hundreds of Anson twin-engine trainers as well before the Mosquito became ready for Canada's attentions. Now they are all tremendously

(Left) Mr. W. D. Hunter, who went out to take charge of all Mosquito design matters in Canada. (Right) Mr. Harry Povey, who went out to organise the Mosquito production.

keen to be building the fastest bomber in the world, and the newspapers say they are aiming to turn out three a day before very long.

CUTS FROM THE JOINT PRODUCTION COMMITTEES' NOVEMBER MEETINGS

Aircraft Divn. Examples of defective work were discussed ; a coolant pipe was shown which had been fitted to a machine, with the end completely sealed, and also a hydraulic pipe with crossed olives. Recently a photograph was received from A.I.D., H.Q., disclosing a box of bolts left under the engine cowling of a machine which had been flown away to a Service unit. These incidents greatly affect the clearance of aircraft. It was agreed to bring samples of defective work to future meetings, and exhibit them in the shop whence they came. The demand for spares was noted, and it was brought out that as aircraft-on-ground (A.O.G.) requirements must always come first, certain items needed for production were not infrequently sent elsewhere, which probably gives rise to the thought in the shops that shortages of those items exist. Bus services and their shortcomings were also debated and it was agreed that nothing further should be done until the present investigation by the transport authorities is completed.

E. & P. Divn. When the question of the overhaul of machines was being discussed it was asserted that a great deal of damage is caused by swarf when operators clean down with air-lines. Another point raised was the seemingly unnecessary movement of machines from one site to another, or the removal of, say, one Potter and Johnson for another to be put in its place. Indeed, so inexplicable did this sometimes seem to some operators that it was freely stated in the factory that there was a fee of £50 paid to the company for each machine moved ! The answer is that if an automatic machine is tooled-up for a certain job, it is much quicker to change two machines than to alter feeds and speeds, horsepowers, air chucks, cams and testing, Weeks and even months may thus be gained, and time is the important factor these days.

Propeller Service and Repair. It was stated the lighting in the new shop was such as to cause shadows to fall over blades being worked on, and suitable alterations were agreed upon. When the subject of tool and equipment shortage was brought up, Mr. Burgess reminded those present that it was better to bear in mind what could be done with the equipment possessed, rather than what *could* be done with equipment we'd like. He pointed out that many undelivered tools had been on order for a very long time, and orders were now being placed in anticipation of needs well ahead. The heavy demand from all quarters made delivery difficulties inevitable.

Mr. Snell's Engine Repair Group. It was reported that one of the shops in the group still delivered carburettors in cases with the small parts packed loosely, whereas it is important that they should be tied to the main carburettor parts. Steps were being taken to stop the practice. The question of washing facilities for users of paraffin was discussed and it was decided to make soap and towels available for them.

GOOD TEAM WORK

The November output of this compression-legs gang (Aircraft Divn.) was 30% higher than in October, which itself was 43% greater than the monthly average from April to September. They display on the bench each month a graph indicating the target aimed at, and so far they have not failed to achieve it. The average weekly hours of the team are consistently high.

(*Left to Right*) Messrs. C. Blackman, J. Dixon, R. Roberts, G. Stocking, J. Gough, T. Vincent, R. Deacon, K. Hunt, A. Hattie, G. Steven, J. McGreivy. (*Inset*) Mr. J. Lister, the nightshift member of the team.

THE END OF THE BEGINNING

A meeting was held at a main aircraft factory towards the end of November of workers' representatives who wished to speed production by all means possible. If that month's target was not materially affected, perhaps production flow in months to come will be. Before the meeting ended, the happenings in North Africa prompted the gathering to forward to the Prime Minister the following resolution :

> This Meeting of workers' representatives places on record its appreciation of our army's successful offensive in North Africa and in order to ensure its continuance urges all workers in the factory to maintain adequate production of our aircraft.

E. & P. PRODUCTION DRIVE

At the request of workers' representatives on the E. & P. Joint Production Committee, there is now being organised a "production week," during which a special effort will be made to increase output, and thereafter maintain much of the impetus thus gained. The main factory is to be divided into zones, and each will have two section leaders, one appointed from the operators concerned and the other from supervision. The zone which has the best increase over the average of the previous 8 weeks' bonus earnings will be awarded a special banner now being designed. It is hoped that the results of this interesting experiment will be announced in a later issue of O.J.

A REST-DAY VISIT

Mr. G. A. Luff, Chief of the E. & P. Division jig and tool drawing office, writes to say how beneficial had been the visit of his department to the Aircraft Division, for it enabled his staff to see some of the jobs they had helped to tool up. The visit was possible because they travelled under their own arrangements.

Miss P. R. Mairet (above, left) engine assembly S.A.G., who in less than 12 months has become capable of doing a complete 100 per cent. engine assembly, Mr. C. E. Aubrey (centre) who joined in 1937 as engine tester at Hatfield. In 1938 was made chargehand and foreman in 1940. When Mr. Snell's engine repair group started Mr. Aubrey went with it, and has been in charge of the engine test beds since April of this year. Mrs. E. Hepburn (above, right) who works in a machine shop of the propeller division. Without previous experience she is doing a very good job on a milling machine. She is of a family that is pulling its full weight—husband in the R.A.F., one brother in the R.N., and another a prisoner of war.

Mr. Percy Griffiths (below, left), (Aircraft Divn.), started in the machine shop in 1931 and became our first tool-turner when the tool room came into being. Is fully competent to deal with anything from a small spindle to a complicated fixture or screw-gauge. Mr. G. Church, (below, right) who was recently promoted foreman of a dispersed sheet metal shop, Aircraft Divn. He came to us in 1935, and before long was made chargehand in the cowling dept. He was posted to his present shop early this year as assistant foreman.

DO YOU KNOW THEM?

More D.H. Personalities.

MOSQUITOES

Still waters breed a biting pest
Which carries out its job with zest.
It nips us on our tend'rest parts
And gets right home with poisonous darts.

It dodges here and dodges there,
It seems to have a natural flair
For landing where we want it not,
Right on our most exposed spot.

And now this painful little blighter
Gives its name to bomber-fighter,
A craft more deadly than its sire,
Its poison being bombs and fire.

When "skeetoes" give their little jab
The antidote's a blue-bag dab,
But when our version scores a goal
It leaves a "helluva" great big hole.

No use the Jerries spreading nets
To catch our latest agile pets.
However small the mesh he knits,
We'll blow the whole kaboosh to bits.

With acknowledgments to the *Wireless World* Advt. of N. Partridge (Makers of Transformers and Chokes).

CARELESS TALK

The public release of "Mosquito" news does not absolve us from the need to be discreet in our talk. The authorities have already found it necessary to interview some gossipy D.H. employees. We must all remember our privileged position and think before we speak.

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Private O. J. No. 31
Memorandum of information to all de Havilland personnel. 24/12/42

The Directors of the de Havilland Aircraft Co. Ltd. wish every member of the Company, not forgetting those away on active service, a happy Christmas and good luck in 1943—a year in which our products will be on their mettle more than ever before.

MOSQUITO SPARES

It cannot help the enemy to learn that the very greatest importance is attached to the organisation of spare parts supplies for Mosquito aircraft, and it may do a little good if every single man and woman in every division of the de Havilland Company is reminded once again of the essential character of the spares production and distribution in the whole effort to maintain the high serviceability that is the secret of striking power. Will everybody who has to do with spares look upon it as a solemn trust during the early part of 1943. Nobody needs telling how great will be Bomber Command's task in the forthcoming months. If 5 per cent. of the bombers in any wing or group are grounded for want of spares it is to be regarded as a serious state of affairs. High standards *must* be maintained in every section of spares control from production quota to despatch. Production of individual items is almost entirely dispersed but we must spread the understanding in all possible directions.

The crews are on the line, and they expect the bombers there, too.

WELCOME TO ENGLAND

Mr. G. R. Spradbrow, chief test pilot of the de Havilland Aircraft of Canada, Ltd., surprisingly turned up in England the other day on a short visit in connection with all the great things that are going on over there. Busy in Toronto at the week-end, he was into an aeroplane and over with us early the following week, and quickly found his way around, though we are all so scattered he couldn't get a proper perspective of our activities for quite some days. He was soon very popular with everybody here and all were eager to hear his impressions of the Canadian Mosquito, the first flight-testing of which was done by himself. Meanwhile, our own chief test pilot, Mr. G. R. de Havilland, is having a busman's holiday flying Mosquitoes on the American Continent and getting comparative data of the new types over there.

Transatlantic conference : Mr. G. R. Spradbrow, chief test pilot of the Canadian de Havilland Company, photographed with some of our own pilots on his visit to England. L. to r. : Mr. Pat Fillingham, Mr. Spradbrow, S/Ldr. H. J. Greenland, Mr. John de Havilland.

THE DE HAVILLAND ENGINEERING SOCIETY

A meeting of some of the personalities on the experimental side of the Aircraft Division was held on Nov. 26 to discuss the best way of arranging for some good informal talks on technical subjects during the winter and onwards, and it was enthusiastically decided that a little discussion club should be formed, to be called "The de Havilland Engineering Society." The difficulties of travel have greatly restricted the activities of the Royal Aeronautical Society and its local branches, and there has for long been a feeling that some private and very informal talks among our own aircraft engineers would be enjoyable and beneficial. Let us remember that Mr. Hearle has always advocated talks of this kind, particularly since the war began, not only for their educational purpose but also for the undoubted value of meeting socially. We can expect an inaugural meeting of the society soon after Christmas. Mr. H. W. L. Calder is one of the prime movers in this matter and Mr. D. R. Newman is acting as hon. secretary.

REPAIR INSPECTS PRODUCTION

A small party of night-shift workers at our main aircraft repair depot made a long cross-country journey early this month under their own power and in their own brief free time to have a look round one of our principal aircraft assembly depots and test fields.

* * *

"I think we shall have to make this member of 50-ton steel instead of 30-ton steel."

"For heaven's sake don't do that. The darn thing's come out overweight as it is."

Mr. R. J. Grew, who joined the company as engine inspector early in 1938, and two years later became a foreman. Since then has remained in Mr. Snell's engine repair organisation, becoming a shop foreman in 1942.

Mr. W. F. G. Hill, Chief Buyer, Aircraft Divn. A real D.H. veteran, having started in the Airco Works in 1918, and joined our Buying Office in 1923. He served in France in 1916 when he was under 18 years of age. He has been head of the Buying Dept. since 1926.

Mr. A. H. D. Goodyer was with the company from 1924 to 1931, rejoining at Hatfield in 1933, in charge of the aerodrome and its buildings. In May, 1940, he became plant manager to the Second Aircraft Group.

The night-shift aircraft repairers: Messrs. Crummett, Vincent, Kelly, Stevens, Turner, Kay, Paveling and Coombs. *(see previous page).*

PICTURES OF THE WORLD'S FASTEST BOMBER

Reproductions in full colour of flying views of the Mosquito which were taken by Kodachrome colour photography are being made available to de Havilland personnel in every depot. A donation of sixpence to the Royal Air Force Benevolent Fund is asked in respect of each copy, and volunteers are kindly undertaking the handing out of the pictures and collection of the money in boxes. Contents of all boxes will be gathered together, and a cheque for the total sum will be sent to the Fund, adding to the many contributions we have been able to make in the past. The pictures measure 9½ inches square. It goes without saying that we cannot get envelopes or cardboard and it is suggested that everyone can bring a newspaper in which to take his or her picture away without folding it.

Larger sepia pictures of the Mosquito are about to be distributed to the many depots under de Havilland and sub-contractors' control where Mosquito components are being made. Although on common poster paper—and we are lucky to be allowed this—they are beautifully reproduced. These, of course, are not for sale, but for display in works and canteens. Choose a clean, well-lighted place for them, please.

QUICKENING THE PACE

The arrangements for the E. & P. Division special output drive referred to in O.J. No. 30 (p. 6) are forging ahead. It is due to begin on January 4th and will be known as "North Africa Production Week." Each day will have its own link with events out there we all follow so closely: Monday, for instance, being Bomber Command Day; Tuesday, Fighter Command Day, and so on. The R.A.F. band will play in the canteen on certain days—and nights, too—and on Thursday, which is planned to be Combined Operations Day, the band of the Coldstream Guards will enliven the dinner-break for both the dayshift and nightshift. Bomber crews, fighter pilots, parachutists and other

serving personnel will come to see how we are getting on each day, and will take the opportunity to tell us some of their experiences ; in the canteens, day and night. Another feature will be R.A.F. Empire Training Scheme Day, when it is expected somebody well-in-the-know will tell us how future crews are trained by the thousand, for which our Gipsy Engine and, of course, our propellers, play so important a part. Another day will be European Allied Forces Day, when our visitors will include Fighting French, Dutch and Poles who have escaped the clutches of the Nazi invaders and are now vigorously carrying on the fight, by our side. The Americans will also be represented, and the ladies have not been forgotten, for serving members of the W.A.A.F. will be present to lend us their support.

A Production Competition is planned. Where it is practicable shops will be divided into zones, for each to vie with the others to see by how much friendly rivals can be beaten, based on the average output per operator in each section during the months September, October and November, 1942. Large charts will be prepared and erected at suitable sites to enable all concerned to see the day-to-day progress made, but it is a regrettable though unavoidable fact that there must be a time-lag of almost two days before the daily information becomes available. Monday's results will not therefore be posted until Wednesday, and so on. When the final results of the effort are known a shield will be awarded to the zone with the best achievement.

In those departments where a measure of individual work done is not practicable, such as assembly shops, inspection, plant, tool-room, and clerical staff, the competitive element will be provided only by the average number of hours worked, and for that reason they unhappily cannot participate in the shield award. As Saturday, January 9th, is a rest day, the next day, Sunday, will end the week.

It is hoped to have the plans printed in programme form for sale for the R.A.F. Benevolent Fund.

FOR ALLOTMENT HOLDERS

"O.J." has pleasure in giving all D.H. gardeners its own selections from Holmtruth's 1943 seed catalogue :—

Potato, First Early : *Barren Pilot.* Immune. Kidney. Amazing cropper—at least 14 lb. from every stone of seed sown, even in poor soil.

Potato, Main Crop : *Sharp's Speck-eyed Midget.* Immune. Vigorous haulm. No earthing up required—and digging up also not recommended.

Beans, Runner : *Sisal Special.* A straight-fibre bean with pods up to 20 inches long. Tall and decorative.

Beans, Broad and Long Pod : *Flynest Favourite.* A black-crested top-heavy variety, comes a great cropper. The young pods can be cooked whole (but should not be eaten).

Beans, Dwarf French : *Catch-as-Catch-Can.* A sudden cropper—unripe to-day, old and stringy to-morrow.

Cabbage : *Wild Rose Heartless Wonder.* An open variety suitable for either spring or autumn sowing. Tall spiral stem. A soggy cooker for canteen use.

Carrot : *Wacme Stump-rooted Intermediate.* No waste ; the root is stump-ended and goes to no depth at all.

Leek : *Bodkin Beauty.* A picturesque mountain-grass variety with tasteless needle-like stem. *Extra Large Knitting.* A bigger sort with pearl-like bulb and plain green stem. Sometimes called "mock snowdrop."

Lettuce, Cos : *Jack-and-the-Beanstalk.* A useful quick-bolting species, makes a shady border.

Onion : *Withertop Champion.* A dependable bead-like stock, always withers from foliage downwards. Row should be plainly labelled.

Pea, main crop (sow 1 pt. for 50 ft.) : *Nilbasket.* A seedless flat-podded pea of sturdy haulm. Height 5 ft.

Radish : *Whitewood Breakfast.* A capital long-grained radish of slow growth, very leafy.

Turnip (1 oz. will sow an acre) : *Balsaball or Sick-weak.*

Every seed germinates so that row can be thinned 6 or 8 times. Leaves quickly perforate. Root is pithy and rank.

Get your seeds in early so as to be in good time to send replacement orders. Dig for victory.

MIND YOUR EYES

Dr. D. R. Thompson, medical officer of our company, says that many seem to be unaware of the Optical Service which was inaugurated under his direction last Spring and was announced in O.J. No. 13 of 16/4/42, and there are misunderstandings about it, the most common being that only members of the Sick Club can benefit. That is not so. Anybody in the Aircraft, Engine and Propeller Division factories and dispersals in the South of England (not S.A.G. or Aircraft Repair Group at present) can consult the optician free of charge by applying at the first-aid room for an appointment. The cost of eye testing is met under the National Health Insurance. The cost of spectacles is borne by the individual or through his or her Approved Society or the Hospital Savings Association.

WAR SAVINGS LEAGUE

For the sixth month in succession the Aircraft Division Service Department, captained by Mr. H. H. Cox, headed its own Division League Table with 100 per cent. membership. This achievement is particularly noteworthy because the department doubled its personnel during the period, and it cannot be easy to persuade every newcomer to become a saving member. Another fine effort was the spurt made by the Propeller Service Depot Team, captained by Mr. J. Sheppard, which in the month ending November 15 jumped from 13th place in the E. & P. Division League to top place with 96 per cent. membership.

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Mr. J. J. Parkes broadcasting his good wishes.

Mr. W. J. Rumble, who voiced the thoughts of his colleagues.

SOMETHING ATTEMPTED

By the end of the first day, it was plain the E. & P. Division North Africa Production Week would be a success. Mr. J. J. Parkes, the General Manager, had opened it with broadcast wishes of good luck, saying that it seemed to him that extra output was just like saving money ; one cannot usually put away a large sum all at once ; it's the little here and the little there added together that make the big amount in the end. He also plainly said that whatever records were achieved in the way of bonus times during the week they would not be used as a basis for re-ratefixing any jobs.

This disposed of any lingering doubts to the contrary, and forthwith everybody seemed to get right down to it.

Mr. W. J. Rumble, a shop steward member of the Joint Production Committee, followed Mr. Parkes over the microphone, and during his message said that the country, after long preparations following so many early reverses, had reached the stage when we should be able to smite the enemy unceasingly heavy blows, and it was vital that production should be pushed to the maximum to ensure the final destruction of Fascism.

A Challenge Shield was competed for, necessarily confined to the shops working on rate-fixed times. So that the daily progress of each zone could be watched, specially designed target boards were erected at focal centres. Uprights for each zone were calibrated in such a way that the six divisions from the bottom represented the average man-hours and output, in bonus units, during an average week of September, October and November, 1942. The seventh calibration represented the point which output would have reached on the same basis, had attendance hours been 100 per cent. The top three were the unknown quantity—what could have been produced in the same time if a determined effort had been made. Bonus units, it was explained on a slip fixed to every machine and bench, were based on the percentage of manufacturing time gained per hour in a full shift.

Every day a number of officers and N.C.O's visited the factories. Some were famous for the parts they had played in great exploits, and all with much experience of grappling with the enemy. Many told the stories of some of their experiences to the operators assembled in the canteens, both dayshift and nightshift. One pilot of Fighter Command with eight enemy aircraft to his credit, pleasingly likened the factory workers and his own colleagues to a football team. The pilot is the centre-forward, and the operators the half-backs : if the others of the team fed the ball at the right moment to the centre-forward, he could slam it well

and truly home. So with us, if we do our part, they, the R.A.F., will do theirs.

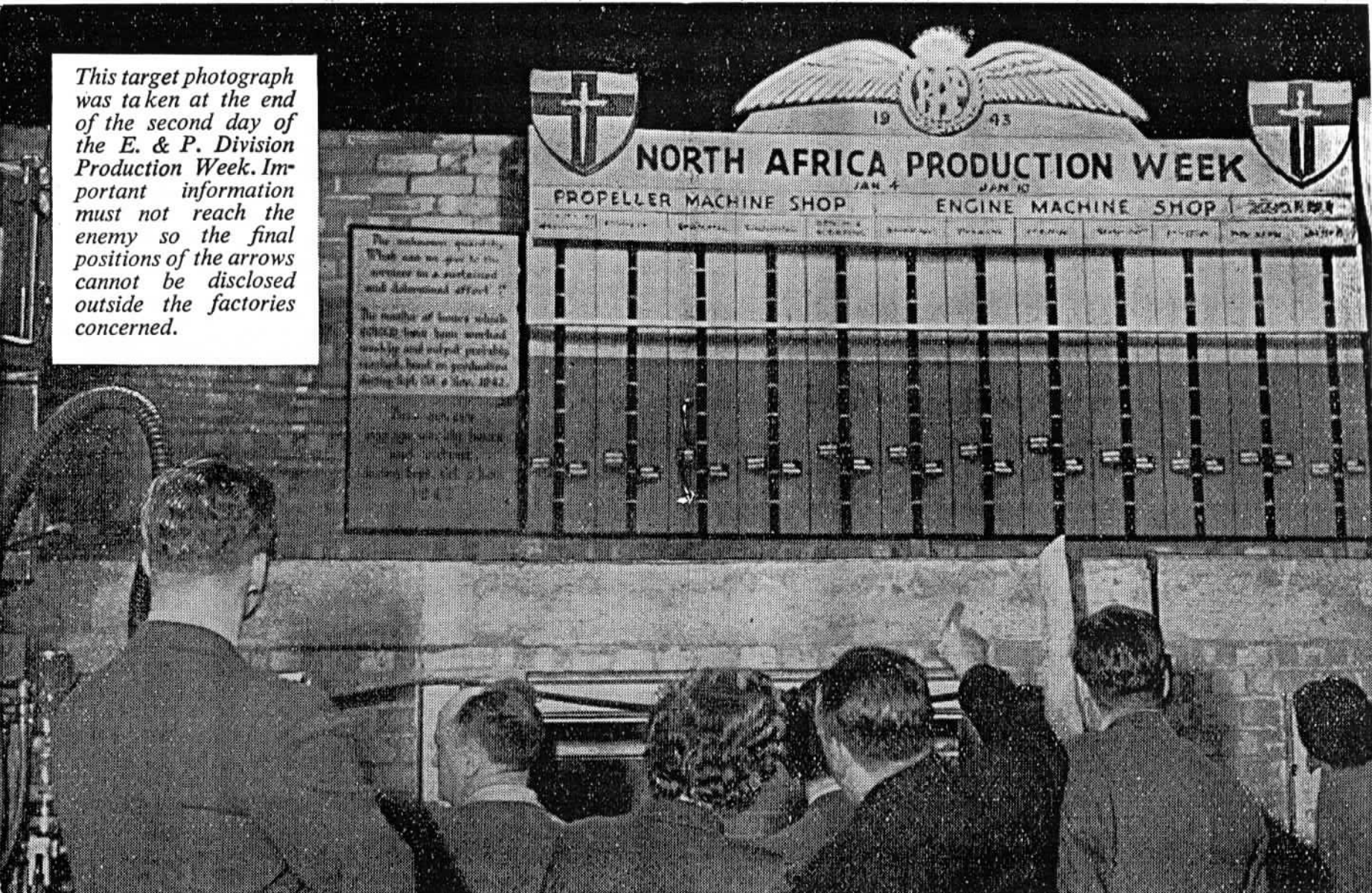
Which zone was the victor could not be included when this issue was being printed, for it took a day or more after the week had ended to collate all the figures involved. From now the shield will be competed for each month, and it is certain that the present winners will not be allowed to rest on their laurels. It is very important that the increased pace should be maintained, because even they who think victory in 1943 is only a possibility, would be likely to agree that production enough would convert it to a probability.

ANOTHER GOOD SHOW

Mr. Snell's Engine Repair Group were paid a well-earned tribute on December 29 last, when they received from the Ministry a note written the day before which said " Please accept my heartiest congratulations on last week's engine output. I am glad to see that de Havillands is not the firm to let a little thing like the Xmas holiday stand between them and their regulation output." This feat was achieved by the loyal response to Mr. Snell's appeal for all in the group to make a special effort, and the week's scheduled work was done in four days.

FOR A GOOD CAUSE

On January 17 at a main aircraft factory there begins a " Merchant Navy Week," and every day special attractions have been planned in aid of this indispensable service. For five of the days the Club will be the centre ; on Monday a boxing tournament ; on Wednesday a film show, when merchantmen themselves will recount some of their adventures ; Thursday is " Crazy Night " ; on Friday a whist drive, and on Saturday a party and carnival dance. On Tuesday at the Public Hall there is also a dance, and to wind up there will be, on Sunday, an all-star concert at the Alma Cinema, in a town close by. Those willing to help should get in touch with Mr. Williams social secretary.



This target photograph was taken at the end of the second day of the E. & P. Division Production Week. Important information must not reach the enemy so the final positions of the arrows cannot be disclosed outside the factories concerned.

FASTEST BOMBER SHOWS ITS PACES

One of the crack Mosquito day bomber squadrons, commanded by Wing Commander H. I. Edwards, V.C., D.S.O., D.F.C., was "at home" to newspaper men on January 4 and gave a demonstration of the technique of low-level bombing, the accuracy of which has caused such trouble to the enemy in Occupied Europe.

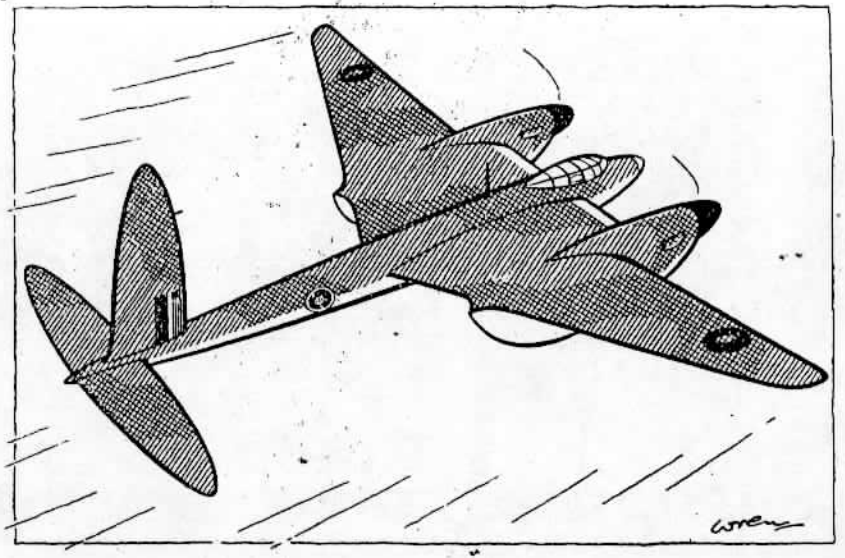
They staged an attack on a building by six Mosquitos flying at 20 to 30 ft. and using practice bombs in place of the nice 500-pounders such as they had been using two days previously against marshalling yards on the Continent. On that occasion one of their aircraft returned to England with a branch of a tree embedded in its fuselage. Some of the same aircraft and crews raided the Gestapo Headquarters in Oslo on September 25 and took part in the big day raid that smashed the Philips Radio Works at Eindhoven.

These men are all friends of our company, frequently visiting our dispersed production and technical units, and we maintain the closest co-operation with them in all matters concerning the assault upon the enemy. The pilots explained the accuracy of the low attacks, how it disconcerted the enemy ground defences, and how they could leave the fastest German fighters behind when getting away.

FOOD FOR THOUGHT

Lately there has been a mixed bag of complaints about the Aircraft Division Canteen, which has to serve the same people day after day with all their varying tastes.

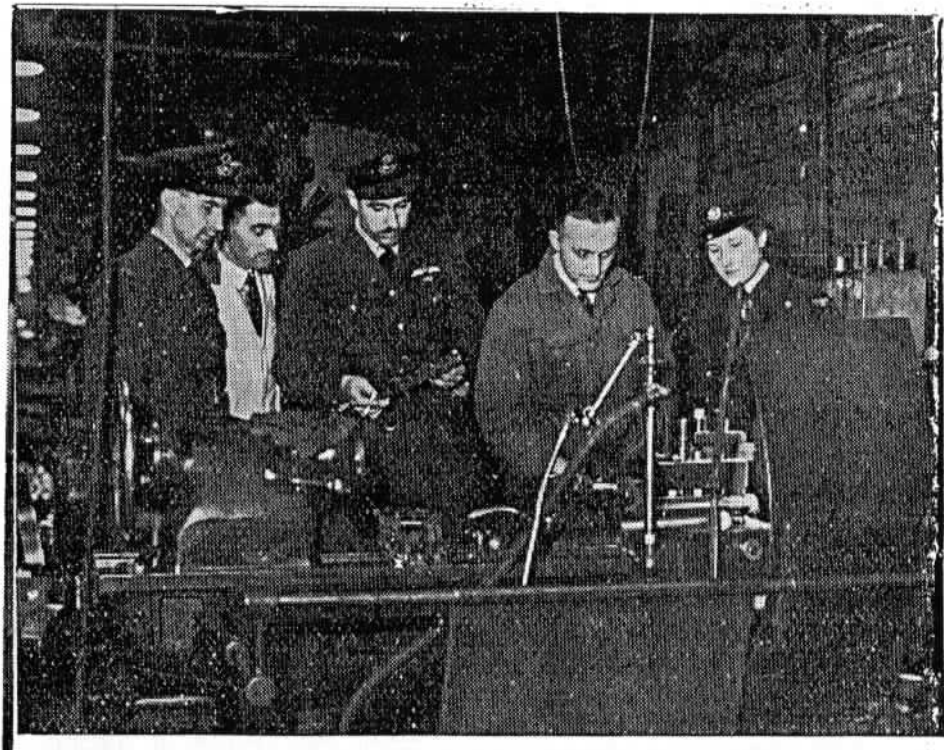
These days, a canteen has to deal with over 5,000 food regulations, constantly being changed; and ours has three peak periods per day and night shift. "Give and take" is therefore needed on both sides. The canteen staff are anxious to please, and can put right many problems immediately. If you want quicker and hotter service, please help by buying your tickets in advance, and by having the exact ticket value ready.



Achtung Adolf! Woe Benito!
What was this which flashed in sight?
'Twas the new D. H. Mosquito
'Trav'ling near as fast as light.

Occasional mistakes are human and can't be helped, but those made in the canteen are felt throughout the factory and the news spreads quickly.

Miss Mould is trying hard to improve the food and service in the main factory, with Mr. Runnacle doing the same at dispersals, and it is hoped shortly to announce visits to the kitchens, when questions can be answered on the spot.



A picture of Bomber Command visitors to E. & P. Division.

WAR SAVINGS LEAGUES

For more reasons than one it was not practicable to publish in poster form the team positions reached on December 15. Nor can the winners be named here, as their titles might disclose information to the enemy. The Aircraft Division were notable in that Mr. Cox's team was displaced at last from its long-held top position, giving way to the team captained by Miss Burgess.

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STAFF ATTENDANCE COMMITTEE

A Staff Attendance Committee in the Aircraft Divn. has been formed from the monthly and weekly staff, to enquire into cases of bad time-keeping. The committee hopes to be able to diminish the loss of time, and will have the authority to recommend to the management cases to which consideration should be given, or alternatively to take disciplinary action through the National Service Officer.

E. & P. DIVISION J.P.C.

Numerous technical production matters were discussed at the meeting on Dec. 30 and past production achievements and the January target were gone into. The December engine output was considered a good effort and the propeller machine-shop target was met despite the Christmas holidays. A request for longer notice when operators are wanted to work on their rest day or night was to be considered.

On Dec. 24 Mr. H. J. Nixon had a talk with shop stewards on a number of labour and welfare matters, including food kiosks and canteens, upgrading of women labour, engine capstan setters' bonus, women checkers (propeller blades), dust extraction plant, staff attendance, etc.

TRANSPORT AND PRODUCTION

This is our first opportunity to report a special Joint Production Committee Meeting, held in the Aircraft Divn., Dec. 21, to discuss, in the presence of representatives of the Air Ministry, M.A.P., the Divisional Petroleum Office, London Passenger Transport Board, and local Ministry of Labour Office, the very difficult problem of travel between home and factory, and its direct and promptly realised effect upon production output.

Mr. Grinham took the chair ; there were 12 representatives of the works present, and our own transport manager and petroleum officers, as well as representatives from our Second Aircraft Group, also attended. Mr. Allardyce, Works Superintendent, said that our weekly meetings of the Absentee Committee have made it obvious that lateness and absenteeism are closely related and wrapped up in the transport question ; it is very difficult for people in certain districts to get to work on time. Mr. J. R. Bowler pointed out the difference between train and bus fares, and it was shown that while the train services are not fully used, motor-bus loadings, as stated by Mr. Knowles, of the L.P.T.B., have indicated the need for more buses. Mr. J. P. Fitzhenry explained some of the night-shift difficulties. Mr. Guiver suggested interchange of tickets by bus and rail, and mentioned how shift work and A.R.P. duty prevented many workers from using the last train, so that they sometimes had to pay two fares. Miss Alban, Ministry of Labour Welfare Officer, suggested exchanging with other firms, on a voluntary basis, labour in the same age-groups and industrial categories to places near their homes.

Many other constructive proposals were put forward and a full report has been submitted to the various Government departments. The M.A.P. were requested to put the points before the Minister of War Transport.

DOWN TEE SQUARES

The Aircraft Division technical staff gave themselves, relatives and friends a party lunch and theatre show on Saturday, Jan. 16, their half-day off. One hundred and sixty-nine strong, including supporters, they foregathered in London and celebrated the success of their child, the Mosquito, even to the extent of speeches, albeit short ones. Mr. C. J. Long, subcontracts manager, proposed the King's health. Mr. P. F. Bryan, chief draughtsman, proposed a toast to the aircraft, which Mr. R. E. Bishop, chief designer,

replied to with stirring operational stories and with thanks to all for their quick work in drawing the numerous marks of the type, and a special word for the draughtswomen who have been a successful war-time feature of the D.O. Mr. Ted Mann acted as chairman of the gathering, of which Mr. F. L. Clarke was the organiser.

CARELESS TALK MUST CEASE

Unfortunately, there is definite proof that careless talk is indulged in by some amongst us. Everyone is again reminded that any conversation relating to the company's business, or the nature of its products, or future programmes, with people who are not directly concerned, and whether such conversation takes place within the factory or in a public place, constitutes a real and grave danger to Britain. In particular, it may bring about specialised attention for our factories from the enemy. The provisions of the Official Secrets Acts, which relate to us, are extremely wide, and very rightly prohibit all wrongful communication of information, and impose severe penalties.

CARE OF AIRCRAFT JIGS AND COMPONENTS

At the Aircraft Divn. Joint Production Committee Meeting on Dec. 23, the January programme was explained and the principal means for achieving it discussed. Mr. Adams (Works Inspection Department) stressed the point that defective work was on the increase, and several examples of defective work were exhibited. The need for taking special care of valuable equipment like blind-flying panels and landing lamps, was emphasised. Replacements are hard to obtain, especially of items which come from America. As soon as items are rejected they should be returned to the Reject Bay. Mr. R. A. Sell put forward some good suggestions to eliminate damage to parts on the electrical list, and Mr. Rudge agreed to look into each of these. Mr. Rudge asked for the Committee's help to try and stop the maltreatment of jigs in various shops. He exhibited

some jigs which had been very badly treated. He said that in some cases, if required, the Engineering Department will give some clearance on jigs.

The Production Drive Week in the Engine and Propeller Divn. was discussed and it was decided that, learning as much from it as possible, the Aircraft Divn. should organise a similar drive for the second week in February. Announcements will be made on the boards and in O.J. Some conclusions derived from the E. & P. Divn. Week are reported on page 9.

TIGHTENING ENGINE REPAIR ROUTINE

The eighth meeting of the Joint Production Committee of one of our principal engine repair groups, held in the office of Mr. W. Snell, Manager, on Jan. 4, covered some fifty points, mostly of a detailed and technical character which neither space nor censor will allow us to report. Points affecting tools, transport boxes and assembly methods, shop equipment and personnel were thrashed out. The need for more co-operation between inspectors and production on the build line was raised, particularly with regard to morning arrangements for overtime work. Another suggestion was that to avoid repeated extra overtime at the end of the week, the bonus week at two depots should finish on Wednesday nights, because there seems to be a natural incentive towards the end of the bonus week to get in the odd engine or two, with the converse effect of a shortage of engines on test at the beginning of the week.

Mr. Snell had meetings with the shop stewards in December on the whole subject of bonus computation, women's rates and representation, travelling expenses, etc.

COLOURED MOSQUITO PICTURES

Those wishing to buy Mosquito coloured pictures (price 6d.) in aid of the R.A.F. Benevolent Fund, should apply to Mr. Holloway at the New Club, Aircraft Division, before Feb. 14. All in E. & P. Division should apply to Mr. Ives.

THE BACKBONE

Last Friday, Jan. 22, fourteen of the sixteen founder members of this company and thirteen of the fourteen who have been with us since 1921 gathered together to initiate into the Over-Twenty Club a third group of twelve men who joined de Havillands in 1922 and so completed two decades of service during last year.

It was a great pity that our chairman, Mr. Butler, was prevented from coming and that of the 16 founders Mr. F. T. Hearle and Mr. H. Fidler were unable to attend. Of the 14 men of 1921 unfortunately Mr. J. Webb was kept away by sickness. And of the 12 initiates of 1922 Mr. S. Oaten was absent for the same reason. A photograph of the other 38 twenty-yearers appears overleaf.

The new boys of 1922 are :—

Mr. J. P. Cook, a highly experienced charge-hand fitter who entered the Airco fitting shop after being disabled in the 1914–18 war. Came to our Stag Lane fitting shop in 1922.

Mr. E. W. Knightley, charge hand in the aircraft paint shop, where he has been employed for twenty years. Knows what is meant by a good finish.

Mr. E. A. Middleditch, erecting shop and flight shed specialist, now back to his old job after organising works progress. Started as a woodworker.

Mr. A. A. Raw, responsible for all prototype jigs in the aircraft experimental department. Joined us at Stag Lane as a woodworker and soon went on to mock-up and prototype work. Has set out practically every prototype from the first drawings.

Mr. H. Picken, twenty years' experience in wood detail of which he is now a highly trusted inspector.

Mr. E. H. Livett, has been in charge of the Aircraft Divn. despatch department since Dec., 1922, when it measured two feet by four.

Mr. A. W. Seeley, started in the erecting shop at Stag Lane

THE OVER-TWENTY CLUB—Front row (1920 founders) left to right : Messrs. T. Sayers, S. T. Webb, W. E. Nixon, A. H. Morse, F. Cole, A. J. Brant, Miss J. E. Dunman, Capt. G. de Havilland, Messrs. C. C. Walker, R. Hutchinson, F. E. N. St. Barbe, J. A. Speller, G. K. Carlson, H. G. Reed. Second row (1921 members) : Messrs. C. S. Erlam, C. R. Stokes, R. Hyder, S. T. Weedon, C. G. Long, H. Taylor, W. Lamb, J. J. Jennett, J. W. Smallwood, T. G. Seward, P. A. Roedling, E. T. Marriott, J. W. Dale. Back row (1922 members) : Messrs. J. P. Cook, E. W. Knightley, E. A. Middleditch, A. A. Raw, H. Picken, E. H. Livett, A. W. Seeley, J. G. Green, T. J. Clark, R. Barnes, W. E. Butler.

and has been a Tech. School instructor since Jan., 1931.

Mr. J. G. Green, chief buyer, Engine and Propeller Divn., has been all of 20 years in the buying department.

Mr. T. J. Clark, another life-time career in timber, was superintendent on woodworking side at Airco in the last war, now senior wood-mill inspector.

Mr. R. Barnes, timber shed storesman ever since he joined in 1922, and was in charge for many years; few understand seasoning problems as well as he.

Mr. W. E. Butler, propeller contracts supervisor, wounded in the last war, was a wages clerk in the Airco days and joined our wages department in 1922. Also had long experience in accounts.

Mr. S. Oaten, quarter century of experience in metal parts. Was at Airco in the last war and has been in charge of metal detail view room since 1924. (Not in photograph).

Captain de Havilland gave to each a signed pictorial souvenir and a cheque for £20, and thanked them for their faithful work. Mr. Brant, himself a founder member, said that they picked some good people in 1922; he welcomed the juniors into the fold individually and expressed as best he could the intense feeling of unity among those who have served the growth of this concern.

Mr. Tom Clark recalled an incident in the Airco days when Mr. Holt Thomas said, "You know, Clark, we've got to work now. We've got Captain de Havilland joining us as chief designer," and Mr. Harry Picken said he well remembered Clark calling his attention in the shops to "an inoffensive modest-looking chap" and saying "You see this fellow—he's Captain de Havilland, the great designer." All had such memories to recall and the pity is that we have no space here to recapture something of the spirit that binds these holders of the de Havilland tradition with whom we are privileged to work. They are the embodiment of this company's aim, to produce good aircraft by honest endeavour and in so doing to achieve fellowship.

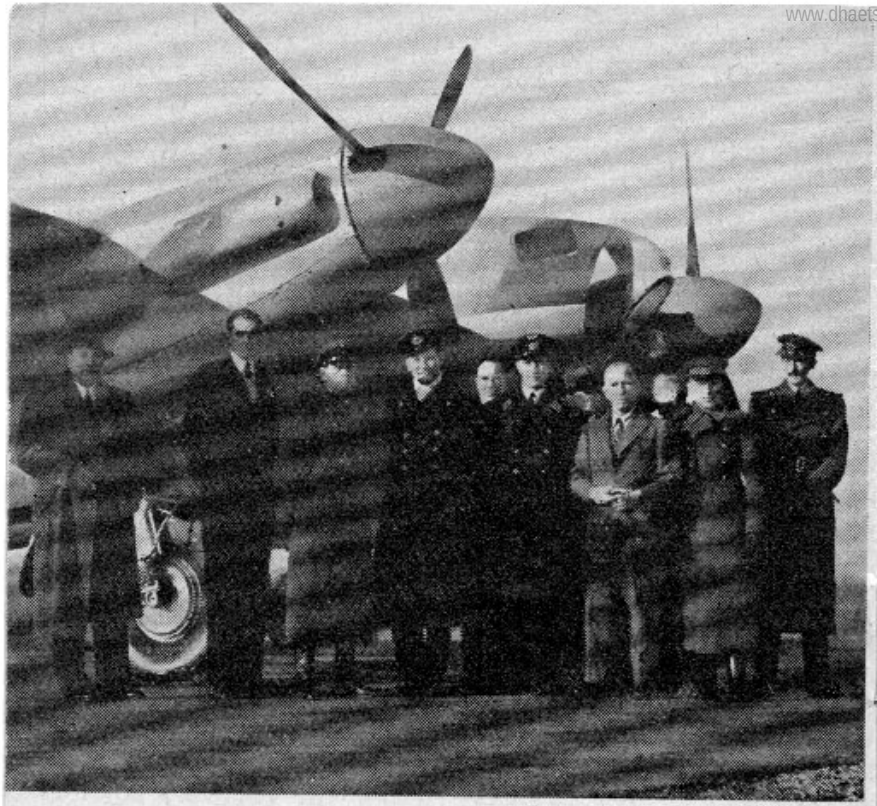
RHYTHMIC EFFECT OF WELL-PLANNED DRIVE

Mr. H. J. Nixon reports that output increases in the various "zones" of the Engine and Propeller Divn. during the production drive week Jan. 4–11, ranged from 8.8 to 42.7 per cent., compared with the average week's work of Sept.–Nov., 1942. No shop showed less than 8.8 per cent. betterment. The shield for the best performance went to Engine Drilling, Engine Milling were second, Propeller Scurfing were third—and there was not much between them. The competition was a neat piece of organisation, and so were the visits, talks, and other features. Mr. W. E. Dupré, responsible for the arrangements, reckoned he had some keen helpers.

If there were no further benefit from the drive the single week's bigger output would justify such an effort as this, when conditions favour it. But the following week was also above average, and ideas came forward which should have some lasting benefit, so that those who are inclined to be sceptical of spurt efforts face one or two sound arguments. At the least, attention is focussed; that alone is something to people whose work lacks the stimulus of variety. Perhaps the biggest single lesson we have learned from this and the previous spurts is that they are worthless unless planned and publicised in advance because unbalanced extra output causes bottlenecks later, with a resultant sense of frustration. Increase the tempo a little all round and you learn how to get more done for a given effort, but speed up in broken rhythm and the result is chaos.

RUSSIAN VISITORS

On page 10 is a picture of the five members of the Russian mission who recently visited some centres of de Havilland production. Their interests were technical so that there was little time for anything but discussions with our designers and production experts, but after an afternoon spent in seeing all our manufacturing methods on engines and



RUSSIANS ENTHUSIASTIC : And the Mosquito quickly gained their approval. This group, taken at one of the dispersal fields, comprises, l. to r. Mr. Zagudaev, civilian organiser; Mr. T. C. Wilkins, senior D.H. designer; Col. Dragun, Russian tank corps officer ; Col. Borissenko, Fleet Air Arm engineer officer; Mjr. H. de Havilland, D.H. chief liaison engineer; Capt. Dicky, Army Air Corps pilot; Mr. S. Bentley, D.H. propeller engineer; Mr. C. C. Walker, Chief Engineer and Director of our Company ; Mr. W. A. Tamblin, senior D.H. designer; Mjr. Rudoy, Army Air Corps bomber pilot; F/O D. Crichton, Air Ministry. Technical matters occupied most of the short time the mission had with us but Mjr. Rudoy kindly spoke at one of our main Engine and Propeller Division factories.

propellers one of the Army Air Corps officers, Major Rudoy, a bomber pilot who learned English in the Russian Military Academy, spoke a few words over the microphone, and this is what he said :—

" Friends and Comrades !

" I am very glad to give you best wishes and greetings from the Soviet people.

" I think that you feel the aid of Russia every day. The major part of Hitler's troops are now engaged in the fierce battles on the Russian battlefields. The thousands of black Fascist planes are flying now over Russia. That's why it is impossible to repeat the blitz on England that he made in 1940.

" I am sure that our common strength is quite enough to smash Nazi Germany. I am sure that the English people will give aid to our people in time, and this time is 1943.

" While I have been going through the factory I have seen the slogan : ' To win victory this year.' I quite agree with this slogan.

" I think that the main task before our peoples is to win victory this year.

" Our best wishes to the English people. Victory this year ! "

THE BEST YET

An ambitious and delightful production of Cinderella was put on at the Orpheum Theatre, Golders Green, last week by the Dramatic Section of the E. and P. Divn. Sports Club. The pantomime was written by Frank Atkinson, Maintenance Dept., who has already written several Hollywood scenarios. The music was arranged by Mr. Jenkins, Engine Inspection, and the production was by Mr. Bradfield, Wages Dept. All the profits are being devoted to Mrs. Churchill's Aid to Russia Fund. Everyone taking part is a member of the de Havilland organisation, with the exception of two small daughters of Bill Fraser who

takes the part of Button. Cinderella is played by Betty Norton, one of the transport drivers, Prince Charming by Eunice Thresher of the Sales Progress.

SEE YOUR MEAL COOKED

To bring the canteen staff of the Aircraft Division in closer touch with users of the canteen and cafeteria facilities, arrangements are to be made for visits to the kitchens during the dinner breaks. As numbers must be limited the question of choosing representatives is to go before the Joint Production Committee.

WINGS FOR VICTORY WEEK

£20,000 has been suggested as the target for the war savings group of the Aircraft Divn. for the week that is being organised locally as part of the great national campaign. We always did aim high.

EVEN I CAN UNDERSTAND

In reply to enquiries, our current series of advertisements under this heading, which are simple explanations of technical points in aeronautics, are not available in booklet form but may be so issued when the series ends.

MERCHANT NAVY WEEK

Aircraft Divn. Social Section Committee organised last week a Sunday concert, film show, boxing tournament, billiards demonstration, whist drive and dance in aid of certain merchant seamen's funds.

NAMES BETTER THAN INITIALS

The greater the use made of suggestion boxes the better, whether for ideas for improvement of design or output, or for bringing complaints to light. The name of the originator is welcomed, to avoid that feeling of frustration we get when a satisfactory reply cannot be passed on because of anonymity.

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Private O. J. No. 34
Memorandum of information to all de Havilland personnel. 11/2/43

THE MOSQUITO HONOURED

The Mosquito attacks on Berlin targets on Saturday, Jan. 30, tenth anniversary of the Nazi seizure of power, were gratifying to us who built the aeroplanes, and brought congratulatory messages from the squadrons and elsewhere, including cables from abroad. A wire from a neutral country congratulated us on the Mosquito stings. We thought the R.A.F. should take all the credit but they said the great thing was having a bomber that could go in at such phenomenal speed, and they give all the marks to de Havilland designers. We shall remember in the future how a D.H. machine was chosen to be the first to bomb Berlin in daylight. In bombs delivered per production man-hour, per crew man-hour and per gallon of fuel the Mosquito represents one of the most striking war economies yet.

Air Chief Marshal Sir Sholto Douglas has now revealed that a crack Mosquito squadron has been doing fine work with its cannons from Malta over Sicily and along the African coast, and "generally making a nuisance of itself."

TRANSPORT AND PRODUCTION

Following the meeting reported in O.J. No. 33, page 1, on Jan. 25 Sir Havilland Hiley, Regional Transport Commissioner, Cambridge, presided over a further meeting of the interests concerned in home-to-factory transport difficulties of the Aircraft Divn. He stressed the importance of husbanding our supplies of petrol and rubber, which would become of supreme importance for the coming offensive. Rubber supplies are so short that wastage is criminal. He was disappointed with the small use of the railway halt which had been built for de Havilland employees. He wanted to find out why the railway and buses were not used more, and why private cars were not used less.

Mr. Grinham said that everyone realised the need for saving rubber and petrol and was only too anxious to help in this direction, providing the transport arrangements are adequate, and the workpeople are able to get in on time in the morning and home again at night in a reasonable period of time after working overtime. There were several cases where two to three hours' travelling time was being experienced, and as a result production is definitely suffering. This made the question of transport one of paramount importance, for until this was solved we were faced with a constant difficulty.

The workers' representatives then stated their difficulties, and each route was discussed in detail. These details, with the conclusions reached, are contained in the minutes of the meeting and are posted on the Joint Production Committee Notice Boards throughout the Aircraft Divn. The solution of the transport question obviously cannot be left to the transport authorities alone.

FUEL SAVING SUMMARIES WANTED

Mr. J. Gardner reports that in the Aircraft Divn. premises which he looks after the saving in fuel up to Christmas was 21½ per cent. compared with the same period in 1941, and this despite the rising curve of production. But since Christmas the saving has definitely dropped, mainly because nobody will accept less than the full standard of heating laid down in the Factory Acts. Mr. Gardner is not satisfied and hopes for fuller co-operation from all concerned in this vital economy. Will other plant supervisors and the superintendents of smaller depots please send in to Mr. Dupré at head office their brief reports on steps taken at their own premises up to December 31, so that these may be reviewed in O.J.

THE UBIQUITOUS TIGER

There are four Tiger Moths in service at an Elementary Flying Training School in the West Country. Between them,

these four have flown a total of nearly thirteen thousand flying hours—and they're still going strong.

Their numbers are BB791, BB860, BB742 and BB694.

BB675 is a redoubtable veteran. She was registered on October 11, 1935, and her civil number was G-ADOI. She has 2,600 hours to her credit.

DE 241, by way of experiment, was fitted up with a full blind-flying instrument panel. She was the first Moth to be so equipped, and the experiment has proved a success.

Tiger T. 6683 survived a very nasty experience, coming in to land after a flight, she collided with another aircraft. The Moth's top main-plane and fuel tank were damaged. The other aircraft was not merely damaged—it was cut in two. However, forty-eight hours later, the sturdy Tiger was repaired and back in service.

Moth No. 4962 can claim to have defied a German raider. A cadet pilot making his first night solo trip was suddenly confronted by a Nazi swooping from a cloud. Although the enemy attacked fiercely and the British pilot was wounded, he succeeded in evading his formidable opponent and brought his unarmed machine safe home.

SEEING THE STINGERS

On Jan. 30 and 31 one of the main factories of the Aircraft Divn. was visited by the Royal Observer Corps unit from a neighbouring town. The tool experts from one of our dispersed factories have also visited a big Mosquito assembly depot and test field.

R.A.F. officers were at two of our factories on Feb. 1. A Spitfire pilot from Malta was at our Aircraft Repair Depot during the special week they organised to raise a useful donation for the R.A.F. Benevolent Fund, and two Boston pilots visited one of the large wing factories in the S.A.G. The latter told how Bostons share the work of our Mosquitoes, and how Boston crews were envious of the Mosquito speed and performance. One of the speakers said he hoped to be flying Mosquitoes shortly.

THE TOOLS AND THE JOB : Tool-room personnel from a dispersed shop on a visit to one of the Mosquito test fields in Great Britain. Mrs. Davies is acting as hostess.

POLAND CAN NEVER FORGET

The *Mosquito*, which is the house magazine of our company in Toronto, recently published notes from some of our workers there on memories of their previous Christmases. Some Polish aircraft engineers who escaped in 1939–40 and joined our Canadian company are among the contributors, and the following is what one of them, Mieczyslaw Barcik (Bench Fitting Shop), remembers of Christmas, 1939 :

" With the crash of bombs and the ruins of Poland still fresh in our memories, I spent Christmas, 1939, in the company of two hundred and fifty other human remnants of the Polish Air Force, in Athens, Greece, as a military refugee hiding from the long arm of the German Gestapo. As a body of pilots, we were attempting to make a break for France, and on Christmas Eve we received secret orders to have our kit ready for an immediate move. Three of us pooled our meagre funds and bought bread, cheese and a bottle each of wine and whiskey. In order to maintain strict secrecy, we were told to split up into two's and three's and proceed to Porte Pireus, a Greek port, and if riding trains, we were cautioned not to speak to anyone and not to let a Polish word escape our lips. It was 3.00 p.m. Christmas Day when we reached the port. In our loneliness and sorrow, we sat on the edge of a cliff and mourned the fall of Poland and the fate of our loved ones. It was a Christmas Day I shall never forget because we three grown men cried like babies and finally submerged our grief in whiskey. We drank ourselves to forgetfulness, saying to each other : ' Poland is not lost—perhaps next Christmas we will be back in Poland.' When we boarded our ship at 5.30 p.m. and sailed away from the Greek shores, our national Polish song rang out over the waters from the throats of our rugged air force refugees and a shout went up—' Poland is not lost if we have life.' A few days later we were in France."

MERCHANT NAVY WEEK

The sum raised by the Aircraft Divn. in the week of events in aid of Merchant Seamen's funds, at the end of January, was £233. One of the best features was the talk which Chief Steward Lonsdale gave one evening about his experience as a prisoner of war on board enemy ships. He had never spoken in public before. Mr. Grinham was present at this gathering and congratulated Mr. Williams, Secretary of the Social Section, on organising it.

CONTRIBUTIONS TO OUR JOB

It has been explained before that the restrictions of the Paper Control do not permit us to include very much of social or general-interest character in O.J. This bulletin is issued, within the regulations, as a memorandum of information and instructions to people throughout our numerous depots (which now run into several scores) and its purpose is to increase productive efficiency. The point is mentioned again to explain why we are not always able to publish contributions in prose and verse which are sent in from time to time. Contributions of a nature calculated to expedite output and increase practical convenience in the factories are conspicuous by their absence, and of course are much appreciated, no matter from what source they arise.

AIRCRAFT DIVISION SPORTS CLUB

We have had enough experience of the new club building now to indicate that this concentration of club facilities outside the works premises is a success. The club was extremely busy in all departments up to early winter, though the blackout and other winter nuisances have kept people at home somewhat in recent weeks. Nevertheless, successful darts tournaments, dances, concerts and other social functions have been held lately and more are in the offing. The Photographic Section will be giving an exhibition shortly. The Rifle Section is shooting for Captain de Havilland's challenge cup. There are four teams playing League football

and a fairly strong Rugby team. The Pig Club, which was one of the rising activities of last year, now has about 100 members and in the Christmas distribution each received about 10 lb. of meat. The latest section to be formed is the Rabbit Club, which already has about 50 members. Somebody asking his way to the Rabbit Club recently got directed to the tennis courts.

PIG-CLUB PRODUCE: Sorting the cuts for the recent distribution. The experts are Mr. Sutterby, who is technical adviser to the club; Mr. Holloway, Secretary; and Mr. Williams, Chairman.

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THE VISTA OF RESPONSIBILITY

The still-growing activities and responsibilities of the de Havilland Company and its associated companies in Australasia, Canada and elsewhere, and the plans and problems of the future, have so increased the volume of administrative duties that fall to be executed by the Managing Director that Mr. Hearle has found it necessary to seek some assistance. Accordingly, and in order logically to divide the general direction of the home company, he has appointed Mr. Nixon and Mr. St. Barbe to be Assistant Managing Directors, the former to be available on general administrative matters in the Aircraft Division and Second Aircraft Group, the latter likewise in the Engine and Propeller Division. Each will continue to be responsible for the matters which he has hitherto controlled, Mr. Nixon as Secretary and Mr. St. Barbe as Business Director of the Company.

DON'T KILL YOUR COMRADES

The following is an extract from a report by a de Havilland Service Department Engineer at an R.A.F. Station on two items of faulty electrical work in a Mosquito :—

(1) **Faulty Wiring.**
The insulation had been removed from the wires entering the switch and they were bare for approximately 1 in. outside the switch, the wires touching one another, causing a short circuit.

(2) **Faulty Switch.**
The switch was also defective and the cannon could have been fired in the safe position even if Defect 1 had not been present.
When parking this aircraft the button was accidently touched (the switch being in the safe position) and

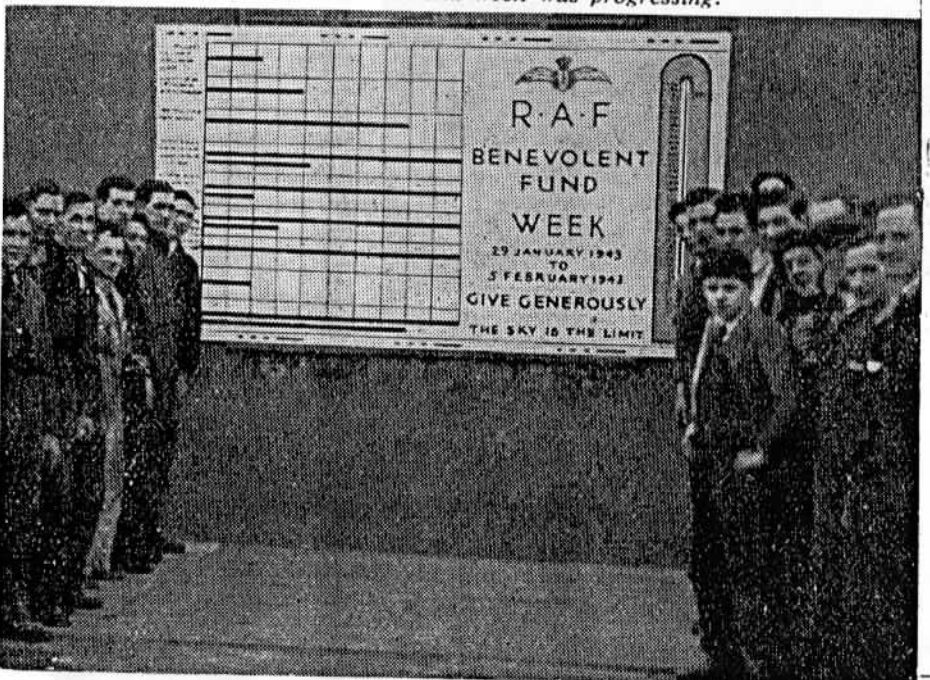
seven rounds were fired, two passing through an airman's cap and at present he is suffering from shock only.

Imagine what would have happened to a Russian or German workman or woman who was traced as being responsible for two faults such as these.

A NOTABLE ACHIEVEMENT

The R.A.F. Benevolent Fund Week at our Aircraft Repair Depot was a great success. So enthusiastically were events and competitions organised, it was at first feared that aircraft and spares production for the period would suffer. However, in spite of all interruptions by the money-raisers, the target output was actually beaten.

Everybody in the Aircraft Repair Depot could see each day how the R.A.F. Benevolent Fund week was progressing.



Mr. E. P. Withers was the organising secretary, and did an immense amount of good work. Mr. G. W. Baker, chairman of the Sports Council, was equally indefatigable in his efforts. Mr. S. Britton was the most successful team captain, by a very narrow margin, and Mr. R. Turton made a grand job of the concert and various auctions. We would like to name all those who contributed so much during the week, but apart from the fact that unfortunately space will not permit, everybody was so wholeheartedly flat out that it is almost wrong to single out any for special mention.

Events included a table tennis exhibition by international champions, a tea-dance, own talent and E.N.S.A. concerts, auctions, bazaars, a whist drive, a talk by a Spitfire pilot from Malta and a greatly enjoyed grand finale party dance in the canteen.

As a result, the Fund has benefited by the sum of £675.

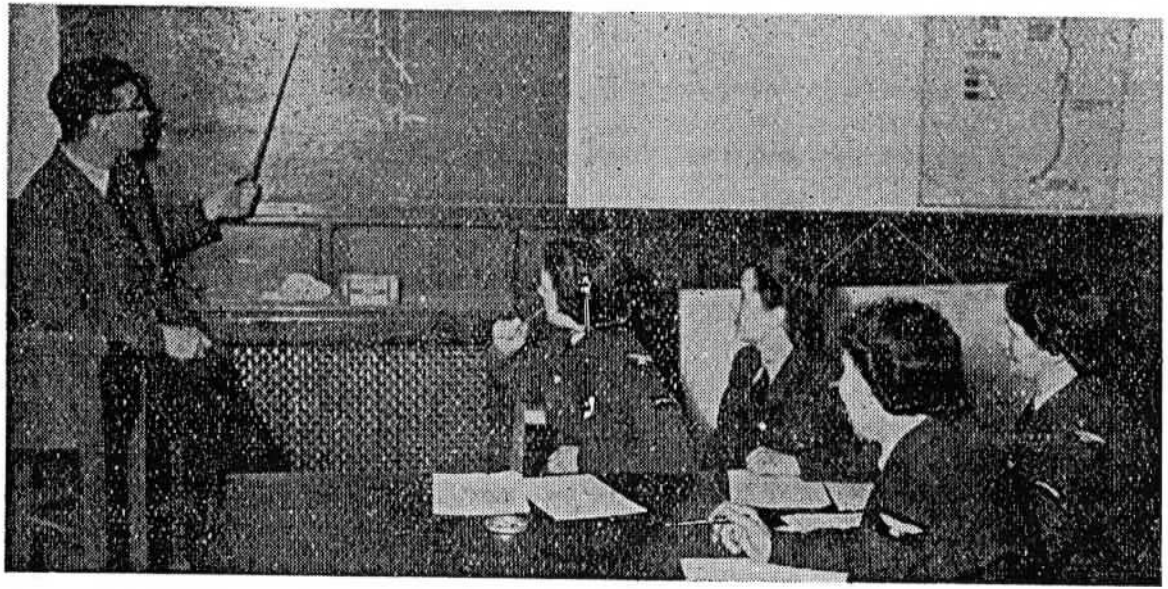
A HIGH AIM

Wings for Victory Savings Week in the London area is to be March 6/13, and the D.H. group of factories based on the E. & P. Division are thrusting ahead with plans to beat all previous records. The total aimed at is £20,000, with the happy thought of paying for a Mosquito An energetic committee is busily devising varied ways to coax money from colleagues as painlessly as possible, and the prospect of achieving the target seems promising. A big dance had already been arranged for Tuesday, March 9, at the Wembley Town Hall, in aid of the Division's popular "Our Boys' Fund," which will now be adjusted to serve two purposes: the immediate profit from the dance for the original aim, and sales of certificates, stamps and raffle tickets to help buy the Mosquito. Tickets (single) cost 3s. 6d. each and can be had from Mr. F. S. Sandford, Receiving Department, E. & P. Division, or Miss K. Timms, Buying Office, E. & P. Experimental Division.

Mr. H. G. Cross, Aircraft Divn., who must be one of the oldest D.H. sheet metal workers. He joined 1922, becoming foreman in 1938. He is now superintendent of the cowling erectingshop. Interchangeability is his password.

Mr. W. Clark, whose job is assembling hydraulic jacks. "Never let an aeroplane down" is his motto.

The skill of these eight men played an important part in producing the first de Havilland propellers, and the success these days of the propeller machine shop is not a little due to their continued efforts. L. to r.: Messrs. J. O. Grint, F. Gardener, P. Sheen, W. Roote, W, Eaton. R. Mills, J. Spencer and W. Brown.



Schoolgirl complexions for Mosquitoes: Four W.A.A.F. fabric specialists undergoing a course of instruction in the external surfaces of the world's fastest bomber, and how to maintain their pristine smoothness. L. to r.: L.A.C.W. Allin, Harris, Grierson and Nicol. Our chief Mosquito ground instructor, Mr. D. W. Richardson, is the lecturer.

Mrs. D. M. Hardyman, joined inspection dept. in 1929 and is the only inspector of her sex to have been with the company on the engine side for so long.

Mrs. E. V. Gilley, storekeeper, Aircra t Divn. For timekeeping and keenness she is exemplary, is well liked and respected. She does very good work within the National Savings Group.

DRAGONS NEVER DIE

The following letter, dated Nov. 10, 1942, was sent by Mr. Arthur Butler, of the Butler Air Transport Co., Sydney, to Major A. Murray Jones, General Manager of the de Havilland Company in Australia :—

" This day eight years ago your firm delivered two D.H.84 aircraft to us.

" In December, 1940, the Royal Australian Air Force impressed one of these. Since then we have operated the Sydney–Charleville Air Mail Service to a 100 per cent. schedule with the remaining Dragon.

" Although this machine has operated under extremely trying climatic conditions, with temperatures from 23°F. to 118°F. in the shade, during the past eight years, when stripped for a complete overhaul this week the plywood fuselage was found to be in splendid airworthy condition, the only replacement being two sections of the rear bottom longerons and the stern post. The reason for replacement was crushing through overtightening of bolts, otherwise these parts were in perfect order. The mainplanes were also in excellent order, ribs being only slightly warped and distorted at the trailing edge. The trailing edges were also replaced owing to warping.

" The fact that the complete overhaul only took one week is in itself proof of the excellent condition of the aircraft, which has now flown 7,889 hours.

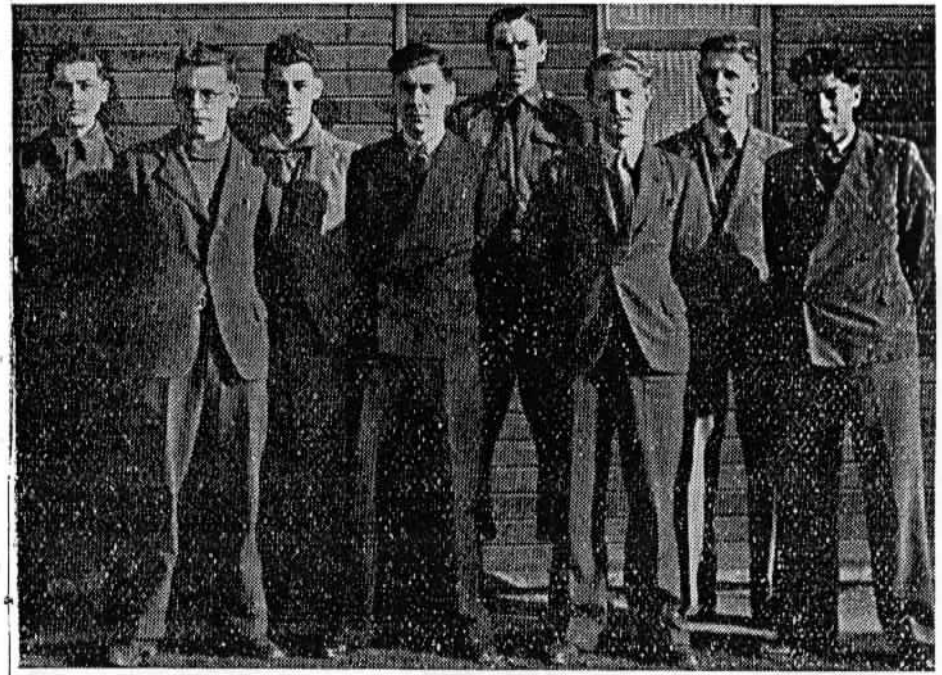
" I may mention that the machine took off again on the service yesterday morning fitted with its original engines, which have also given excellent service."

The Dragon aircraft carries half a ton of load or about six passengers and luggage at 105 m.p.h. for 12 gallons of petrol an hour (nearly 9 m.p.g.) on two Gipsy Majors, and was sold at under £4,000.

FROM THE FRONT LINE

Two officers of Bomber Command have almost completed a tour of a number of Second Aircraft Group and Aircraft

Division factories. They were extremely interested in the standard of workmanship prevailing everywhere, and at each visit they told assembled operators of their operational experiences, which were eagerly listened to. Such visits are stimulating to operators and pilots alike.



TECHNICAL SCHOOL EXAMS.

SUCCESSFUL CANDIDATES :—Congratulations to (L. to R.) W. G. Hearle, K. G. Rendle, N. Williams, S. G. Renew, F. G. Blackburn, D. E. Stewart, K. T. Jackson and A. Conway, the apprentices at our technical school who gained scholarships in the recent examination. Young Blackburn sat for the D.H. exam. and also for Society of British Aircraft Constructors, and passed both; he will take advantage of the S.B.A.C. award. Two years is the period of the courses. A certain number of indentured apprentices are granted scholarships at the technical school each year.

RED ARMY DAY

By official invitation, six operators of the Aircraft Division were chosen through the Joint Production Committee to participate in the Eastern Regional Demonstration on February 21. Representatives of all the fighting services, civil organisations and factory workers were present at a parade, a march-past and a public meeting to pay richly deserved tributes to the valour of the Russian soldiers. It had been the expressed wish of the Government that to avoid large numbers of small celebrations, one should be held in each region to be as national in character as possible We are told the spectacle was indeed a fine one.

PROPELLER INSPECTION MOVE

This essential but not-always-popular department recently went into new quarters with much improved conditions. Interchangeability of parts and reliability of assembled units are much in their hands. Not always popular because they exist to find faults. Indeed, some uncharitable souls contend that they develop an inverted Micawber-like attitude—always looking for something to turn down. Mr. Lineker says inspectors should constantly remind themselves that it is not the amount of work rejected, but the good work passed which counts.

A PAT ON THE BACK

Engineers of the Ministry of Fuel and Power recently went over one of our main Aircraft Division factories. We have been officially informed their report indicates that the plant is being " efficiently run and with due care for fuel economy." As a Government finding this pleased Mr. Gardner very much but he insists that there is scope for even greater economy, particularly where conservation of existing heat is concerned.

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Sir Stafford Cripps (second from left) addressing Aircraft Divn. J.P.C.

A RED LETTER DAY

A welcome visit was paid to some of our factories by the Minister of Aircraft Production, which had to be limited to the period between an early breakfast and mid-afternoon because of his engagements elsewhere. During that short time he was shown a cross-section view of some of our activities. A call at more of the dispersed units would undoubtedly have had an inspiriting effect on the personnel

concerned but unhappily time did not permit a more extensive itinerary. It was a good compromise to muster all the E. & P. Division Group Joint Production Committees at the headquarters' canteen to enable them, as Sir Stafford Cripps said in his broadcast message, to report to others some of the conversation which they had.

The day began soon after 8 a.m. with a call at a propeller blade shop, from where the party, which included some of the Minister's personal staff, our Directors, Mr. J. J. Parkes and Mr. H. J. Nixon, made for the engine and propeller machine and assembly shops. All that could be seen without haste but without loss of time was inspected, and by 9.30 he was in conference with the Joint Production Committees of the various sections. After reminding them of the important function they were called upon to fulfil, Sir Stafford invited questions, suggesting that they be confined to production problems. Restricted time placed a limit to the number that could be asked but such points as the need for more skilled men, more female operators, additional machines of certain types and spare parts for overhaul were either squarely answered or were promised to be looked into. There was also cleared up a misunderstanding at the propeller service depot, where a story had gained ground that a new accounting system sponsored by M.A.P. had caused less work to become available. Actually the facts were that at just about the time when the new system was introduced the changing fortunes of war had resulted in fewer damaged propellers within the area serviced by the depot.

At this point the Minister returned to the administration offices, broadcast a message over the amplifiers to the shops to which reference is made further on, and then left for the Aircraft Division. There the party, guided by Mr. Westbrook and Mr. Grinham, examined some Mosquito work going on. With so high a proportion of dispersed effort Sir Stafford could not be shown more than a part, but enough was seen

Page Two

to make an intelligible picture. Then followed a demonstration flight by Mr. Geoffrey de Havilland, which clearly impressed the visitors. A detailed description of the rest of the programme is not practicable here, but at 12.15 the paint shop was reached where a great number of employees had gathered to hear a short address. A similar arrangement could not be made at the E. & P. Division for lack of a suitable rendezvous within the factory.

The points made by the Minister at both places had much in common. He said of the war that we, the British, are

Page Three

doing very well. Our Russian allies are doing remarkably well. Between us we are both confident of victory, but there is a very hard year of fighting before we can even think of the coming end. All must strive to the utmost if we are to achieve that victory. We must think of what the people of Stalingrad had been through; the people of Chung-King, too, and of what our own brave troops have endured in the Western Desert. If we think of their sufferings, their troubles and the tragedies, then our own rather minor difficulties put themselves in the right proportion. We would then learn the importance of punctuality and sustained hard work to provide material for those people who are doing more than their share in fighting this great battle for the future. He then thanked everybody for what has been done in the past, what is being done now, and the even greater job he was sure would be done in the future.

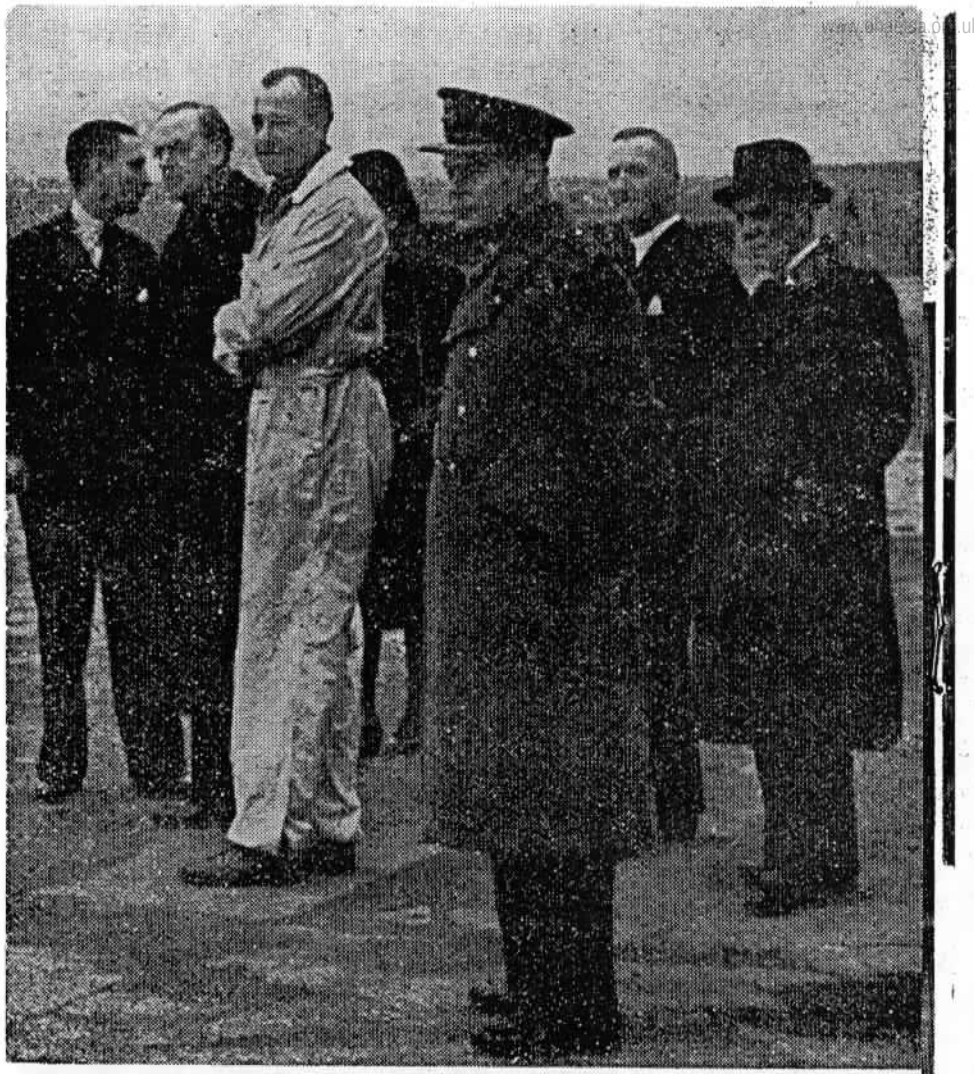
(Left)—Some of those present at the E. & P. Divn. Joint Production Committee's meeting.
(Above)—Sir Stafford talking to assembled operators in a paint shop of the Aircraft Divn.

Before having lunch the Minister met the Aircraft Division Joint Production Committee, where again he invited questions. As had been the case at the earlier E. & P. Division meeting, the operators' representatives urged the adoption

Page Seven

of the Beveridge Report and an early establishment of a second front. Sir Stafford replied that these were hardly questions directly concerned with production problems, but he could not blame them for seizing what seemed to be a good opportunity. Regarding the Beveridge Report the attitude of the Government had been much misrepresented. It had already agreed to adopt a large part of the recommendations, but such things as a comprehensive medical

Page Eight



On the tarmac—(L. to R.) J. W. Stephenson, Major J. S. Buchanan Capt. de Havilland, T. C. L. Westbrook, Sir Stafford Cripps, E. de Havilland, E. G. Grinham, W. Redpath.

service took a great deal of organising which inevitably took time. As to the second front (he preferred to speak of third, fourth and fifth fronts) he could assure his hearers that those concerned with directing the war were much alive to the need but could not give advance information to the enemy by publicly discussing strategical plans.

Problems of more domestic interest followed. Things like transport difficulties were noted, and canteen grumbles ventilated during the good thirty minutes the committee had with Sir Stafford. Then reluctantly but necessarily the meeting closed, for lunch. Afterwards one of the engineering departments was visited for a brief half hour, by which time the need to keep another appointment was too pressing to be resisted and good-bye had to be said.

A LAST - MINUTE SHOUT

Only a couple of days remain of the Engine & Propeller Division's Wings for Victory Week. Remember that every little helps—although the bigger, of course, the better.

AIRCRAFT DIVISION SALVAGE

Mr. Arkell, Salvage Officer, reports with pleasure the appointment of six salvage stewards, individuals sufficiently public spirited to volunteer for these additional duties in the general cause. They are : Messrs. Humphreys (Erecting Shop), Clark (Wood Mill), Brennan (Press & Foundry), Barber (Fitting Shop), Bacon (Sheet Metal), Burrell (Tool Room). These stewards, separated by dispersal, have had an initial meeting and will meet at intervals as needed. Will everyone please give them full support. In a business such as ours it would surprise many to learn what valuable use is made of off-cuts, scrap, etc. Practically speaking every bit of scrap has an important salvage value and the quantities which go with large-scale aircraft production are very considerable. One of the chief problems, as previously emphasised, is that of correct segregation of the different classes of scrap by means of separate bins.

Some posters explaining this point are being put up in all departments.

NEW APPOINTMENTS

The following changes have recently been announced within the organisation, to whom we are all asked to extend full co-operation and assistance :

Mr. J. W. Dale ... Assistant Secretary of the Company.

Aircraft Division.

Mr. R. D. Hudson ... Parts Production Controller.

E. & P. Division.

Mr. G. W. Lineker ... Quality Engineer—Propellers.
Mr. T. W. Payne ... Chief Inspector—Propeller Divn.
Mr. A. Wallace ... Deputy to Mr. Payne.
S/Ldr. J. W. Bell ... Manager Technical Publications (propellers & engines).
Mr. C. R. Burgess ... Service Manager—Propellers.
Mr. E. A. Walters No. 1 Prop. Repair Depot, Works Supt.
Mr. W. F. Finnemore ... Production Control Supt.

Engineering Department.

Mr. D. J. Emerson ... Installation Engineer.
Mr. F. W. Stallard ... Exper. Engineer (propellers).
Mr. A. V. Cleaver ... In charge of Test Admin. Dept.
Mr. J. B. Bucher ... In charge of Investigation Dept.

AN APOLOGY

Unhappily much ill-feeling in some quarters was aroused by the paragraph " Don't kill your comrades," in our last issue (O.J. No. 35, p. 1). Mr. J. Marshall, shop steward, (Aircraft Divn. electricians), wrote to say it was an insult to our Soviet ally and an injustice to the electricians. It can be definitely stated it was not meant to be either. That it could be so interpreted is highly unfortunate, and a sincere apology is proffered to those concerned. It was really intended to stress the need for careful workmanship—and inspection, too—to prevent R.A.F. personnel being exposed to any avoidable risks.

WAR SAVINGS

The Aircraft Divn. League reports that the highlight of the month ending Feb. 15 was undoubtedly the achievement of the Accounting Department team—congratulations to Team Captain Browning and Miss Payne. The committee has decided to compute results differently henceforth, using a percentage method instead of a points system. The team captain will score one point for each new member and one point for each increased contribution, and one point for each lump-sum contributor. The six teams with the highest points will be awarded prizes ranging from six 15s. certificates down to one. The team at the head of the league table (i.e., that with the highest percentage of savers) will be awarded a plaque to be retained for one month, also three 15s. certificates. There will be no prizes for the teams in second and third places. The main advantage of the method is the incentive for obtaining increased contributions as well as new members.

CUTS FROM THE JOINT PRODUCTION COMMITTEE MEETINGS, FEBRUARY

Aircraft Divn. In opening the February meeting, Mr. Grinham extended a welcome to Messrs. Cook and Whiting, joining the committee to represent Tool Room workers. Improvements already secured in the home-to-factory transport problem were reported. It was decided to form a sub-committee to solve outstanding transport difficulties, meeting once weekly until all points are cleared. Discussing the February and March programmes, the decision to augment the night shift was announced, and it was felt that the rota system was the fairest. Essential that night shift should be one third of day shift. To speed up assembly surplus labour from other sections will be concentrated on the line. The fact that 50 per cent. of snags occurring at the end of the line are due to interference by operators with operations other than their own was emphasised. A suggestion was

advanced for workers to be represented on the management of the canteen. Tool Room representatives put forward useful suggestions, including the idea that each member of the J.P.C. should have a suggestion book for shop use ; this was adopted. Mr. Fitzhenry asked that factory talks in daytime be recorded for reproduction to night shifts. This is done wherever possible—and the records are sent to all depots and, where suitable, to subcontractors.

E. & P. Divn. The meeting dealt with a large number of technical points affecting production. Mr. Nixon reported that the Jan. engine production was one engine down on programme ; the propeller output was quite satisfactory. He emphasised the urgency of 4-blader output, as stressed in O.J. previously. The question was raised of the time lost by employees summoned before the Attendance Committee and that committee was asked to consider avoiding delay of individuals by instituting a messenger system. Mr. Nixon congratulated all engaged on Mosquito work for their record output and asked for their continued efforts.

Mr. Snell's Engine Repair Group. The output rate was generally discussed and it was agreed to ask the Ministry for a considerable increase now and a further increase later. Organisation clean-ups to cope with these increases were discussed. To provide an opportunity for foremen and shop stewards to discuss matters between J.P.C. meetings, and to eliminate minor items from the main meetings, it was decided to have a one-hour meeting weekly in each shop for production foremen, foremen inspectors and shop stewards. It was reported that the shortage of labourers had now been practically eliminated in all depots. The question of supervision of women workers was discussed and it was decided not to introduce women charge hands at present.

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OVER-THE-TOP

The target of £20,000, the price of a Mosquito, set for themselves by the E. & P. Division for their "Wings For Victory" Week, was a stiff proposition, but it was exceeded by £393 10s. 6d. An enterprising sub-committee recruited by Mr. Malyon, the savings group secretary, tried many a ruse to attract and maintain interest, and right well they managed it. Mr. Jenkins (chief inspector, engines) also gave great help; with very little notice he organised for each day a dinnertime concert in the canteen of one of the main factories, consisting entirely of talent from within the shops and offices. They were so popular that the suggestion has been heard that a similar concert should be given weekly, a proposal which is being looked into. The high spot of the week was an "all-star variety concert" in the club house on Saturday March 13, when such artists as Flotsam and Jetsam, Leonard Henry and Helen Hill appeared. Their fees were met from the profits of a raffle with 30 savings certificates as prizes, which themselves were paid for from the money thus raised. Admission was free, but restricted to employees who had bought savings certificates during the week. To get a programme a 6d. savings stamp had to be bought. Half way through an "auction" took place, when items like a bottle of whisky, and half-a-dozen eggs, went to those who bid for the biggest number of savings certificates.

Altogether there were many willing helpers. Too many, in fact, for all to be named and thanked here. Mr. Malyon has done that personally. It is of particular interest to note how the final sum of £20,393 was made up. Substantial investments accounted for £7,600. Regular subscriptions (such as savings group collections) amounted to £3,234. Small savings items, usually the most difficult to attract in

large numbers, reached the fine total of £9,559. Last year, in Warships Week (see O.J. No. 13, p. 3) the comparable figure was £2,165. This is a measure of the extra effort made, and congratulations are justly due to all concerned.

THE D.H. SICK BENEFIT SOCIETY

Mr. R. R. Hyder, of the Aircraft Division (inspection dept.) was elected secretary of the sick club 15 years ago, when the membership was 300. It is now nearly 6,000. At the end of last year he felt he could no longer do justice both to his normal duties and to the sick club, and decided to resign. On March 16 Mr. W. E. Nixon presented him with a cheque as tangible proof of the members' appreciation of his hard work over so long a period.

Mr. R. R. Hyder, one of the oldest servants of the company. He joined in 1921

A similar presentation was made by Mr. Wilson at one of the main factories of the E. & P. Division to Mr. C. Foster, who had been assistant secretary for several years, and who also retired at the end of 1942.

Mr. L. S. Hind, Aircraft Divn. (in charge of income tax office), and Mr. H. E. Barron, E. & P. Divn. (wages office), have been appointed secretary and assistant secretary, respectively.

The society has members in all factories ; but employees at S.A.G. and Northern Propeller Divn. are only eligible if transferred from the parent company and if they were members of the society at the time of transfer.

LOST TIME HELPS HITLER

If this paragraph fell into the hands of Goebbels he would probably infer from it that absenteeism is a more serious problem with us than it is. But, as in the broadcast words of Sir Stafford Cripps, every lost hour delays the hour of victory, the following announcement issued by the shop stewards' committee of the E. & P. Engineering Dept. to their own operators is of general interest :

Do You Realize What Time Lost Through Negligence Means ?

To Your Workmates—Every " quarter " you lose means a reduction in the labourer's bonus.

The economics of total war do not allow you to be replaced by another skilled man ; the less time *you* spend on the job, the greater the burden on your mates.

To Your Job—The job is vital or you would not be here—time lost can never be regained.

The article we turn out depends upon what each individual puts into it. Technical pride demands our fullest attention if we are to provide the Services with sufficient of the best weapons.

To Your Fellow-Countrymen—The keynote of total war should be " equality of sacrifice." You are contracting out of this obligation every time you negligently lose time.

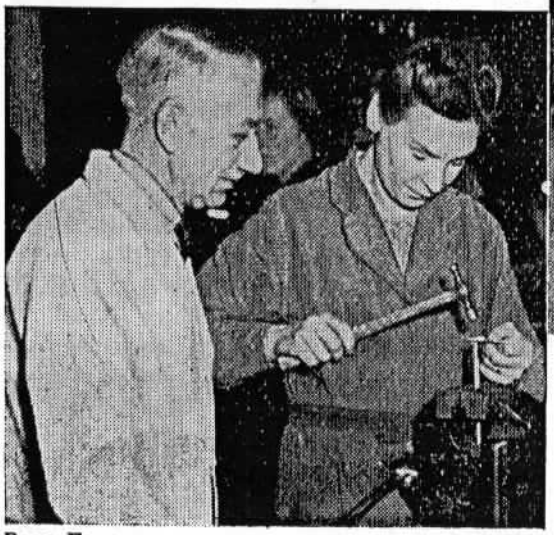
We can have no " Rights " without we accept " Responsibilities." One of these responsibilities is to discipline ourselves for the harmonious prosecution of the War ; bad time-keeping and absenteeism help to throw the works out of gear.

To Our Allies—Time lost means prolonging the War. In Athens alone 200 persons are dying daily—in Russia it is estimated that 7 people die every minute through incidents of War !

Would You Prolong The War For Another Hour ?

L. to R. N. L. Steward, (Forman Grinder), E. A. Williamson, (Grinder), H. Padley, (Grinder), B. J. Poole, (Progress Chaser), R. F. Frazer, (Charge Hand, Progress), A. C. Thompson, (Charge Hand, Press Shop), H. Perry, (Driller), who form part of the hard core o long-experienced hands working on Gipsy engines. They helped in one way or another on some of the earliest ones produced, except Mr. Poole, then on the aircraft side.

Mr. J. P. Cook, who joined the company in 1922 as a detail fitter, was promoted a charge hand at Stag Lane. He is now charge hand of the women's section in the fitting dept. of a main aircraft factory.



Mr. E. H. Harrison, setter-out in the Wood Mill, Aircraft Divn. He was with Grahame-White in 1917 and joined us in 1923. Though one of the first members of the sick club, he has never put in a claim.

Mrs. Mary Martin, engine machine shop, E. & P. Divn. Until 1940 a waitress, she has worked on many Mosquito hydraulic components.

Mrs. R. Taylor (Inspector) and Mrs. L. Skinner (Operator) are bonders in an S. A. G. factory. They are seen working on one of the most difficult bonding operations on the Mosquito Wing.

HELP FOR RUSSIANS

A little while back the Aircraft Division had a week's collection for the Joint Committee for Soviet Aid. £102 10s. was collected and sent to this very worthy cause. Major Roudoi, of the Russian Mission, came on the opening day to address the operators in the canteen at dinner-break. This aroused fine enthusiasm and greatly helped the collection. A recording of this talk is available for others to hear if they wish, by arrangement with the internal relations dept. at Head Office. We should mention with thanks the speedy and willing work done by Mr. Gardner's plant dept., who skilfully at very short notice erected a microphone in the canteen so that all could hear the address.

In acknowledging the cheque, the campaign organiser of the Committee wrote : " We should be glad if you would convey to the workers our warm thanks for this generous gift. Anticipating a good response from our contributors, our treasurer presented Madame Maisky with a cheque for £22,000 as a special birthday gift to the Red Army to be spent on High Pressure Sterilisers which are urgently needed at the front."

STRENGTHENING A HABIT

Production news from Mr. Snell's Engine Repair Group is so usually good, it is hardly surprising to learn that in 20 recent weeks their output equalled an earlier 56 weeks. Hardly surprising we say, but certainly pleasing. Incidentally, two parties from the group lately inspected the test-beds where the engines they had overhauled were being tested. While about it they visited one of the factories of the Aircraft Division as well, making use of public transport facilities to reach it. The fine spell of weather helped to make an instructive tour a pleasant one also.

BUSY TIMES AHEAD

We hear that our Aircraft Repair Depot is likely to be fully occupied for some time to come in striving to maintain

an ambitious output-target they have set themselves, on all the main types they handle. It is only natural that they prefer the busy way, whilst the R.A.F. prefer it the other way.

TO HELP WHERE HELP IS NEEDED

Not long ago we distributed to the many units within our organisation a number of coloured prints of the Mosquito, for sale at a minimum price of 6d. each, the proceeds to go to the R.A.F. Benevolent Fund. The money concerned has now been received at Head Office, amounting to £491 19s. 10d., which has been forwarded to the Fund. The seeming discrepancy of the odd coppers is due to some giving more than the necessary 6d. which accounted for an extra £14 16s. 10d.

The Fund benefited by a further £4, the proceeds of an exhibition by the Aircraft Division Photographic Society, when many interesting examples of members' work were on show.

SILENT SERVICE

An unnoticed service which affects efficiency in our shops and offices is that of the women cleaners in the Aircraft Divn. and many of our other depots. Working mainly between shifts and usually short of time, they have a job which is not without its problems, and it could be made less difficult if we would remember to leave our place of work when we knock off in a state which makes it convenient for the cleaners to clear up. Loose articles on the floor are their biggest bugbear, and sometimes they are in doubt about what is scrap and off-cuts and what is work in hand. When this point was put to a charge hand recently he took it the way it wasn't meant, but we hope this paragraph will be understood because a little thought will save labour all round.

A CORRECTION

A transposition of words in O.J. No. 36 (p. 11) gave a wrong impression of the change in computing results of the

monthly competition in the War Savings League of the Aircraft Divn. It was said that henceforth a percentage method would be used instead of a points system. It's the other way about. The old percentage method is to be dropped. Sorry !

CARELESS TALK

We have received a letter headed " Careless Talk Must Cease—O.J. No. 33," from one who describes himself as a clerk in the catering dept. He says that when on Home Guard night patrol, checking up on parked 'planes, he has " had considerable gratuitous information as regards position of bomb loads on modified types " pointed out to him. He says he mentions the point to assist in some small way to end this sort of thing. And end it really must.

AMPLIFIERS NOT AMPLE ENOUGH

From time to time complaints are received concerning the inadequacy of the broadcasting equipment in some shops of the main factories. It is unhappily true that here and there the reception of music is not good, but the remedy is not easy. In some places acoustics are really bad, and in others, fully to overcome working noises would mean the installation of many additional speakers and extra amplifiers. These are in heavy demand for more essential Services (ships at sea for example) and are therefore hard to get. Experiments are being made in the re-grouping of the loudspeakers and there are a few new ones being added, but it is feared complete satisfaction for everybody is impracticable. Another difficulty not to be overlooked is that residents near certain factories already complain about noise and their convenience cannot be ignored. It must be remembered that the prime object of the system is for air raid warnings, for which it is generally acknowledged to be good.

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THE ROYAL AIR FORCE'S 25TH BIRTHDAY

The following telegram was sent on April 1st to Air Chief Marshal Sir Charles Portal, Chief of Air Staff:—

"Home and Dominion Establishments of the de Havilland Aircraft Company signal their heartiest greetings to the Royal Air Force on its 25th birthday and pledge their continued efforts in its service. Bred from fine stock and unspoiled in its upbringing the Royal Air Force has valiently withstood a gruelling test and now flies in the strength of manhood tempered and prepared for its future responsibilities. de Havilland."

CUTS FROM THE JOINT PRODUCTION COMMITTEES' MARCH MEETINGS

A monthly review of matters discussed of general interest. For reasons of space purely domestic affairs are omitted.

Aircraft Division. Mr. Grinham, chairman, first welcomed Mr. Westbrook, who had suggested being present, and then went on to say he believed the accuracy of the published minutes of these meetings was being questioned. A full report of proceedings was not practicable, so only a digest for reference and guidance was prepared. Accuracy was aimed at, and, he felt, substantially achieved. Mr. Vickery, joint secretary, said he was willing to accept his share of the responsibility for errors (if any) finding their way into the minutes. The trouble was, he said, that the impression was created that the workers' side of the committee was only an adjunct to the management, which was undesirable.

The report from the transport sub-committee was then examined. It said minor improvements had been effected, but much more had to be done. Some satisfaction at the efforts being made existed in the shops. The Regional

Transport Commissioner would have to be approached again, which Mr. Grinham offered to do. A production drive for May was urged by Mr. Lydall, and after discussion it was agreed to have one as soon as possible. A sub-committee would be appointed for the purpose. There was also the suggestion that interested factories should adopt Mosquito squadrons, but the discussion did not develop for lack of a concrete scheme. Mr. Grinham said the management wished to appoint Mr. Adams (inspection dept.) as secretary, with Mrs. O'Dell as stenographer. It was felt this would mean closer contact with the shops. Mr. Vickery said they would be pleased to co-operate with Mr. Adams, and proposed a vote of thanks to Mrs. O'Dell for a fine job of work done, which was carried unanimously. Then Mr. Grinham suggested the J.P. Committee should be elected annually. Mr. Sell said steps were being taken to elect new representatives. It was decided the election would take place in April.

Mr. Westbrook said it was regretted that waiting time was not always shown up by the records, as there was a tendency to hide it. Where it was disclosed it could be remedied. After a general discussion it was agreed that the solution would be found in speeding up the lines. It was thought that the March programme would be reached [it was exceeded—Ed.] and a higher one still would be set for April, which the improved nightshift should make possible.

E. & P. Division. After dealing with items arising out of the last meeting, Mr. Nixon, chairman, said that he was well satisfied with the previous month's engine programme, but not with propeller production, which had been disappointing. This was mainly due to changes from the original programme. All propeller and hydraulic units were urgently wanted, and as much effort as possible should be concentrated on them. Then there was debated an alleged instance of loss of time on a No. 10 ward when one job which had just been transferred to it was broken down to make way for another. It was felt that there had been waste of time and Mr. Perkins was asked to investigate the incident. A report that time is also lost by operators searching for equipment on some operations then came up ; one member expressed the view this sort of thing should be dealt with at the time by shop supervision, and not saved up for J.P.C.meetings with consequent loss of time

A salvage drive for scrap metal was urged, and it was agreed that one man be appointed from the engine division and one from the propeller division to go through all stocks including obsolete jigs and fixtures. The result of the drive would be announced later. The meeting closed after other items of local interest had been discussed and Mr. Nixon asked all to urge on the propeller experimental work on hand.

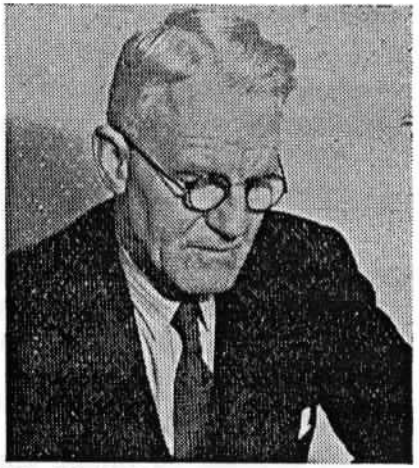
Mr. Snell's Engine Repair Group. It was reported to the committee that the Ministry had agreed to provide for a substantial increase in output. It was thought that the existing labour pool could deal with this programme, but adjustments would be made after three weeks if it was found not to be so. There were now a few able-bodied labourers needed. The committee finally dealt with a long list of queries concerning lifting tackle, supplies of parts, cloakroom facilities, sidcott suits and ventilation problems.

E. & P. DIVISION CHALLENGE SHIELD

The production drive at the E. & P. Division for the Wings for Victory month of March ended with the following zones in the lead : engine drilling (128.48 points), engine capstan and turning (126.65 points), engine milling (125.40 points), propeller scurfing (125.31 points), engine grinding (118.30 points) and engine components (115.13 points). The engine division are thus to be congratulated, for not only does the challenge shield remain with the engine drilling zone (who won it during the North Africa week of Jan. 6/13)

D.H. PERSONALITIES

Miss L. Kerridge, machine shop lathe operator (Aircraft Divn.), who started in 1935 in inspection. Is a busy woman, for added to outside Union secretaryship is a shop steward and member of the J.P.C.



Mr. W. E. King-Meggat, engine shop general foreman. He joined us as tool-trouble man, prop. divn. Later was made foreman in the prop. tool-room and assumed his present post in 1941.

(Right) A. (Bill) Adams, assistant chief inspector (Aircraft Divn.). Joined as inspector in 1923. Has worked on all D.H. prototypes since the Moths. As reported on page 2 is now secretary of the Aircraft Divn. J.P.C (management side).

(Below) The E. & P. "heavy gang," l. to r. in front: W. Harrison (ganger), B. Eames, Nutty Taylor and George King, with J. Laws (plant foreman) on right. E. Eames the fifth member was away when the picture was taken of this skilled gang which has moved thousands of tons of heavy machinery almost with the loving care of a mother. Mr. Laws has been with the company for 16 years.

Mr. W. J. Williams, chief inspector since 1941 of S.A.G., which he joined after long marine engineering and aircraft experience with leading aircraft firms.

Mr. W. Lamb, charge hand in stores, E. & P. Divn. He is one of the old hands, and took charge of the general stores when the Aircraft Divn. moved its home.

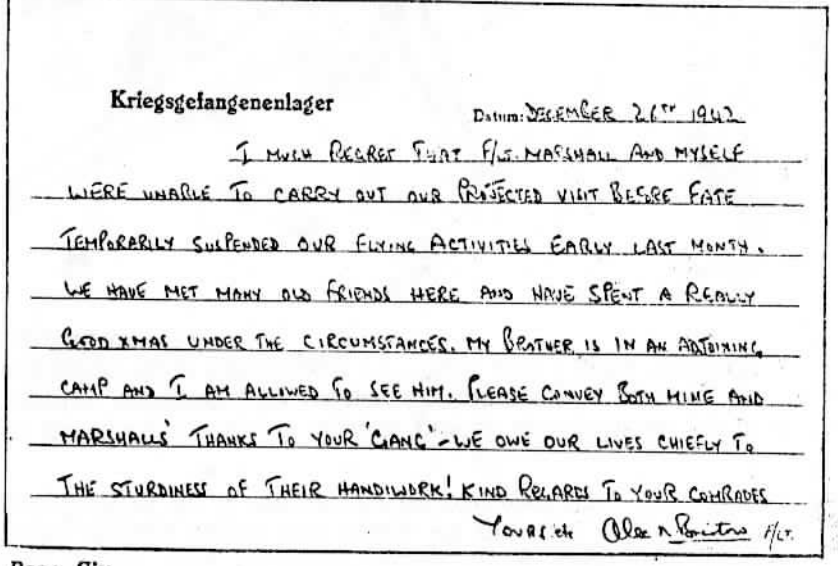
but the division takes five places out of the first six. They are also to be complimented in achieving in March their production target for the fifth month in succession.

THE HAZARDS OF WAR

Here is a reproduction of a post card received from F/Lt. Bristow, now a prisoner of war. He and his navigator had earlier visited some of the shops of the Aircraft Divsion and S.A.G. to describe the Mosquito raid on Oslo.

Almost by the same post came a letter from the mother of W/O Armitage who with S/Ldr. Houlston had visited one or two of our shops to describe some Mosquito operational adventures. A recording of their talks was broadcast to all in the Aircraft Division. A few weeks later they were reported " missing, believed killed."

It was on December 20 that the Minister of Aircraft Production said of work in the factories, " Hard though our work may be, it is the easier part of our struggle for victory."



Kriegsgefangenenlager

Datum: DECEMBER 26TH 1942

I MUCH REGRET THAT F/L. MARSHALL AND MYSELF WERE UNABLE TO CARRY OUT OUR PROJECTED VISIT BEFORE FATE TEMPORARILY SUSPENDED OUR FLYING ACTIVITIES EARLY LAST MONTH. WE HAVE MET MANY OLD FRIENDS HERE AND HAVE SPENT A REALLY GOOD XMAS UNDER THE CIRCUMSTANCES. MY BROTHER IS IN AN ADJOINING CAMP AND I AM ALLOWED TO SEE HIM. PLEASE CONVEY BOTH MINE AND MARSHALL'S THANKS TO YOUR 'GANG' - WE OWE OUR LIVES CHIEFLY TO THE STURDINESS OF THEIR HANDIWORK! KIND REGARDS TO YOUR COMRADES

YOURS etc Alec Bristow F/Lt.

PUT THE MONEY IN SAVINGS INSTEAD

During the J.P.C. (Aircraft Divn.) March meeting the suggestion was made that our factories adopt Mosquito squadrons. The thought behind the wish is an excellent one, but unless the Air Ministry changes its views, it cannot be, chiefly for security reasons. Another point is that with the growing number of stations it would be unfair if some enjoyed facilities denied to others—all or none, sort of thing.

HEAVY FINES FOR ABSENTEEISM

Two operators employed at the Northern Propeller Divn., found guilty of absenteeism and persistent lateness, were each fined £30 and ordered to pay the doctor's expenses. Sickness and transport difficulties were given as excuses but these had been considered inadequate by the works' absentee committee which had recommended the proceedings. Both defendants had been warned twice. It distresses the company to be concerned in incidents like these but such penalties are involved if duties are ignored.

7 MOSQUITOES, 7 DAYS, £7 PER HEAD

The Aircraft Division War Savings Group have decided on £30,000 as their target for Wings for Victory week, May 22–29. This forms part of the target of £140,000 which has been set by the local municipal campaign for that week, and which represents the value of seven Mosquitoes, or £1 per head of the population per day. It has been suggested that the thrifty should put aside a little extra each week between now and May 22, and invest it then.

BIAS FOR DEMOCRACY

Mr. Joe Kelly, bowls green ranger and a vice-president of the Bowls Section (Aircraft Divn.) has arranged to open the bowling green for the season at 2.30 p.m. on Easter Sunday, April 25. All players, families and friends will be welcome. There will be tea and a chat about arrangements for the season. Most competition play is on Sunday afternoons.

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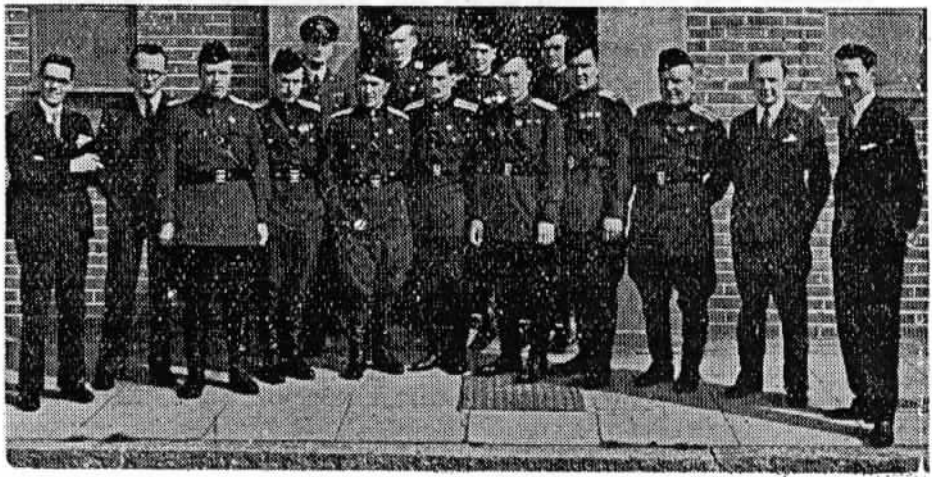
MORE CARE NEEDED

Production in the Aircraft Division, and elsewhere too, is still to a certain extent handicapped because of parts being damaged before they reach the lines or during assembly on the machine. Oil and coolant pipes are by no means the only examples, but are mentioned because of a note received from the shop committee of a dispersed coppersmiths' shop, complaining of a number returned to them for repair. It is of high importance to avoid such waste of man-hours, and perhaps of material as well. O.J. proposes from time to time to call attention to similar items tending to injure output.

We were pleased to welcome the other day these Russian pilot officers and flight engineers at our Engine and Propeller Division. They were on a short visit to this country inspecting factories in which they were interested. Many of them are renowned airmen, decorated for conspicuous flying feats. L. to R. front row : Flight Lieutenants Kvartalor, Shutov, Bondarenko, Chekmassov, Polosuhin, Taran, Kolefnikov Back row : Flight Lieutenants Limanov, Polivoda, Ivaschenko. F/O Forter, R.A.F., accompanied them. The D.H. hosts are (L. to R.) Messrs. Kerr, Hopper, Bentley and Meade.



NEW BLOOD

The election of the new Joint Production Committee for the Aircraft Division is to take place on April 29. Voting forms will be included on that day in the pay envelopes of all concerned. A cross should be placed against the name of the candidate preferred, and the form put in the nearest ballot box with the least delay. Only one candidate can be voted for except in the case of Group E where two representatives are required and two crosses should be made. Nomination papers, which were distributed on Monday last (April 19), must be properly completed and returned tomorrow (Friday) to Mr. Trounce (shop steward, erecting shop) or to Mr. Adams (inspection office).

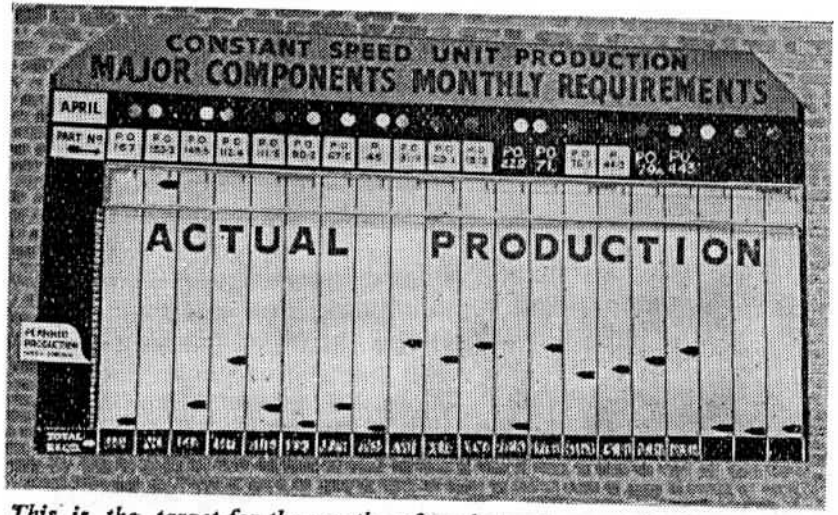
It has been said that not everybody knows the purpose of a joint production committee. It is a body representing the workpeople and the management in equal numbers to consult and advise on matters relating to production and efficiency within the factory. The questions discussed are such things as the maximum use of existing machinery ; the upkeep of fixtures, jigs, tools and gauges ; improvement in methods of production ; efficient use of the maximum number of productive hours ; elimination of scrap and waste ; and the best use of the material available. It does not discuss matters like wages and other things for which the machinery of negotiation has long existed in other forms.

All in the shops concerned who are entitled to vote should not fail to do so.

DISTINGUISHED VISITORS

The E. & P. Division were paid a visit a few days ago by a South African rugger international from Fighter Command, and a squadron leader from Bomber Command who had made 62 operational flights over Germany, six of them

to Berlin. They took the opportunity to present the challenge shield won in March to the engine drilling section, in the persons of Mrs. Wyldbore (section captain) and Mr. J. W. (Nobby) Clark (chargehand). Later the same day they inaugurated a target-for-the-month at a constant speed governor unit shop, from which more and yet more output is wanted. Still later they were to have seen for themselves how propeller blades were made but circumstances within the shop stopped the plan. They made the visit, however, a day or two later, and in the course of a short dinnertime talk made the point that nothing justifies allowing personal difficulties to interfere with production.



This is the target-for-the-month referred to above. The large pointer on the left indicates planned weekly progress, while the small arrows show actual day to day progress.

IS IT RESERVE?

An Aircraft Division employee writes :—

I see that O.J. has published one or two letters on general matters lately and, in some trepidation, I venture to put before you a thought I have had for nearly two years.

We have heard and read much praise of the Mosquito from Ministers of Aircraft Production, Members of the Lords and Commons, high officers of the R.A.F. and humble pilots who fly them in battle, from everybody outside de Havillands in fact, but inside our own factories I don't believe I have ever observed any spontaneous expression of appreciation of the quality of the design and engineering work which created this masterpiece, except from one or two of the directors or senior management, when they have been speaking informally at gatherings, etc. I have read remarks occasionally in O.J. praising our retiring technicians, but never in strong words, and I have never heard the theme taken up by the mass of our people.

I am not technical myself, so I am qualified to write this way. Why do we withhold all credit and praise from people in our very midst who have, out of their heads and with no prompting (I might almost say no encouragement) from the Government, designed one of the finest aeroplanes in history, at a time when our country stood in dire need of such a contribution? Is it because we are British and reserved? Or have we the idea that the Mosquito is just another good de Havilland aeroplane, and not the stroke of genius it really is? Or is it, God forbid, that we feel we all have some claim to the credit for the design of this marvellous aircraft, just because we are in de Havillands—and don't want to blow our own trumpet!

No, in my humble opinion, we are just lacking in natural appreciativeness. Candidly, I think it is a poor show. The directors and leaders of our design effort dropped their air-transport treasure of 1939, the Flamingo, and without a sigh, and without hesitation, decided that a bomber with fighter speed in the place of cumbersome armament and crew would be a good thing and a thing which de Havillands could do. No other aircraft firm in any other country showed this foresight, this conviction. They evolved the clean form, they determined the disposition of wing, engines,

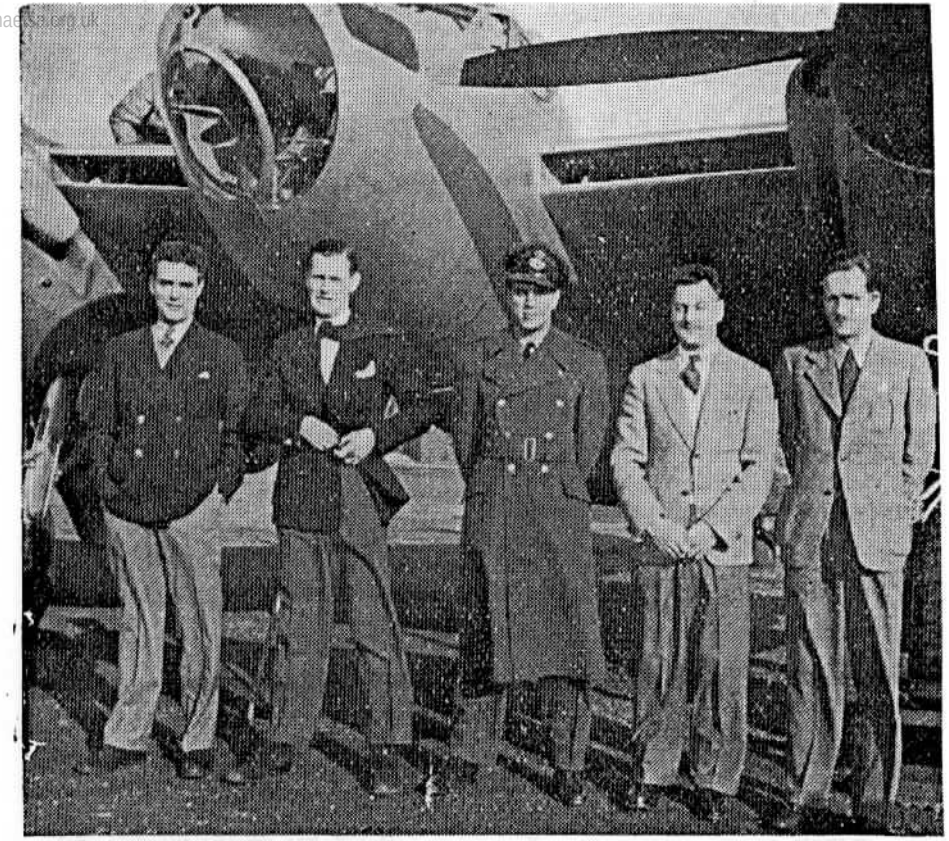
tanks, bombs, radio, crew, and so forth, they calculated the performance, they chose the wood construction, the simple undercarriage, the minimized use for forgings. They had the confidence to press the project upon the powers that be, so that in December, 1939, we were permitted to put pencil to paper and start the design work. They urged the matter all through the unhopeful days of 1940, when we were only allowed to continue with the Mosquito provided it did not interfere with our more serious work—Tiger Moths and Oxfords. It was the technicians who achieved the first prototype flight within eleven months, to whom stands the honour that no major design changes were necessary after flight trials. It was they, the directors and engineers of the firm, who achieved (for all our grumbles) deliveries into the squadrons more quickly than had ever before been done with a new type, in the whole history of the R.A.F. It was the designers and aerodynamics people who foresaw the valuable development possibilities of the type they were creating.

And what do we do, we who are the followers, the progressers, the ordinary people? Do we show any interest in what hours they are working, what pay they get? Do we say a good word for them? Or do we think it, deep down, and keep quiet?

I really *would* like to know, for to me it is a mystery.

PROOF OF SUCCESS

We are glad to hear that the D.H. Technical School Aircraft Division evening classes, which were originally expected to terminate in mid-April, have been authorized by the Board of Education and the County Education Committee to continue until the end of June. The attendance throughout the winter session reached an unusually high percentage, a tribute to the quality of the staff generally, and the keenness of the students.



Pat Fillingham, second from the left, one of our senior test pilots, seen in Canada with P/O George Buerling, D.S.O., D.F.C., D.C.M., and bar (the Malta hero) next to him. The others are D. H. Canadian pilots who are being coached in the special qualities of the Mosquito by Pat who looks thoroughly fit.

HOW MUCH HAVE WE HELPED?

We should like to know just how much we have raised in various ways, since the war began, for the R.A.F. Benevolent Fund. The following is a list of the larger sums which have been sent in from various D.H. efforts :—

	£	s.	d.
Dec. 17, 1942—Sale of Mr. Tom Clark's Notes on Timber Selection	15	0	3
Sept. 21–28, 1941—Aircraft Divn. effort ...	1,000	0	0
Sept. 12–20, 1942—Aircraft Divn. effort ...	394	7	0
March, 1943—Sale of Mosquito coloured picture (all Divisions)	405	19	10½
Jan. 12, 1943—Collection by Mr. Bagnelle, Aircraft Divin.	3	15	0
Feb. 21, 1943—Collection by Home Guard	3	0	0
July–Dec., 1941—Proceeds from weekly dances, Aircraft Divn., through Miss Chapman and Mrs. Holloway ...	46	4	3
Nov., 1942–Feb., 1943—Concert party ...	8	11	6
Oct., 1941—E. & P. Divn. Raffle ...	32	15	0
Dec., 1941—E. & P. Divn. Rugby Section	5	11	0
Dec., 1941—E. & P. Divn. Boxing Section	33	11	6
Dec., 1941—E. & P. Divn. Christmas Draw	63	10	9
Jan., 1942—E. & P. Divn. Football Section	1	2	4
March, 1942—E. & P. Divn. Ladies' Section	10	10	0
April, 1942—E. & P. Divn. Amateur Dram. Society	105	0	0
Sept., 1942—E. & P. Divn. Amateur Dram. Society	5	15	8
Jan., 1943—E. & P. Divn. Orchestral Soc.	5	0	0
Feb., 1943—E. & P. Divn. Engine Machine Shop	10	0	0
Dec., 1942—Northern Propeller Division effort	1,281	9	10
Jan.–Feb., 1943—Aircraft Repair Group effort	700	0	0
Dec., 1942—Sale of reproductions of Frank Wootton's oil paintings of aircraft equipped with D.H. propellers ...	2,250	0	0
	£6,381	3	11½

There are some small sums still to be paid in. But there must be other sums, already paid in from various D.H. clubs and depots, which have not been mentioned in the above list, and the editor of O.J. would be very pleased to have details of them with a view to compiling a complete list.

AN ATTRACTIVE AWARD

The plaque illustrated is awarded each month to the Aircraft Division war savings league team with the highest percentage of members. The service dept. (captained by Mr. H. H. Cox) was the first to win it, having 100 per cent. membership during the month ending March 15—not for the first time. The plaque, which is about 12 ins. high, was designed by Mr. Colley, of the flying school, and handcarved by him out of a solid piece of English oak. Congratulations to Mr. Cox and thanks to Mr. Colley.

The savings group was formed in 1940 and when this was being written the first £100,000 worth of national savings certificates had been sold.

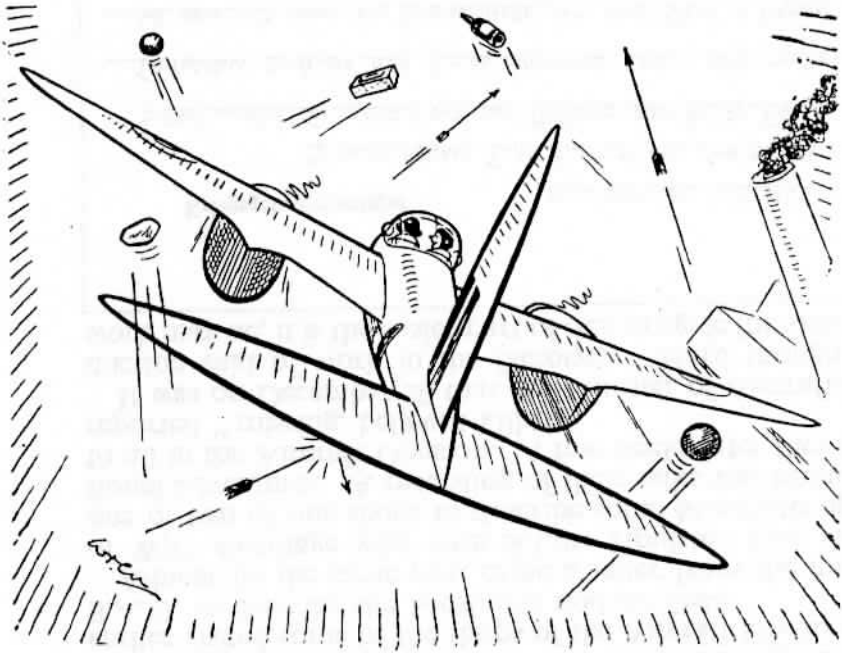
A USEFUL REMINDER

Many of the clerical workers of the Aircraft Division and S.A.G. went to a short exhibition, including a playlet and films, the purpose of which was to stress that their work is

a vital link in the chain of production. We all know that without quick and accurate office work even the best equipped factory could not reach its planned output, but the people who do it are apt to be overlooked.

* * *

The newspapers report that a poster competition by a U.S. motor company, to reduce absenteeism, was won by an employee with the slogan : " You can't spell vicTory with an absent T."



"Y'know, it wouldn't surprise me if the war was over this year!"

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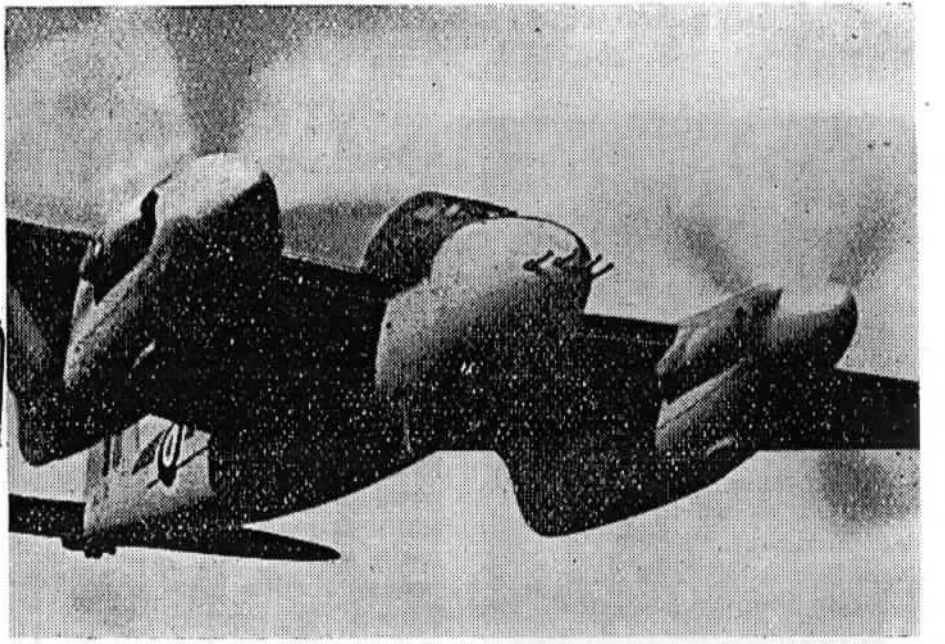


Concentrated Fire Power in the Mosquito Fighter. Four machine guns and our cannon can be clearly seen in the picture.

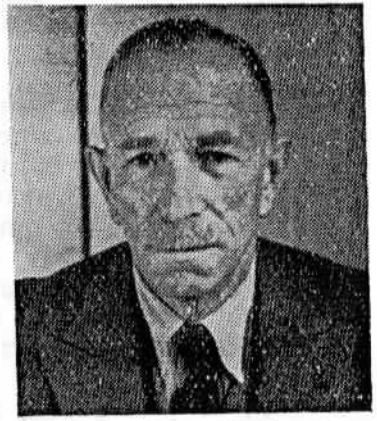
four

FRONT PAGE NEWS

The national press this morning for the first time has been permitted to publish constructional information, drawings and detail photographs of the Mosquito. In anticipation, a press party was welcomed a few days before to see the fighter and bomber versions in production, the first press visit to any de Havilland factory since the war began. Photographs of the fighter version are now released.

Capt. G. de Havilland

The following important facts are made known for the first time. The Mosquito is the fastest aircraft in operation in the world. The design was not started until after the beginning of the war, so the 22 months taken from the drawing board to operations against the enemy represents a world record for quickness. The Mosquito has the most widely dispersed production of any aircraft to-day. It is in service in several versions : as a day and night bomber ; a long-range day and night fighter, and intruder, etc., with varying roles. The basic fighter has four 20 mm. cannon and four .303 machine-guns all mounted in the fuselage nose, giving highly concentrated fire. The basic bomber carries 2,000 lb. of bombs with a fuel range which brings practically the whole of Germany within its reach. It is, therefore, the most versatile long-range first-line aircraft in the world to-day.



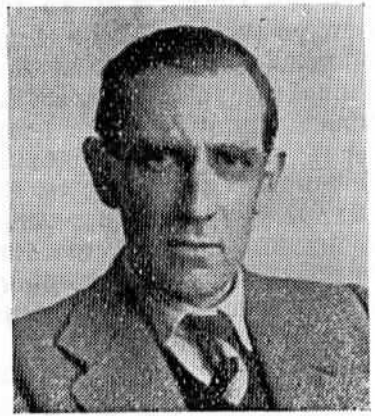
Mr. C. C. Walker, chief engineer

The design team of the de Havilland Aircraft Company is headed by Captain Geoffrey de Havilland (who designed his first machine in 1908 and created several most successful and most extensively employed types in the 1914/1918 war), Mr. C. C. Walker chief engineer

and founder-director of the Company, Mr. R. E. Bishop, chief designer, and Mr. R. M. Clarkson, assistant chief engineer and head of aerodynamics department.

It was they who conceived the design formula of the Mosquito in the first few weeks of this war. The idea was to create around two Rolls-Royce Merlins a small, clean, bombing aircraft with useful range and bomb load, which would be faster than contemporary fighters. The fighter version was a natural development from the bomber version. Under Mr. Bishop much of the design responsibility stands to the credit of Messrs. C. T. Wilkins and W. A. Tamblin.

Mr. R. E. Bishop, chief designer



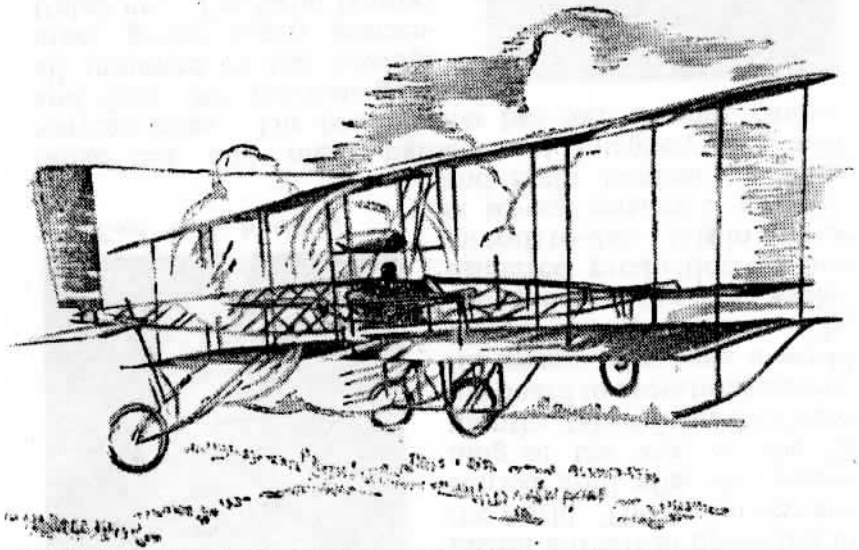
Mr. R. M. Clarkson, head of aerodynamics dept.

The de Havilland Company was allowed by the Air Ministry and Ministry of Aircraft Production to proceed with the design, and although the Company were given several changes of instruction as to how the first few aircraft ordered were to be finished (which meant building and flying several fighter and bomber prototypes) the Mosquito was actually in operation duty against the enemy within 22 months from the start of the design work.

Wood construction was chosen for these three main

reasons : to get more quickly through design and prototype stages and into production ; to tap new material supplies, and to employ in the aircraft industry a fresh labour group. There were advantages of buoyance, ease of repair, and also the fact that wooden construction lends itself remarkably to dispersed production. Furniture and other woodworking factories, large and small, have turned over to Mosquito work.

The stressed-skin fuselage is similar in structure to the Albatross aircraft of 1937, the weathering durability of which was well known from operating experience in European, Arctic and tropical climates. The form of the Mosquito resembles that of the Albatross and the Comet, of which it is the direct descendant. Wood has other interesting features. To make a wooden airframe with the same strength factors as a metal airframe, spars and other members have to be bulkier, with the result that bullet holes and flak holes



The "de Havilland No. 1" designed by Capt. de Havilland 35 years ago.

represent a smaller percentage of the mass of the member they pierce. This has proved a good thing in practical warfare. Repairs are also easily effected by carpenters of ordinary skill. The natural buoyance of wood is another comfort to aircrews ; Mosquitos have floated for many hours.

Besides its wooden construction the Mosquito embodies other unique features, notable for simplifying manufacture. Dividing the fuselage shell longitudinally simplifies installation work. A compression-rubber type of undercarriage leg which can be made by any ordinary sub-contractor, eliminating high-precision tubing, pistons, valves, etc., has been successfully employed. It is, in fact, a development of the Moth and Dragonfly undercarriage. A simple hydraulic chassis jack made from plain tube and eliminating specialised valve gear, etc., was developed for undercarriage retraction. The use of machined parts, forgings, dural extrusions, and light alloys generally was minimised ; indeed, forgings were practically eliminated by the use of high-strength castings. The stub-wing location of the radiators is good aerodynamically, and permits almost any degree of cabin heating without extra weight.

No aircraft has ever had such dispersal of manufacture, and it can be said to be a United Nations effort. The magnificent Rolls-Royce Merlin engines are now in full production by the famous Packard Company of America. The de Havilland full-feathering constant-speed propellers produced by our Propeller Division are of the type created by the Hamilton Company of America. The de Havilland Company in Australia also has big works producing these propellers for the Pacific war fronts.

GOOD JUDGES

It is interesting that at least 20 towns and areas have chosen Mosquitos as targets for their Wings for Victory Weeks, and the total number aimed at is 339.

CUTS FROM THE JOINT PRODUCTION COMMITTEES' APRIL MEETINGS

A monthly review of matters discussed of general interest. For reasons of space purely domestic affairs are omitted.

Aircraft Division. To begin with, the sub-committee appointed to plan the proposed production drive made its report. It was proposed that the whole of the month of June next be devoted to it; that all production shops should compete with each other for a shield to be awarded to the most successful; and that non-production shops should have a separate competition of a kind still to be planned. The scheme was approved and left in the hands of the sub-committee until after the election of the new Joint Production Committee.

As this was to be the last meeting, a review of the work of the Committee for the past 12 months was made. Time-keeping and clocking, debated at the first meeting, was still a difficulty. The average weekly-hours remained lower than was fair and reasonable, and efforts should be made for an increase of at least an average of 3 hours weekly. The attendance committee formed at that time was reported by Mr. Allardyce to be working well. Additional tea kiosks had been installed, and more yet were planned, which would save wasted time. The Committee had dealt with such questions as women's training (to which still more attention must be given); transport (where some progress had been made but more remained to be done); supervision of breaks (which still was not good), and increase of the night-shift. At a later meeting the question of defective work had been discussed, and some improvement had resulted, but there were still instances of bad workmanship. It is not well enough known that defective work honestly brought to the notice of supervision will not handicap the individual, and the mischief can be remedied quickly and loss of time reduced.

E. & P. Division. Mr. Nixon stated that a new representative would have to be elected by the blade shop, in place of Mr. Rogers, who had resigned. He introduced Mr. Finnemore, production control superintendent. It was reported that as a result of the suggestion made at the last meeting, 9 tons of scrap metal had been despatched from the Propeller Division. The disappointing production curve of that same division had been mainly due to causes he explained, and would he hoped be remedied soon. The shortage of blade grinding labour for the new blade programme made things difficult, and volunteers for the work were invited from those in other departments of the division, who may be seeking a change of occupation.

On the other hand, it was reported that men in the scurfing department were not fully employed. Mr. Nixon gave the reason and said how long it would last. He suggested that in the meantime a rota should be compiled by which a number of men could take turn and turn about in other work in the machine shop.

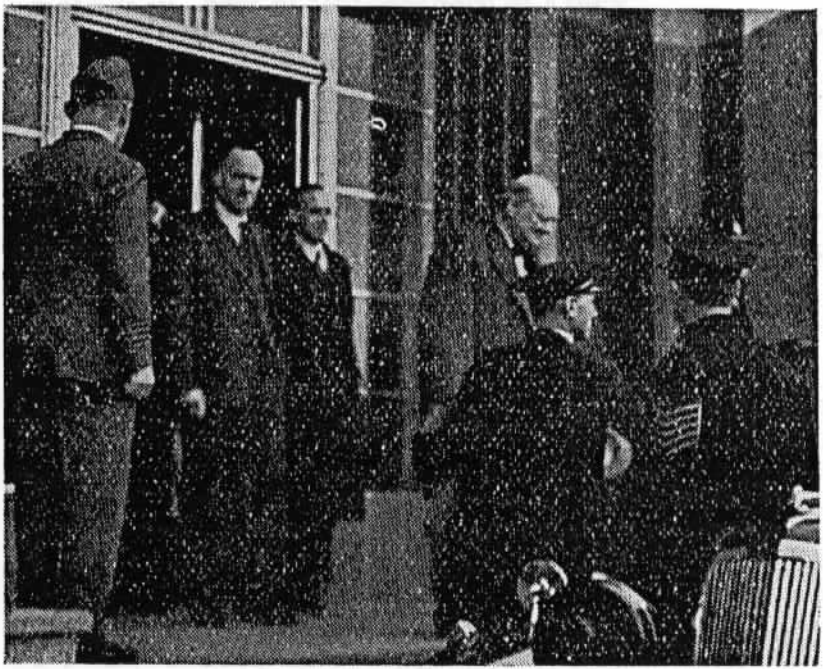
This question of finding alternative work was fully discussed. It was explained that very often operatives disliked the other work available, and therefore tended to avoid booked waiting time. So far as records went the volume of waiting time throughout the division was at a satisfactory low level, but the opinion was expressed by some with practical knowledge that there was a great deal of hidden waiting time. It was urged that everybody waiting work should make a point of asking their foremen and charge-hands for other work.

MORE WILL BE WANTED

In a recent letter to Dr. Thompson thanking him for the highly successful collections of blood from the Aircraft and E. & P. Divisions, the N.E. London Blood Supply Depot said that on the previous Thursday they had sent 600 bottles of dried plasma to the British Armies in North Africa—representing the contributions of approximately 1,350 donors.

FRIENDLY RIVALRY

The Aircraft Division Sports Club recently entertained some of the Free French Navy. A tea and dance was preceded by Mr. W. E. Nixon kicking off for a football match, which we just won by 3 goals to 2, and during which the de Havilland Silver Band played. The day was voted a success in a big way by all concerned.



We may not mention where and when the visit took place, but here is a picture of Mr. Churchill about to enter his car recently, with Captain de Havilland in the background. It was a great pleasure to some of us to see him.

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WHAT THE R.A.F. THINK

The following letter has been sent us by the commanding officer of a famous Mosquito day-bomber squadron :—

As a general description of the Mosquito has now been published in the press, you may be interested to hear a few details about the behaviour of the Mark IV bomber version in action.

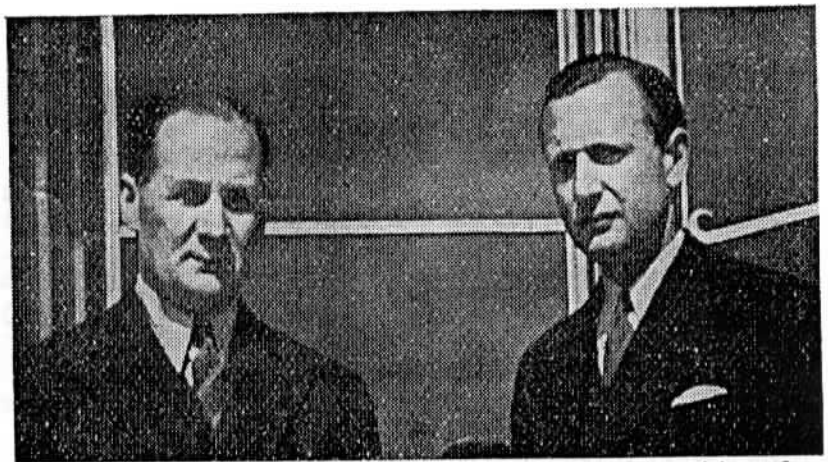
The Mosquito bomber is, in every way, an outstanding aeroplane—easy to fly, highly manœuvrable, fast, and completely free from vices of any sort. From our point of view it has a further quality, a highly important one in war time—and that is an extraordinary capacity for taking a knocking about. Owing to the high speed and roof-top height at which defended areas are crossed, the Mosquito very often tends to be immune from flak, but there are, of course, occasions when someone " cops a packet." I myself had an experience of this, a short time ago ; while approaching a target at approximately 100 feet above the ground, with the bomb doors open, my aircraft was hit by three Bofors shells. Apart from the distinct thuds as the shells exploded and a rather unpleasant smell of petrol, the behaviour of the aircraft after impact appeared to be normal and the bombs were dropped successfully. Actual damage was as follows : The first shell entered the lower surface of the port mainplane, approximately four feet from the wing tip, and burst inside, removing three square feet of the upper wing surface. The aileron was fortunately undamaged. The second shell hit the port engine nacelle fairly far back, wrecking the undercarriage retraction gear, severing the main oil pipe line and damaging the airscrew pitch control. The instruments on the blind-flying panel went out of action. The third shell entered the fuselage just in front of the tail-plane and severed the tail wheel hydraulic line and the

pressure head line, rendering the airspeed indicator useless. After a while, on the way home, the port engine began to give trouble and eventually it failed. Although the airscrew could not be feathered, a ground speed of almost 200 m.p.h.was maintained on the return journey, and the aircraft was landed in pitch darkness on its belly without the assistance of flaps.

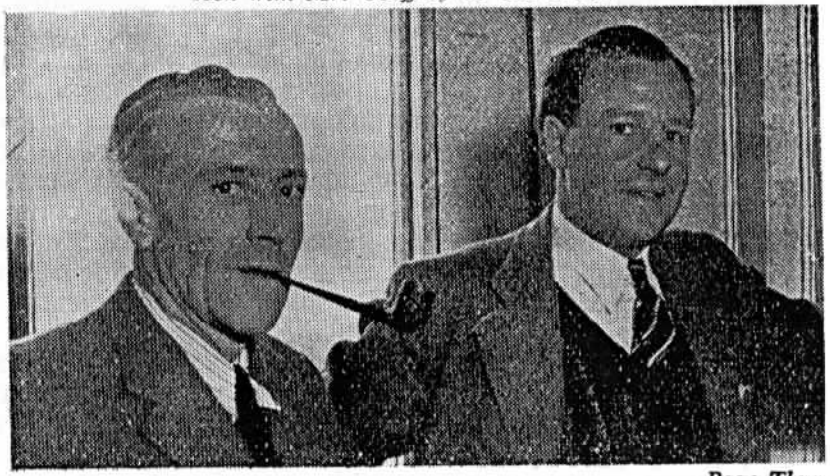
There have been other notable examples. On one occasion a Mosquito went through a set of high tension cables which appeared unexpectedly in the target area, but returned to its base slightly bent, and was landed on the wheels in the dark, without further damage. Another machine was severely damaged on its run up and one engine was put out of action and the bomb release gear failed. This Mosquito was brought home safely on one engine with all the bombs on board, flying only a few feet above the sea, and made a successful landing at night. The pilot reported that the machine " had been a bit sluggish, but it worked all right." Yet another machine had its *elevator* controls severed, but was brought home controlled fore and aft purely by means of the flaps and throttles !

The aeroplane flies so well on one engine that the opinion in this Squadron is that the de Havilland Company must have originally designed it as a single-engined aeroplane, and then stuck another one on for luck. It is entirely free from unpleasant vices at all times, which is a great factor when making night landings when damaged, and owing to the clean design of the underside, it can in emergency be landed on its belly with very little damage, an important factor when considering serviceability. All round, it is a sturdy pugnacious little brute, but thoroughly friendly to its pilot.

In conclusion, the Mosquito represents all that is finest in aeronautical design. It is an aeroplane that could only have been conceived in this country, and combines the British genius for building a practical and straightforward machine with the typical de Havilland flair for producing a first-rate aeroplane that looks right and *is* right.



HOME AGAIN: Atlantic flights are so common now that visitors from our Canadian Company only say " Good morning " when they walk in. Mr. Lee Murray has been in England for a few days, and so has Mr. Hunter, discussing Anglo-Canadian Mosquito production. With Mr. Murray is Mr. Hugh Buckingham, general manager of our New Zealand factory for the past four years, who is now home again. Mr. Hunter said it was a chilly morning in Greenland as he passed. He is here seen with Mr. Geoffrey de Havilland.



MR. GRINHAM IS LEAVING

At the end of May, Mr. E. G. Grinham, General Works Manager of our Aircraft Division, is leaving the company to take up a post as Chief Technical Executive in the Humber, Hillman, Sunbeam, Talbot and Commer group. He has given us much in system, knowledge and goodwill and will be greatly missed by all. He came when we were in the early stages of getting the Mosquito into production, when drawings were incomplete, there was a great deal of jigging and tooling to be done, subcontractors were relatively few in number and were being encouraged into suitable methods, our own dispersed shops were being expanded and organised, production control was being enlarged in scope and tightened in routine, we were investigating the possibilities of employing trainees, especially women, in almost all departments and of training people ourselves in several trades. On top of those problems there was much uncertainty which version or versions of the Mosquitc would be ordered and in what numbers and proportions—we really did not know whether Mosquitoes would be wanted in hundreds or thousands.

Under Mr. Lee Murray, Mr. Grinham took over the management of the factories and ploughed quietly and comfidently into all these problems, straightening the organisation out as the picture grew clearer and the success of the Mosquito became a certainty. Besides his knowledge of production management, gained in long years of service from his apprenticeship at Vickers and onward to his appointment as Chief Engineer and Deputy Managing Director of the Standard Motor Co., Ltd., he was able to bring to bear a quality of patient appreciation of the individual, and for this we owe him many, many thanks. He has asked O.J. to pass on his own thanks to everyone for the help and friendly co-operation they have given him in the past two years. The best of success to him always.

"MORE MOSQUITOES" MONTH

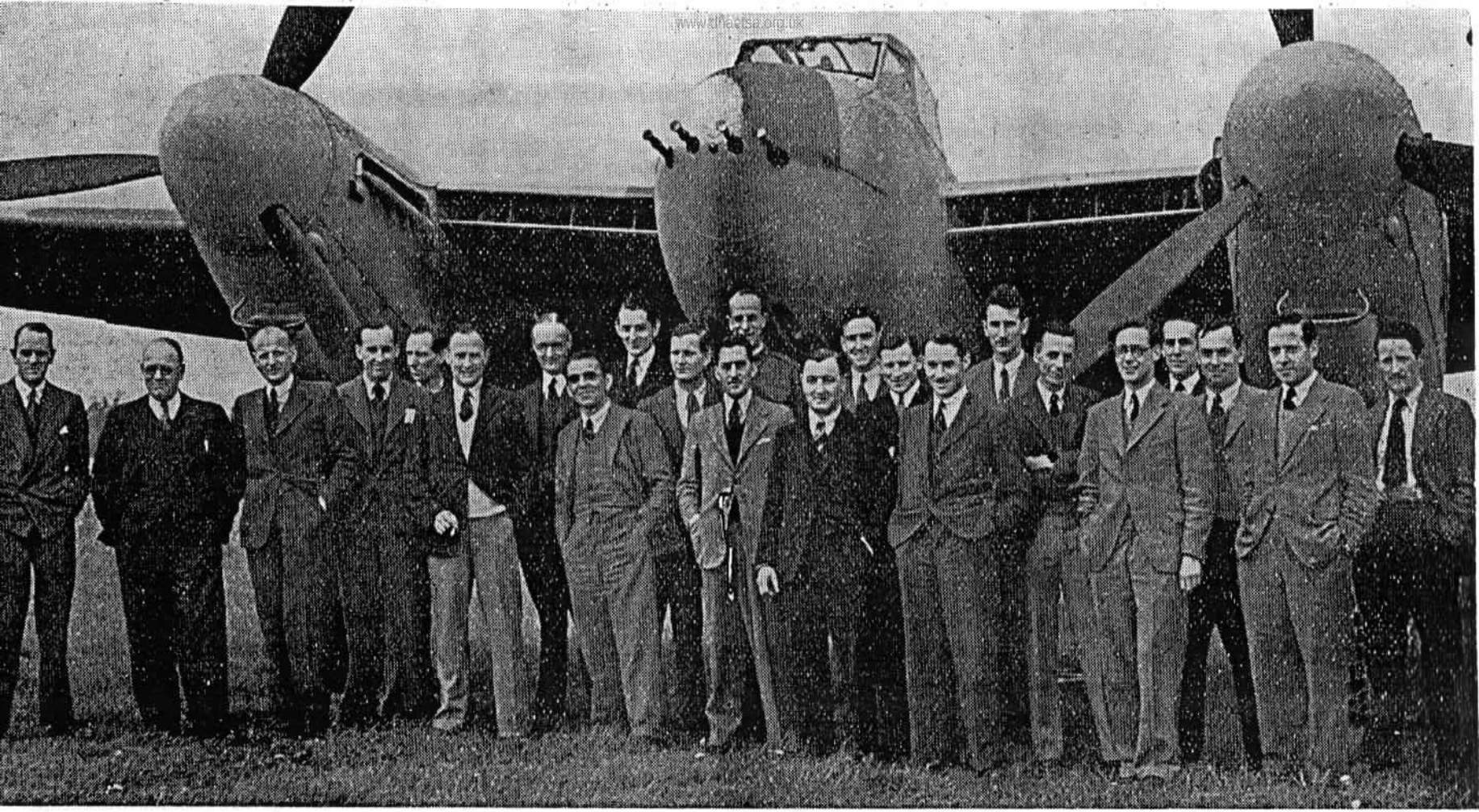
Aircraft Division plans for the production drive in June are getting well ahead under the sub-committee appointed pending the first meeting of the newly elected Joint Production Committee. All sub-contractors have been asked to help as much as they possibly can to enable us to reach the target of a 10 per cent. increase at least. Obviously quality must not be sacrificed for quantity in this push, and we would not embark upon it if a four-week spurt were likely to cause fatigue and reaction. Experience has led us to hope that in a drive of this kind weaknesses in the organisation may be strengthened up with beneficial effects of a permanent nature.

THE ENIGMA OF THE FAR EAST

A D.H. employee writes:

"To anyone who feels that China and her struggle against Japanese aggression (which I find started seriously in 1894 !) are wrapped in mystery may I recommend a book called 'The Great Within,' by Maurice Collis, published in 1941—a book which even I can understand. Not only do I feel that I can at last sense the life and land and philosophy of the Chinese and grasp something of the interaction between China and the West but I have had an intense and lasting enjoyment out of this vivid book. Could I offer other D.H. readers who may have read it a copy of a rough summary which I have made of it to refresh the memory from time to time?"

This summary can be obtained for 1s. through Miss Day, at the D.H. Aircraft Division library, and the whole proceeds will go to a benevolent fund.



WORLD-BEATING TEAM :—Those to whom, under the leadership of Captain de Havilland and Mr. C. C. Walker, credit is mainly due for the creation of the fastest operational aircraft in service in the world have been asked to pose for our camera. Left to right : R. E. Bishop (Chief Designer), F. W. Plumb (Superintendent of Experimental Shop), W. A. Tamblin, P. F. Bryan (Chief Draughtsman), R. M. Clarkson (Assistant Chief Engineer), D. King, J. K. Crewe, G. W. Drury, C. T. Wilkins (Assistant Chief Designer), R. Hutchinson, C. F. Wills, Rex King, R. H. Harper (Chief of Stress Office), D. K. Newman, F. T. Watts, R. M. Hare, M. Herrod-Hempsall, F. J. Hamilton, J. P. Smith, E. H. King, R. J. Nixon, A. G. Peters, G. C. I. Gardiner, Messrs. A. W. Fawcett, J. E. Walker and C. C. Jackson were unfortunately absent when the photograph was taken.

THE NEW J.P.C.

There were 47 candidates nominated for the eleven vacancies for workers' representatives on the new Joint Production Committee of the Aircraft Division. That well shows the more-than-usual interest taken in the ballot. The members elected for the groups are : A—H. Brown ; B—G. Wilson ; C—H. Richards ; D—L. Lowe ; E—P. Hinds, L. Murrell ; F—S. G. Herbert ; G—E. Brock ; H—D. G. Macfarlane ; J—C. R. Watts ; K—H. King ; L—T. Sinclair. In the case of Group L (night shift) for domestic reasons two names were voted for. The one with the biggest poll was T. Sinclair who becomes the sitting member, and the next was T. Hudson who will act as deputy member. The first meeting will be held to-day (Thursday, May 20).

SAVE MONEY, SAVE LIVES

Saturday next, May 22, is the first day of the Aircraft Division Wings for Victory Week. The voluntary workers, the league team captains, group secretaries and others who are giving time and effort to this campaign in response to Mr. Churchill's invitation to back up the work of the R.A.F. hope earnestly that everybody has been putting aside a little extra each week to invest in this special week. What we save is a nest egg for ourselves, at good interest ; and on Savings Certificates it is free of income tax. On purely monetary grounds we should be foolish not to make steady savings in these or any other times. But just now, when the R.A.F. have before them the tremendous and terrible task of the final assault upon the centres of the Nazi doctrine, it is a very little thing to ask of us that we should try to save more than usual in one week, and follow it up by increasing our weekly set-aside. The R.A.F. men do so much in return. They certainly give us good interest on our money. Will everybody see to it that our £30,000 target is more than reached ?

Mr. Tom Clark, senior timber inspector, Aircraft Division. Joined us in 1922, but has been associated with aircraft since 1911. He supervised the building of the D.H.1 and is proud to say he was the first passenger to be taken in it by Capt. de Havilland. His "Notes on Timber Selection" has raised money for the R.A.F.B.F. He is one of the real old-timers who are the backbone of our Company and our industry.

YOU SHOULD KNOW THEM

Right—Mr. J. H. Johnston, who joined Major Halford's staff in 1933 in the engine stress office. In 1941 he took over technical control of engine development testing when the Engineering Department was formed.

Below—Mr. H. W. (Punch) Thomas, who seems to be getting himself out of a hole! He is plant labourer at S. A. G. wing shop, which he was one of the very first to join in 1940.

A LOSS FOR THE TECH. SCHOOL

Mr. A. W. Seeley leaves us after 21 years' service to take up an important post with the Air Registration Board, in connection with the reorganising of their examination syllabuses for ground engineers' licences. Mr. Seeley joined us, in the old Stag Lane erecting shop, in 1922 and was in charge of aircraft electrical services. In the autumn of 1928, in company with F/Lt. Alan T. Eadon, he helped in the inauguration of the de Havilland Aeronautical Technical School, of which he became chief technical instructor, particularly concerned with courses for ground engineers' licences and the navigational, met. and engineering courses for the B pilot's licence. He played a considerable part in the building of the T.K.1, 2, 4 and 5 aircraft, which the students designed. When war broke out and S./Ldr. O. W. Clapp, then principal of the School, was recalled to the Service, Mr. Seeley took charge, but on October 3, 1940, he had the misfortune to be within a few feet of an exploding bomb in an air raid and that put him out of action for 5½ months. He has since been responsible for the evening classes in technical subjects organised in conjunction with county educational authorities, and has started and managed a branch of the School at our Engine and Propeller Division. All good wishes to a very old friend.

* * *

"He dreamed that he was making a long speech at a J.P.C. meeting, and woke up and found that he was."

TO PREVENT SHOCKS:—This is the new production indicator set up in a department making the peculiarly simple compression legs for the Mosquito chassis. The white hand shows planned production day by day and the outside pointer shows actual output. Percentages are used so that this picture may be safely seen by the enemy. Every hundred Mosquitoes calls for 400 compression legs, so we need plenty.

Over a period of weeks four parties made up from Mr. Snell's Engine Repair Group have made rest-day visits to one of our main aircraft assembly shops. After lunch they went on to see the test beds where the engines they had rebuilt were being tested.

* * *

Billets are badly needed for workers in the Aircraft Division. If anybody has, or knows of, living accommodation in suitable districts a real service would be rendered if the names and addresses were given to Mr. Taylor, Employment Department Manager.

* * *

"Give us a lift," said one of the boys on leave from the Arctic just as Mr. Scott King was about to leave a Scottish aerodrome in a Dragonfly. He thus got a ride to a London airfield, having hitch-hiked from Iceland on a bomber, and then spent 2d. on the Tube and 1½d. on a bus to reach his home in North London. "You're earlier than I expected," said his wife as she opened the door.

* * *

A formation of Mosquitoes was making a long sea crossing recently when one pilot had a little engine trouble and stopped the engine by feathering its propeller. Out of courtesy every other pilot in the formation feathered the corresponding propeller, and the whole flight proceeded to their distant landfall on half power, presenting a neat spectacle as they circled their destination aerodrome.

* * *

The Lord gave us two ends to use:
One to think with, one to sit with;
The war depends on which we choose,
Heads we win, tails we lose.

—*From the "Pennsylvania Guardian."*

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THE AIRCRAFT DIVISION GOES TO IT

On Tuesday, June 1, the Aircraft Division production drive, named the " Mosquitos for Victory " month, opened with broadcast messages from Mr. T. C. L. Westbrook, Production Controller—Aircraft, and Mr. R. Sell, shop stewards' chairman. In his talk Mr. Westbrook reaffirmed that no jobs would be returned as a result of times achieved during the drive ; and Mr. Sell, among other things, said " a minimum working week of 52 hours per man would be one of the greatest assets in maintaining for the future the higher production figure we shall achieve in June." Both stressed that the Mosquito must lose nothing of its quality in the drive for greater quantity.

The Division is divided into 20 groups and a Trophy will be awarded to the group which in the month increases its output by the biggest margin above the average of the two months March and April, 1943. There will also be gang (or section) and individual prizes of National Savings Certificates. The best gang (or section) contribution to the drive will be rewarded with 10 certificates, the next will receive 5, and the twenty next in order of merit will each get 1. Entry forms will in due course be circulated. By gang (or section) is meant a body of men regularly employed under the usual chargehand. Additionally, for individuals in those departments employed on work that cannot be judged by output, there will be awarded a certificate to those who make the best contribution to production by the most constant hours of work, general efficiency, and ideas or suggestions. The method by which these will be brought to notice is that each candidate must be nominated by two workmates to the shop foreman or the equivalent, and the judges will be the appropriate foreman, a shop steward, and also a member of the Joint Production

Committee. Where there is no shop steward (such as progress department) his place will be taken by the section leader. Finally a prize, still to be decided upon, will go to the most efficient member of the supervision of the department which wins the Trophy, judged by a similar committee. Progress boards have been erected throughout the Division, to enable all to see how each group is progressing.

DOWNS AND UPS OF THE P.B.I.

The letter below came to an employee of the Company, from a brother who had been reported missing in North Africa. It gives a graphic picture of what happens on the ground, beneath the air umbrella the R.A.F. and the factories are making supreme in the skies.

I am supposing that you would like to hear all about the last few weeks, but I hardly know where to begin. For four weeks now—no, five—I have been unable to write home and so much has happened that I fear there is not enough paper in North Africa to supply my wants !

It was from Medjiz-El-Bab that we started the great attack and for eight days we fought across the most difficult country in the world. High mountains very close together and after taking one position we would find ourselves overlooked from the next and down upon us would come all the stuff that Jerry could muster. Anyway, we advanced fairly methodically, and it was on April 15 that we were given our worst task. A brute of a mountain. We took it during the night and for three hours before dawn we dug and scratched our way into rock and earth in readiness for daylight when we knew we would be shelled to hell. It came all right and I saw one shell land on Company H.Q. and went over to investigate. I heard a shell whizz in front of me and explode 10 yards away and was knocked over like a bowling pin. I felt as if a sledge hammer had landed in my guts and after a moment or two got up only to feel something warm trickling down to my feet so sat down again ! Cor ! slap me

across the groin with a bit of shrapnel ! It bled pretty freely but a stretcher bearer came over and bandaged me up. I was then taken to a dug-out. Two hours later Jerry walked in to say hello ! How he got there is a longish story and can keep but when everyone left me I felt pretty lonely. Six Jerries came to move me away by stretcher but the movement up the hill was seen by our people and the worst hour of my life started when our barrage came down. My God ! out in the open on a stretcher being shot at by our chaps ! It finally stopped and it was then I knew that if I could survive that then nothing in this world would harm me in the future. The family luck was rampant.

I was in a Jerry hospital for a week in Tunis. They were quite decent but it wasn't what they did it was what they didn't do that made life none too pleasant. No washing or change of clothing and dried blood stinks pretty badly, believe you me. I couldn't stomach the food either—their bread is unbelievably bad. When I could hobble about I was taken to an aerodrome 3 days in succession to be flown as a P.O.W. to Germany, but no planes came or went. " Good old Spitfires," I would say as I returned to hospital after waiting all day at the 'drome. Then I was taken to a camp and handed over to the Italians who immediately gave me a blue card to make out to send to my next of kin. I hope you get it as it will be quite a souvenir. I stayed in this camp for 2 weeks. There were 800 of us—34 officers, rest O.R's—in a small building sleeping on straw with a yard 30 x 20 ft. used as a compound with latrines. The conditions were impossible. 8.30 black ersatz coffee unsweetened—midday 2 oz. bully and half a dry loaf. 6.30 spagetti cooked in water and 3 Italian cigarettes a day. We were able to buy cigarettes at 6d. each ! We did our best to keep sickness down but dysentery and colic became rife and the camp became an appalling sight. I didn't get any disease thank the Lord but became dizzy very easily. At last, on Wednesday, May 4, we were packed in trucks

and taken to the harbour and embarked on a 1,500-ton steamer for embarkation to Italy. We were packed in a hold and that night sailed to Cap Bon. At 11.30 the next morning 3 Spitfires found us and flew at wave level and machine-gunned the ship. By the way, all the guards and the crew were Italian but the gunners all German. The din was terriffic ; 2 hours later 15 bombers came and bombed the ship at low level. We then started back for the harbour and on the way were bombed and machine-gunned again and the ship started sinking and was run aground in the Bay of Tunis. The Italians and Germans left us, in all the boats, leaving us about a mile from the shore. We were the only sizable craft in the bay and if a plane had no bombs it would come and machine-gun and cannon us just for a bit of practice. Up to Friday night we were bombed eleven times and over 100 bombs aimed at our puir wee ship. All Friday night we made P.O.W. signs and Red Cross flags from sheets and red leather from the saloon furniture. All this time we had no idea what was happening ashore but we could see that Jerry was blowing up tons of stuff. That night it was decided that 1 officer and 6 men would go ashore in one party and I go alone, to try and contact our people so that the R.A.F. would leave us alone. We also feared that the Navy might join in and start going for us ! The ship, although aground, would appear serviceable to an observer—and we feared that planes flying at 300-odd m.p.h. would not see our pathetic signs. Anyway, a high wind blew up during the night and it was impossible to propel the small craft we had. Next morning, however, I got ashore alone and found that our forward troops were entering Tunis. Anyway, my job was to contact the R.A.F. I searched for locomotion and eventually found a saloon car owned by two Italian colonels. I shoved them out and drove like hell for Tunis, 12 miles away. Every unit I passed on the way I asked to wireless back to Air Command. On entering Tunis I drove towards the Residency and found the streets very

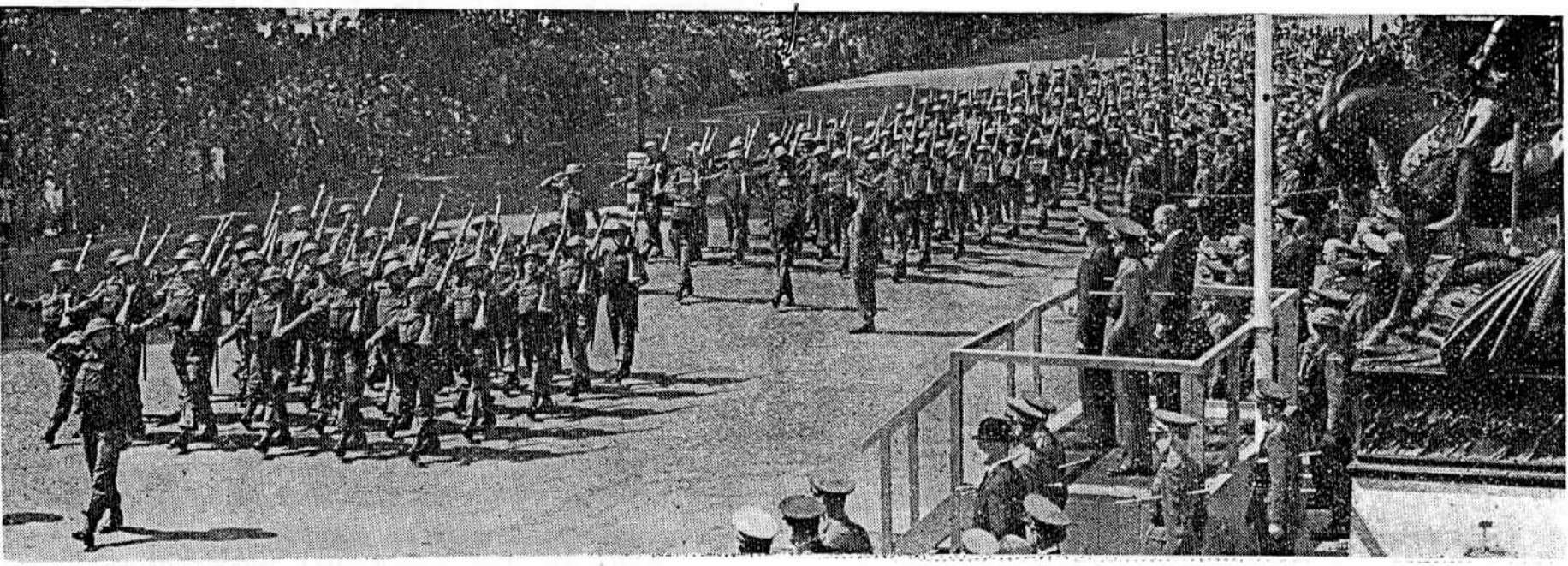
crowded and as they saw my uniform they all surged forward and clapped like mad. It was a funny sound. They just clapped and clapped every car or truck containing British and were frantic with excitement. All the gendarmes saluted and beamed and here was I only a poor ruddy ex-prisoner. Roses were thrown in the car window and I regretted that I hadn't the time to enjoy the spectacle. As I expected, I found the first big army official at the Residency and gave my story and he called over the war correspondents and said : " You've been wanting a story—here it is." A B.B.C. chap also took it down. I do hope that as I was promised you got word that I was O.K. from them. Next, I went to a room and saw a French Admiral or someone like it who gave me due attention and sent a representative to accompany me back to the bay. I was wanting small craft to evacuate the chaps from the ship. We found that Jerry had destroyed all available craft. The fires were terriffic but on looking around I found 4 craft into which Jerries were packing their stuff in readiness for a daylight sail to Sicily. I shot back to an R.A.F. regiment and borrowed some men and returned to practice a little battle drill. The Jerries didn't fight, however, and so the boats were handed over to the local fishermen who started to evacuate our chaps. Whilst I had been away they had been attacked again and the ship now looked like a colander. But during all these days we had only 2 killed and 16 wounded. But the stink in the hold was terrific for there was no sanitation aboard. (We have now formed " The Black Hole of Tunis Club.")

I bought 700 loaves from the local bakers, then shot back to Tunis and arranged food supplies and medical attention from the Army H.Q. This time on entering Tunis I was hailed by a company commander and lord love a duck it was my battn. and TEA was being issued. (Do I smell it out ?). The first since April 15. I was given a royal welcome and was taken to the C.O. who kissed me on both cheeks ! I was given hundreds of fags and as the local population

were continually bringing out bottles of wine I didn't do badly. I felt all this was a dream. The contrast was unbelievable. That night I stayed in the best hotel in Tunis. I had no money but what did that matter. I had already acquired all the petrol and oil I wanted from German dumps at the Docks and my C.O. had given me as long as I wished to get some clothes and have a rest. I was with a motor car and in a town all ready to open its doors to Les Anglais. Next day I met a French couple in the hotel and after half an hour I was in possession of their flat. They have been staying in the hotel as this flat has no shelter and the lease for the hotel rooms has a few more days to run. I was able to get enough food to feed an army for 3 weeks—the car was loaded up by a R.A.S.C. captain who had heard of the P.O.W. ship in Tunis Bay ! All sounds crazy, doesn't it ?

I am absolutely A.1 now. I couldn't sleep the first two nights but the M.O. gave me some sleeping tablets. I'm clean again and spent 10s. in a hairdresser's. I've fed like a King. Shared 4 bottles of wine at every dinner. Had picnics overlooking the Bay. Found that the Mare Nostrum is blue. Seen a 50 mile convoy of Jerry Prisoners. But never again do I wish to be shelled or bombed by our own Army or Air Force. I'm also the only one left from that draft of 12 officers that left Sheringham in February. I knew I would be lucky in this campaign but even I didn't dream that my guardian angel would do so well.

H.M. the King taking the salute, as the Home Guard unit of the E. & P. Division main factory (No. 51 Company) marched past the saluting base at Hyde Park on the third anniversary of their formation. The company was honoured by being selected to represent 19 Bn. Middx. H.G. The officer leading the detachment of 30 is Lieut. J. E. Shaw-Grey. Capt. A. R. Hopkins was in command of the sector company.



CUTS FROM THE JOINT PRODUCTION COMMITTEES' MAY MEETINGS

A monthly review of matters discussed of general interest. For reasons of space purely domestic affairs are omitted.

Aircraft Division. The first meeting of the new committee (see O.J. No. 41, p. 8) took place on May 20, with Mr. Westbrook in the chair. He welcomed the new members and explained their duties, after which the general discussion began. The views were expressed that jobs were not evenly allotted to day and night shifts, and that there was a tendency to leave to the nightshift bad-bonus jobs and ones that were awkward. Mr. Westbrook deplored the possibility and promised an investigation. A member spoke of the constant transfer from one department to another of women trained for special work. Mr. Allardyce explained that for various reasons, women often asked for transfers, particularly on medical grounds for which doctors' certificates were tendered. As much as possible the difficulties of married women were met, and their employment made easier. A report on the matter would be made at the next meeting. Mr. Grinter said defective work and damage to components on assembly are more prevalent than they should be which delays production. A letter received from an employee with a number of suggestions was discussed at length, and it was agreed that the ones concerning production would be investigated.

In reply to a complaint that delay still occurred in getting material from stores and layouts, it was decided that the members of the old sub-committee appointed to deal with the question be asked to resume their duties. Other sub-committees of the 1942/43 J.P.C. which were also asked to continue their work were those dealing with transport problems and the June production drive—with the addition of Mr. Hinds to the latter.

E. & P. Division. Mr. H. J. Nixon had occasion to outline the procedure which should always be adopted by members of the committee who hear of something which may affect the pace of production, or cause a job to fall down : firstly, all relevant details should be ascertained ; then a note giving the details should be sent to the superintendent or foreman concerned. If a satisfactory explanation is not forthcoming, then the matter should be brought before the Joint Production Committee. Members of the committee must always bear in mind that they cannot be expected to solve those problems that are the normal affair of the shops' supervision.

Mr. Nixon then reviewed production and development problems, both engine and propeller, saying he welcomed from all members and employees in general suggestions on design and oil sealing. A letter from the Minister of Aircraft Production was read in which he stressed the importance of providing the spare parts necessary to maintain propellers in service. In any theatre of operations, he said, an aircraft on the ground for lack of a spare part is not only unable to play its part in the battle, but is more vulnerable to enemy attack. After this a number of items of local interest were discussed, and finally the sub-committee which had made certain investigations at the blade shop were thanked for their work.

NEW APPOINTMENTS

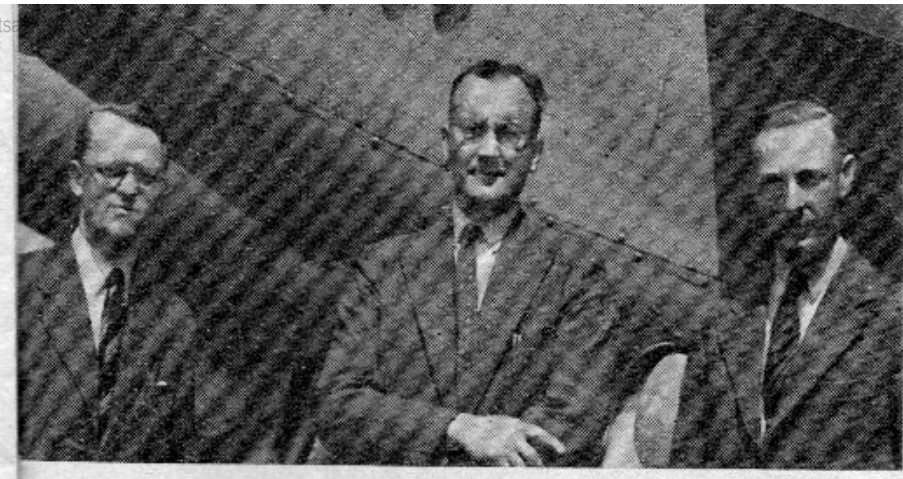
Mr. W. U. Snell has left the engine repair group to take up his appointment as engineering manager of the Propeller Division. He thus takes full responsibility for the design, experimental and development work on de Havilland propellers, a task of great moment in these days of ever-rising speeds and heights. Propulsion experts are already working in the realm of velocities approaching the speed of the sound wave—velocities at which sudden changes of density occur and cause prohibitive drag. We increase the number of propeller blades to avoid excessive tip speeds, and the use of very thin propeller blades helps to stave off this evil of compressibility drag. Some existing propeller applications have a tip speed around 700 m.p.h. ! And with all these

problems our designers have to make propellers which will vary their pitch automatically and smoothly, feather their blades if an engine fails, and be light in weight, sturdy and repairable and easy to maintain in war conditions.

Well, Mr. Snell has a very sound team of engineers to help him carry D.H. propellers to still greater heights. Good luck to him. The appointment will also free Major Halford to concentrate on engine development.

Mr. Hugh Buckingham, recently back from New Zealand (see O.J. No. 41, p. 3), has taken over management of the engine repair group.

A Moving Story. An interesting experiment was undertaken by the E. & P. Divn. plant dept. To save man-hours and material two shelters, each weighing more than 66 tons, were successfully removed from one site to another, instead of the orthodox method of demolishing and rebuilding. Congratulations to all concerned for their enterprise. The work was done by the heavy gang (see O.J. No. 38, p. 5) and maintenance building labour in between their ordinary jobs.



We said last week beneath the picture of the world-beating team which created the Mosquito, that three were unfortunately not included. Here they are: (l. to r.) A. A. Fawcett (wing design work), C. C. Jackson (electrical installation design), J. E. Walker (engine installation design).

The New Yorker said when our advertisement of the Mosquito appeared in that journal a week or two ago:

> "This week the pages of *The New Yorker* welcome the first appearance of one of the oldest and most famous names in aircraft—de Havilland—whose first plane was produced in 1908 and whose plants span the world."

* * *

There once was a corporal who thought that the Mosquito would have been stronger if it had been built of metal. This made little Aubrey laugh and laugh because being in the A.T.C. he knew that there was no difference in strength between a wooden aeroplane and a metal one. The spars and other members simply have to be made bulkier if they are of wood, in order to be equally strong. "Next you'll be telling me that a pound of feathers weighs as much as a pound of lead," said Aubrey's sister, and he laughed and laughed and laughed till he was nearly late on parade.

MORE ARE WANTED

Suggestion boxes have yielded nearly 600 suggestions in the little more than a year since they were installed in the different divisions. There have been some good little ideas, and of course, ideas that are little good. Many bright thoughts could not be adopted because they were impracticable for one reason or another, but about one in five were put into use. Several good schemes could not be considered because of the difficulties of bringing in changes once production is established. Even urgent modifications are not easily incorporated quickly when parts are coming forward that must be used to avoid throwing away many thousands of man-hours. There was a good suggestion about electrical services in the cockpit which could not be considered, not the least because aircraft crews had become accustomed to the existing layout. To change it might endanger their lives if, being faced with a sudden emergency, by habit they depended on something being where it no longer was.

In thinking out suggestions, which are always welcomed, apply your mind's eye to the changes involved and ask yourself these questions : Will the lives of the crews be made easier even at the expense of our own working comfort ? Would pilots have to be re-trained ? Can the change be done easily or would it cause too much upheaval ? Does it mean a lot of scrap ? But, if the idea is good yet in conflict with one or more of these questions, send it in, for it may be valuable for future designs.

* * *

The Aircraft Division "Wings for Victory" week exceeded the best hopes of the organisers. Their target was £30,000 and the final total was £45,487. A grand show !

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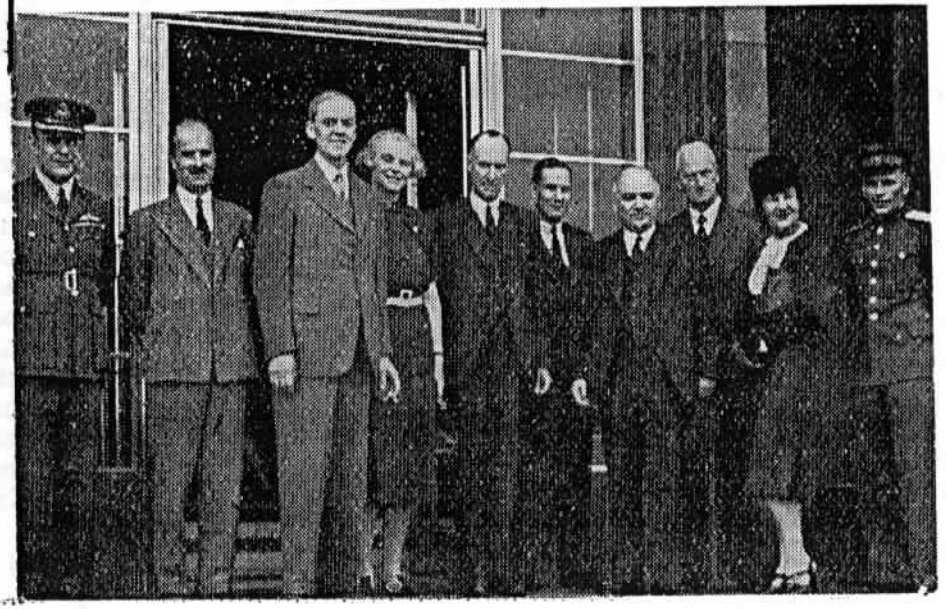
Private O. J. No. 43
Memorandum of information to all de Havilland personnel. 24/6/43

RUSSIAN AMBASSADOR'S DAY WITH US

Monsieur Maisky honoured us recently by visiting big production centres of our Engine, Propeller and Aircraft Divisions, and Second Aircraft Group, and speaking to our workers in each place. He was accompanied by his wife and by Major Rudoy of the Russian Air Force, and they were brought to our establishments by Sir Stafford Cripps, Minister of Aircraft Production, and Lady Cripps.

Both Monsieur Maisky and Sir Stafford Cripps praised the effectiveness and all-round excellence of the Mosquito,

CONFIDENT EXPRESSIONS : At the recent Russian visit. Left to right : Group Capt. E. H. M. David, O.B.E., our M.A.P. overseer, Mr. A. S. Butler, chairman of our company, Sir Stafford and Lady Cripps, Capt. de Havilland, Mr. Westbrook, Monsieur Maisky, Mr. Hearle, Madame Maisky Major Rudoy.



and told us that we should feel proud to be responsible for such an aircraft.

Perhaps the most interesting point from Monsieur Maisky's talks was his reference to the great task of removing Russia's aircraft industry to the Urals and beyond, which was necessitated by the German advance in 1941. He said that only now is the output from the new factories sufficient to give Russia predominance in the air, and this superiority has been experienced over the eastern war front during recent weeks for the first time since Germany attacked. He was not prepared to say whether Germany can be defeated from the air alone, but the screaming of those who murdered millions of innocent men, women and children will not help them against the increasing Allied air attacks upon legitimate targets.

Sir Stafford Cripps, who has visited us on previous occasons, had the pleasure of introducing Monsieur Maisky to the recently elected Joint Production Committee of our Aircraft Division, and they held a 15-minute discussion with Monsieur Maisky in the chair. There was also a talk with the S.A.G. Committee, and Lady Cripps had a separate discussion on all aspects of women's welfare in our factories. Mr. John de Havilland demonstrated the flying qualities of the Mk. II Mosquito Fighter.

STEADY OUTPUT FROM UNSTEADY SUPPLIES

Following is a digest of an article written by Mr. W. K. Forster, deputy general manager of our Northern Propeller Division, to explain to all his people something of the organisation of war-time propeller production. We think it equally interesting to other divisions of our Company. It is a record of the interdependence of one man's work on that of others in the long chain of supplies. If one link in the chain breaks down, all the rest are useless until the broken link is repaired.

Nearly all, Mr. Forster says, of the production materials

which come into the factory have, before we can begin our own operations, been in the hands of four major groups of industries each with its own technique, its own problems and its own difficulties. These four industries are dependent on a great number of others for the supply of their manufacturing equipment and for the needs of their workpeople; and, needless to say, all industries would come to a stop if there were any prolonged breakdown in the shipping, railway and road-transport industries.

Our propeller supplies are largely made up of special steels or steel alloys and of the aluminium alloy known as duralumin; but we also use non-ferrous alloys, plastic materials, rubber or artificial rubber and the metallic combinations used in plating or anodising, as well as paints and dyeing materials.

The metals on which we chiefly depend for propeller production and the places from which they normally come are these:

Iron ore—Spain, Sweden, U.K.
Bauxite (for aluminium)—France, U.S., Italy, the Balkans, the Guianas.
Nickel—Canada.
Chromium—Rhodesia, U.S., India.
Manganese—India, Gold Coast, U.S.S.R., Brazil, U.S.
Tungsten—Burma, China, Australia, Bolivia, U.S., Japan.
Molybdenum—Canada, Norway, Germany.
Copper—S. America, Canada, Spain, Japan.
Tin—Malaya, Dutch E. Indies, Bolivia, U.K.
Zinc—U.S., Poland, Spain, Belgium.
Cadmium—France, U.K.

Of the four major groups of industries on which we depend for our own raw materials the first one then is mining, or the extraction of the minerals from the earth, wheresoever they may be found. When we consider that many of our normal sources of supply are in countries now controlled by

the Axis Powers and that precious cargoes are always liable to be sunk on their way to this island, we can realise how fortunate we are that there has been so little disturbance to industries later in the chain. Among the unknown and unsung heroes of the war are the metallurgists and other technical experts who have devised alternative processes or substitute alloys which have enabled us to carry on through disasters which at first sight seemed to be hopeless.

Next in the chain is the extraction of the metal from its ore. Aluminium is most economically extracted from bauxite by hydro-electric power ; but in this country we are not very well off for water power except, perhaps, in the Highlands where there are one or two important schemes. So, much of our aluminium is extracted from the ore abroad and comes to this country in the form of ingots, extrusions or sheets. It is an intricate matter to ensure that all parties to the aircraft industry get just enough but not too much, for there is no superabundance of supplies.

The third link in the chain is the industry which specialises in the production of alloys or high-grade steels. There are over two hundred special steels used by the aircraft industry, and the high performance of the modern aeroplane has only been made possible by the research and development which has taken place in this industry.

The fourth type of industry is that which forms these materials into the shapes necessary before we can begin our machining operations. For the sake of strength combined with lightness most of our main components are made by the forging processes. Incidentally, the drop hammers and forging presses used on our larger components exert a pressure equal to 12,000 tons.

Now, it is of the greatest importance that the output of each should balance with that of the others. If one industry produces faster than the others it is just wasting materials and manpower.

The difficulties which prevent a perfect balance being maintained are many. So far as our imports are concerned it is an open secret that we receive in this country not so much what we should like to have, but rather what we can get. Then, none of the succeeding industries can increase their capacity greatly under a period of two years, because to do so involves the manufacture and erection of elaborate equipment. It is, moreover, never possible in wartime to predict with accuracy what our needs will be two years hence because improvements in design and the fortunes of war introduce too many unknown factors. Enemy air action and the sinking of shipping at sea further complicate a matter which, in any case, is quite complicated enough.

In the case of the forging industry an additional problem arises as a result of dies breaking ; they are submitted to very severe stresses and are always liable to break, which they generally seem to do at the most awkward moments. These dies, which form the material to the required shape, need a high degree of skill and experience in the making, and many of them cannot be made under a period of six months. Owing to the shortage of both the skill to make them and of the high-grade steel from which they are made, it is impossible and, indeed, would be wasteful to make so many duplicates that there was always one in reserve. So we have to be content with a very limited reserve of dies and hope for the best.

Within this organisation one of our main tasks is to ensure that all the various parts progress through the various shops at the main factory, at dispersal units and at sub-contractors in the right quantities and at the right time.

There are actually about 600 distinct operations in each propeller and (as more than one of each are generally needed) about 2,600 in all. This number has to be doubled if we take into account the other accessories (such as constant-speed units, spinners and feathering equipment) which are needed before the propeller is ready to be fitted to aircraft ; and the

TO THE STAFF AND OPERATIVES OF

DE HAVILLAND AIRCRAFT CO.LTD.

You are all aware of the great efforts which Bomber Command has put out in recent weeks. At intervals of only a few nights Germany is being subjected to attacks of a severity which has no parallel in the previous history of air warfare. There is no need to dwell on their effects, but they far exceed anything which the Luftwaffe has been able to inflict on this country. The R.A.F. are systematically destroying the enemy's war potential and the rate of destruction increases from month to month.

Germany has only one hope of stemming this tide of destruction, and that is that the expansion of our Bomber Command will be slowed down It depends on you whether or not the enemy's hope is fulfilled

Our casualties are always published accurately and in full. They are not so heavy as we expected in the days before intensive bombing began. Nevertheless it is the rate of wastage, in relation to the rate of production, which imposes limits on the expansion of Bomber Command Rapid expansion is essential if our bombing offensive is to achieve decisive results. By swamping the enemy's defences, it will enable us to multiply the damage inflicted on him and at the same time to reduce the risk to our crews. The majority of new aircraft which you produce are now going into active service within a few days of leaving your works.

If we appeal to you for still further efforts you should not think that we fail to appreciate your magnificent work in the past. You have made the present offensive possible. We know that the standard of skill and enthusiasm is high throughout the aircraft industry and we are proud of your achievements. We would ask, however, that at this crucial moment of the war you should concentrate all your reserves of energy on trying to beat your former record. A very little more, measured in terms of output, may have an enormous effect on the future course of operations.

We realise your need for holidays; you have deserved them and they are necessary to maintain your efficiency. The ideal which we set before you is that you should between now and the autumn so raise your individual output that the effects of your absence are minimised or even cancelled out.

If you can do this you will add to the debt of gratitude which the country already owes you.

C Portal.

CHIEF OF THE AIR STAFF

Wilfrid Freeman

CHIEF EXECUTIVE
MINISTRY OF AIRCRAFT PRODUCTION

1st JUNE, 1943.

number is still further increased when we count the variations caused by the different types of propellers.

So far as is possible all these operations, which are taking place all over the country, have to go on at the same relative pace and the pace of the slowest controls the pace of the whole.

Some conditions which prevent smooth running arise outside our organisation ; the three most important are failure of supplies ; a sudden change in the type of propeller needed owing to a change in the strategic needs of aerial warfare, and a change in the demand for spares. The nature of the demand for spares varies very greatly according to where most of the air fighting is taking place.

Of the conditions within this organisation which can produce a lack of balance, one of the most interesting arises from the inflexibility of automatic machines and the flexibility of the human element. A machine such as a Berliner Profiler, for example, sets its own pace and once it is started nothing the operator can (or should) do will make it go any faster. On the other hand, there are some operations where there is a vast difference between the efforts of the beginner just learning the job and those of the experienced expert.

So far, we have only considered one chain of supplies, that is to say, our own raw materials ; but there is a most complex interconnected source of supplies from which we obtain machine tools, jigs, gauges and small tools, works equipment and general stores. A large proportion of the machine tools needed have to be brought from the United States of America. If these happen to be sunk on the way to this country they may delay some section of the armament programme which is already behind time and which is trying hard to get into step.

Sometimes some new device may show signs of having such exceptional merits that it may be decided to produce it before all the experimental work is complete and before efficient manufacturing arrangements are ready, in order to

have the benefit of it in aerial combat as quickly as possible. In most cases there is a compromise between, on the one hand, efficient production methods which necessarily take a long time to complete, and, on the other hand, relatively inefficient and " freehand " methods which do, at any rate, allow of something new being produced quickly even if at a high cost and in small quantities only. If one waited until all one's production arrangements were perfect it would generally, in war time, be found that the article to be made was out of date before it was produced.

Whenever we have to expand our productive capacity one most important point always has to have very careful consideration. New employees have to be engaged, and, in most cases, trained to operate the new machines which are on order. But, owing to the vicissitudes of war, delivery dates of machine tools are decidedly uncertain and we cannot await their safe arrival before making arrangements for the trainees ; so there is always the danger either that new people are engaged and trained but have for a time no machines to work ; or that machines arrive and there is no one ready to work them.

Since the last war there have been revolutionary changes in production methods and one of the most important is the use of machinery specially designed for one particular purpose only, or, alternatively, of much more elaborate jigging and tooling to obtain speed and efficiency in quantity production. The needs of the war have called for a great extension of these methods because most weapons of war are much more intricate than commodities in everyday peacetime use. Aircraft, tanks, torpedoes, artillery and transport vehicles are all elaborate devices made to precise limits and needed in vast quantities. Modern methods have undeniable advantages for producing them in the required quantities and with great economy in man-power. But there are two important drawbacks.

First, they are slow to start. There does not seem to be

much likelihood of this difficulty being overcome because one should make elaborate preparations before starting. In peacetime this does not matter very much. In war, however, it is a grave disadvantage and there is a conflict all the time between the need for quantity and the need for the latest designs. As we have noticed, the resultant decision has to be a compromise.

The second drawback is a human one. The operator's work is monotonous. The old-time craftsman who, possibly, used his own experience and judgment to choose his material, who then saw his work grow under his own hand and who finally had the satisfaction of seeing the completed product, had a better chance of finding real enjoyment in his work than the operative in modern conditions, who is often engaged on repetition processes of little intrinsic interest. It is to be hoped that the trend of development when peace comes will give opportunities to all who want them, to acquire wider experience and responsibilities in the industries in which they choose to work.

CANTEEN COMMITTEE ELECTION

It having been decided that the canteen of the main aircraft factory be managed by a committee of employees, an election was recently held there. The committee consists of nine members and Mr. W. C. Pereira (staff) is the chairman. A whole-time secretary, Mr. E. P. Gates, has also been appointed.

* * *

The articles concerning the Mosquito which appeared in *The Aeroplane* and *Flight* excited lively interest within the Company, and many employees have asked whether reprints can be obtained. Paper restrictions are such that very limited quantities only could be procured. There is one copy available for each of the first 200 applicants to send a request to the internal relations department at Head Office accompanied by sixpence for the R.A.F. Benevolent Fund.

DO YOU KNOW THEM?
MORE D.H. PERSONALITIES

A. J. Clarke, chief of progress dept., E. & P. Divn., a post he has held since 1941. He joined in 1943. Supervised all the progress work on the engines which powered the famous Comet.

(Below, left) P. K. Ray, foreman of constant-speed unit assembly since 1937. He was the first man to bring the unit into production.

(Below, centre) Bill Browning, charge hand coppersmiths' shop (Aircraft Divn.). He rejoined the Company in 1939 to do similar coppersmiths' work to that which he did on the D.H.4 in the last war. He is successfully training girls to do men's jobs.

(Below, right) E. A. Middleditch, Aircraft Divn., who joined us in 1922 as woodworker and rigger. Became foreman of Moth assembly, 1928, and was responsible for the production of all subsequent types until 1941 when he became progress manager. He is now in charge of flight test and delivery.

"MOSQUITOES FOR VICTORY" MONTH

The progress made by each of the groups in the challenge shield competition for June cannot be shown on the indicators erected throughout the Aircraft Division until some days after the end of each week. It takes time to get the figures out.

The orange-coloured background on the indicators represents the output achieved in one month averaged over March and April. If, therefore, a group works at the same pace for the same number of hours in June, the pointer on the vertical column for that group would reach just the top of the orange-coloured panel; but if it works harder or for longer hours, the pointer will climb into the white panel above.

* * *

Mr. Gillan, of the machine shop, has wagered that his unit will be in the first three.

* * *

A small party drawn from the main factory visited an operational Mosquito squadron on Sunday, June 12, and a similar number from dispersed factories went to another squadron on June 19, which they thoroughly enjoyed. Other parties are being arranged for two succeeding Sundays.

S.A.G. DRIVE

The Second Aircraft Group has decided to organize a production month in the near future. The Joint Production Committee has appointed a sub-committee of three, who will announce the details as soon as they are known.

* * *

Too many instances of lost passes occur these days, sometimes in circumstances which reveal to the finder where the loser is employed. Much more care is needed to safeguard the security which the pass system is designed to achieve.

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Private O. J. No. 44
Memorandum of information to all de Havilland personnel. 9/7/43

SIMPLE ARITHMETIC

The process of smashing enemy industry causes heavy loss not only in gallant men but also in aircraft and equipment. These last can be made good if we put our backs into it, but the target is high. It was officially said the other day that more than 500 heavy bombers had been lost since March. Most had four propellers each with three blades, which gives the Propeller Division something to think about. And, to worsen matters, many of the aircraft which do get safely back, need replacements. Read the letter below from Wing Cdr. Reynolds describing the raid on the Carl Zeiss works at Jena (the deepest penetration by low-flying

Wing Cdr. Reynolds and his navigator, F/Lt. Sismore, on their return from the Jena raid. The chunk out of the propeller blade flew into the cockpit, exactly ·4 of a second after the release of the last bomb, a fact divulged by the mechanism on the bomb-release panel.

bombers thus far attempted), for which he gained a bar to his D.S.O. Many of the Aircraft Division will remember his visit to tell them about the first daylight raid on Berlin, which he also led in a Mosquito.

" I was leading in ' B ' for ' Beer ' No. D.Z. 601, a particularly fine Mossie, and I was airborne with the rest of the formation in the early evening.

" The North Sea was crossed at wave-top height and, on approaching the enemy coast, always the most tense moment, speed was increased and the formation closed up for the quick dash across. Once over, the trip becomes more interesting. One sees such things as cyclists jump off their cycles to have a look round to see what is coming, children look up at us, then put their heads down and run as hard as they can. Mechanical vehicles are almost non-existent. Startled horses, sheep and cows scatter in every direction.

" There were no further incidents until we ran over one of Germany's reservoirs, when the Hun pushed up some accurate flak ; fortunately, no one was hit, but shortly afterwards two of the formation collided and crashed. It was another 50 miles or so when bad weather was encountered. First thick industrial haze, and then heavy low clouds covering the tops of the hills over which we had to fly. Of course, we had to enter cloud and climb high enough to clear hills with a margin of safety. As soon as we estimated that we should have cleared the high hills we descended into the gloom beneath the clouds. To enable the other chaps to pick me up again—a very difficult job under the existing weather conditions—I put on my navigation lights for a short while. This was also done by the leader of the second section, Sqn. Ldr. Blessing. Crews afterwards stated that this was a great help for them to regain formation.

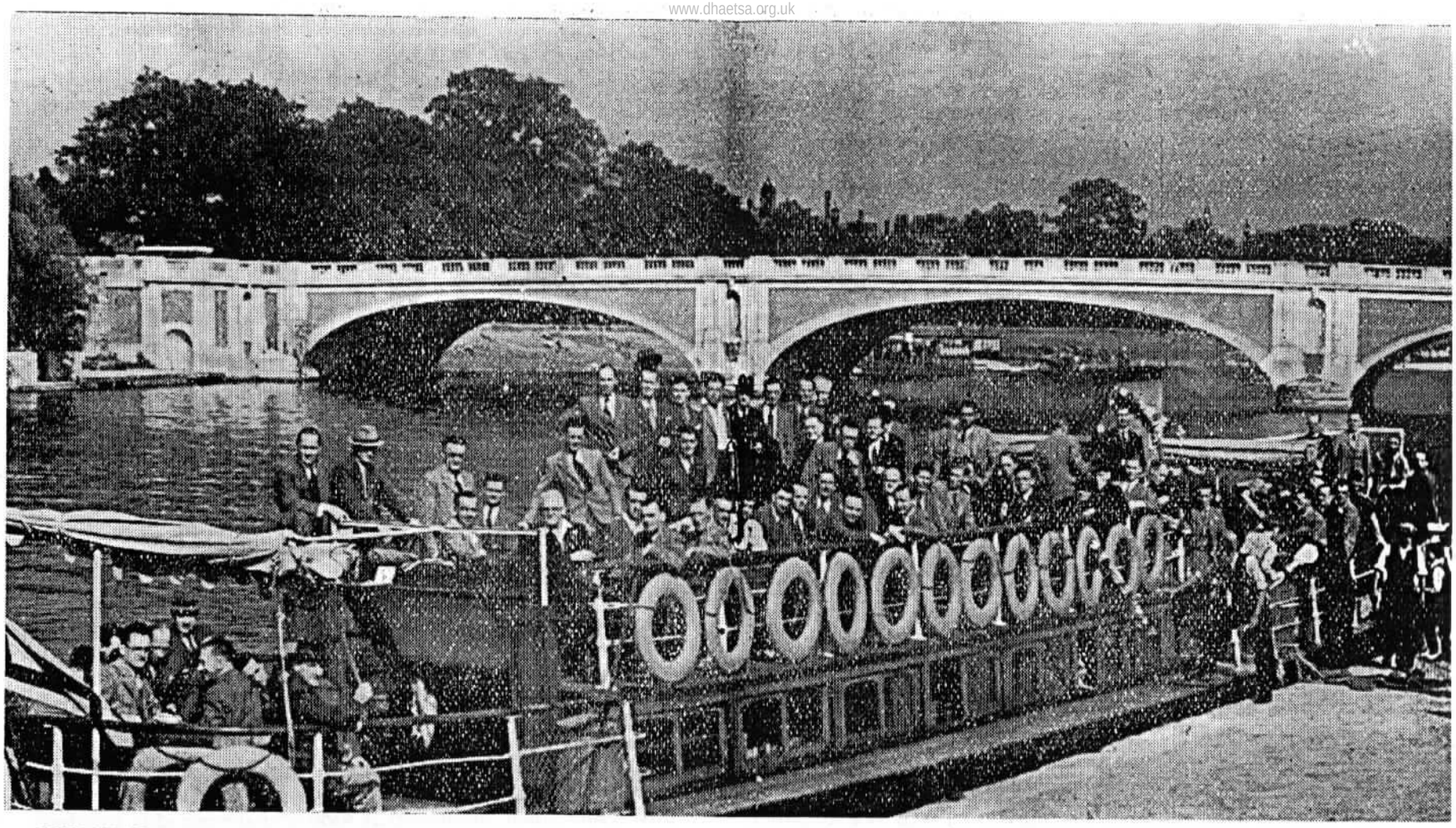
" At this stage we had arrived at a point approximately 20 miles from the target and we turned on to our run up, increasing speed and then opening bomb doors. We picked

up various landmarks which we were looking for and knew from these that we were dead on track. The visibility was now down to about 1,500 yards—not much when one is travelling at such high speed.

" The target was now only two miles away but not yet in sight. At a thousand yards I picked up the tall chimneys and opened up to full throttle. My observer pointed out the balloons and immediately the flak came up at us in bright red streams and unhealthily close. Now it was every man for himself ; I picked out a tall building and went for it, releasing my bombs at point-blank range. I yanked the stick back to climb over the building, and as I topped it the airscrew received a direct hit. There was a violent explosion in front of my eyes and I felt something tug at my hand and leg, but took no notice for the time being—things were too hot ! Now we were in a veritable hail of tracer shells, dodging and twisting for dear life. More balloons ahead, which we missed by the grace of God, and now, apart from a few inaccurate bursts, we were clear and I was able to survey the damage.

" My left hand was bleeding freely, as was my left leg. The kite was vibrating considerably, and I could see holes in the fairing immediately in front of the radiator. Flak had pierced a hole just aft of the port radiator and close to one of the main tanks. There were two large holes in the fuselage close to the throttle box where some fitting had been blown away. My inter-com. had packed up and I discovered later that a splinter had severed the lead just below my starboard ear. The collar of my battledress was torn also ; this wasn't noticed until I arrived back at base, when Flt. Lt. Sismore, my navigator, asked me what I had done to get that !

" However, to continue ; after that one violent explosion it seemed a miracle that the aircraft could keep in the air. I was especially anxious about my port radiator with that hole so near, and constantly checked the temps. to watch for any rise. Fortunately, it remained constant at 98 deg. C.,



THE STAG LANE SPIRIT!—Feeling that it was time they got together away from the cares of war production, the supervision staff of our Engine and Propeller Division, one hundred and thirty strong, chartered a river steamer and spent a June rest day on the Thames. A change, they say, is rest at its best. The organisers, Mr. S. Bence, Fitting Shop Superintendent, and Mr. L. C. Gregory, Foreman of the Engine Machine Shop, even got the weather right. It was the first shop outing since the war began and the spirit of the old Stag Lane days seemed stronger than ever.

and the vibration got no worse, so the need to feather the damaged propeller never arose.

" We were now returning individually, and so I nipped into cloud for safety—to clear hills and avoid any flak that may have been put up. My observer bound up my hand and then we settled down to the long journey home with frequent apprehensive glances at the engine instruments and fuel. I, personally, felt satisfied that I got the target with my bombs, and later one of the boys said he saw them go in followed by a sheet of flame a hundred feet high—and that would be some time before they actually exploded.

" On the way back we ran into more trouble by entering two more defended areas. The second one was very hot, and it was with luck that we escaped by means of violent evasive action with full throttle. Even though ' B — Beer " was badly damaged, she behaved magnificently throughout.

CUTS FROM THE JOINT PRODUCTION COMMITTEES' JUNE MEETINGS

A monthly review of matters discussed of general interest. For reasons of space purely domestic affairs are omitted.

Aircraft Division. Mr. Grinter said there was still room for improvement in workmanship by some, which, coupled with failure in certain cases to detect faults by stage inspection, had its effect on production. Mr. Richards was of the opinion that supervision were reluctant to show up " waiting time," and that operators were afraid to insist upon being put on waiting time when the need arose. He also referred to the need for more overtime being worked and thought that personal appeals by supervision would bring results. Mr. Seward said from his experience such appeals had effect only on the day they were made. The matter is important, and all should realize the need to work a reasonable amount of overtime. A 56-hour week should be aimed at.

The practice by some of stopping work a quarter hour before meal and finishing times was condemned. Mr. Westbrook said unless improvement took place, clocking off would become imperative. Supervision were not blameless, either, and they should themselves do better and check others more closely. Mr. Hinds thought some bad workmanship was due to insufficient instruction to women and the semi-skilled who sometimes learnt only from each other and then incorrectly. He thought many women had shown great promise and should be given more advanced work.

E. & P. Division. The findings of the enquiry into the subject of Plant Department waiting time was read, and the result was considered by everybody to be satisfactory. Mr. Wright expressed his appreciation of the help given by the joint plant managers. In discussing production matters, Mr. Nixon paid a tribute to the good timekeeping of all in the Propeller Assembly department, where absenteeism was lower than anywhere in the Division. A suggestion that women could be employed on certain blade inspection work, with labourers to assist in handling blades, was decided to be practicable. It will be adopted as soon as it can be.

S.A.G. The suggested production drive was fixed to be in September for one factory and in August for the factories feeding it. A general plan was debated and it was arranged that the organising sub-committee should visit the D.H. Aircraft Division to note what was happening there.

* * *

In O.J. No. 43 (p.11) the contradictory statement was made that Mr. A. J. Clarke had been chief of progress dept. (E. & P. Divn.) since 1941, and that he joined in 1943. 1934 was actually the year, a printers' transposition of the 3 and 4 accounting for an error which has for us but one consolation : O.J. has no shortage of readers, judging by the scolding telephone and personal calls we received.

The results of the Aircraft Divn. successful production drive will be reported in O.J. No. 45, when figures will be known. At the end Mr. Westbrook broadcast a "pat on the back" for creating a "new high" despite the holiday.

* * *

The third of the four trips to Mosquito operational stations took place last Sunday. A pity many more cannot be arranged, so interesting and stimulating do the lucky ones find them. Mr. T. J. Bishop of one of the assembly lines, in speaking about his visit, said that the party was perhaps most surprised by the number of hits from flak the aircraft on long trips can take and still get back. They saw the Mosquitoes being loaded up ready for a raid and the bomb-dump "has to be seen to be believed."

* * *

Harry G. Reed, who has been with the D.H. team since about 1915, in the old Airco days, and was one of our most experienced inspectors, died suddenly on June 27, so reducing to fifteen the number of founder members still with the Company. A man of kindly disposition, utterly dependable, steeped in knowledge of wood and wood structures he has often been entrusted with special missions. He visited America in the early thirties to solve timber selection problems, and recently has flown out to North Africa and to Iceland in war conditions on urgent inspection duties. He was everybody's friend here.

* * *

The S.A.G. have just returned from holiday, and the other divisions will soon be going on theirs. To help the travel-saving stay-at-homes, the Aircraft Division library will be open on Saturday, July 24, from 10 a.m. to 1 p.m. and on Monday, July 26, to Friday, July 30, from 10 a.m. to 1 p.m. and 2 p.m. to 4 p.m.

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A HOLIDAY COMPETITION

Very soon now the Aircraft Division takes its well-earned few days holiday, followed immediately by the Engine & Propeller Division. The hope is that they will be as lucky as the Second Aircraft Group, who had their break during perfect weather a little while back. Although in travel-restricted days all cannot get away, everybody will benefit by the relaxation, and at home or away, most of us will strive to keep the preoccupations of the workaday world well in the background. Even so, it has been suggested that we launch a little competition for witty-minded people whose thoughts may stray when tramping across the fields and for those whose imaginations play while their fingers work at the fruit-farm camp. The S.A.G., with their holidays behind them, should have no scruples at all about joining in.

We want some bright ideas for Salvage Posters. Here we reproduce an example of what is meant, and although it is concerned with waste, a different theme, it illustrates how an idea can be treated. With salvage, the main points to keep in mind are, firstly, that all scrap has some salvage value, and, secondly, that it is important that all salvage should be correctly

segregated and put into the proper bins. Drawings will be welcomed, but if you are not very adept with a pencil do not be discouraged because a rough sketch incorporating a good idea is of more value than an attrative-picture lacking originality. There is no limit to the number of entries, which should all be sent to the internal relations department, Head Office, by August 16 next. There will be three prizes : 5 guineas, 3 guineas and 1 guinea, and the judges will be Mr. R. A. Loader, of Samson Clark & Co., Ltd. (the Company's advertising agents), and Mr. R. R. Arkell, Aircraft Division salvage officer.

AIRCRAFT DIVN. SHIELD

The final positions of all groups in the Aircraft Division production drive cannot be detailed here for security reasons, but a list has been circulated to shop foremen. Anyone wanting more information will be willingly given it on application to the internal relations dept., Head Office. The dispersed sheet metal detail assembly shop headed the list, and thus gains the Challenge Shield. Warm congratulations to Mr. Foster and his team for a really fine result. We wonder how long they will be allowed to keep it though, for from now on the Shield will be competed for each month.

The result of the " Individual Effort " competition was not known when this was written. A lot of investigations and checking are necessary, which are being dealt with expeditiously with the co-operation of Mr. O'Dell (employment office) and Mr. Sowerbutts (chief time clerk).

TECH. SCHOOL NEWS

Mr. Saul-Brown says how pleasing it is that the Aircraft Divn. Sheet Metal Workers' Union show such interest in the sheet metal evening classes. A tangible result of that interest is the books (value two guineas) that were awarded to L. Silver, G. N. White, D. Jackson and J. Croucher.

Royal Aeronautical Society. Sixteen students passed their Associate Fellowship exams with good results. G. D. Poole was first in the Country in Structures, and J. Radford, with 95 per cent., missed first place in Maths, by one mark. Nine students had first-class passes in mathematics.

AND IT'S CALLED WIRELESS !

When W/Cdr. F. W. Hillock and F/Lt. P. O'Neill-Dunne were out on intruder patrol over Holland in Mosquito No. D.2726 the other night they crashed through some wireless cables. In his report the Wing Commander said : " We were flying low when suddenly what looked like wireless masts loomed up before us. We were too close to get over or under them, so we crashed through in a vertical bank. Somehow we levelled out of our bank and for a moment I thought we had been badly hit. All was well, however." The Mosquito continued the patrol for 2½ hours with 300 feet of copper cable wrapped round the wing and fuselage. The Air Ministry bulletin which described the operation said : " It says much for the twin-engined, all-wood Mosquito that it was able to bear the strain of the crash and keep on flying with its load of copper."

* * *

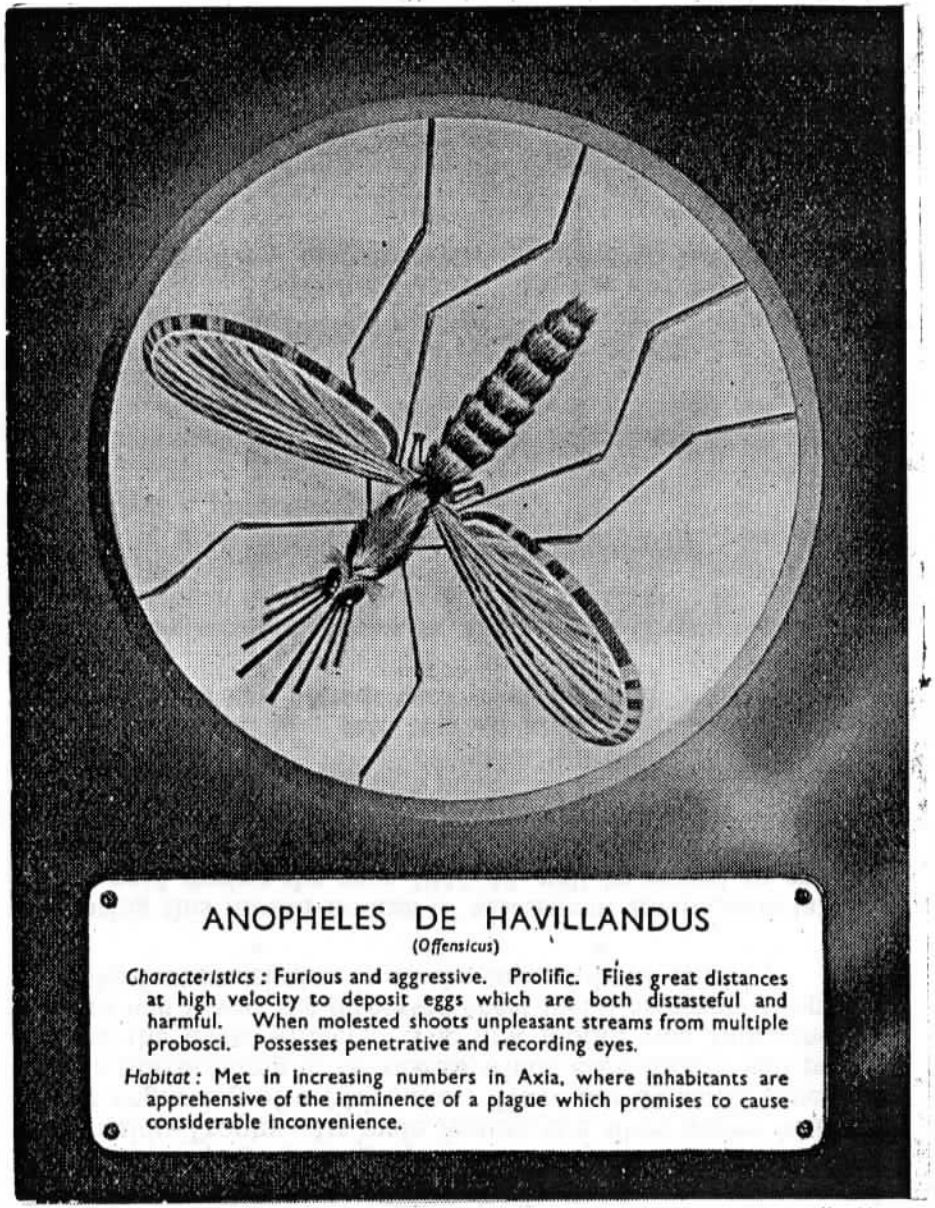
The engine repair group, at one time under Mr. Snell and now managed by Mr. H. Buckingham, received telegraphed congratulations from the Minister of Aircraft Production on reaching their X thousandth repaired engine. How irritating but unavoidable these X's are !

CENTRE PAGE PICTURES

The small white markers on the black vertical lines on the indicator board (erected at the main entrance to the factory) show group positions after the Aircraft Divn. drive (top picture).

The Aircraft Division Works Brass Band won their first contest recently at the Romford Musical Festival, Division 2. Some old members now in the forces rallied round to help put them in the top place, over last year's winners. The Bandmaster, Mr. E. G. Ewens, is seated next to Jock Allardyce who is looking swell behind the Cup (lower picture).


AIRCRAFT DIVISION CHALLENGE SHIELD
GROUP POSITIONS DURING JUNE
MAIN FACTORY
DISPERSED UNITS
EXPLANATION
DE HAVILLAND
WORKS BAND



ANOPHELES DE HAVILLANDUS

(*Offensicus*)

Characteristics: Furious and aggressive. Prolific. Flies great distances at high velocity to deposit eggs which are both distasteful and harmful. When molested shoots unpleasant streams from multiple probosci. Possesses penetrative and recording eyes.

Habitat: Met in increasing numbers in Axia, where inhabitants are apprehensive of the imminence of a plague which promises to cause considerable inconvenience.

"The great offensive weapon of to-day and all future wars," wrote Lord Trenchard in *The Times* the other day, ". . . is air power, and those responsible for the air forces of the world will also be responsible for keeping the peace of the world." Thus we are reminded of Britain's noble and exacting responsibilities after the enemy has been vanquished.

* * *

"The course followed in the development of civil aviation," stated *The Times* itself in a leading article of the same day, "may well be significant for the growth of the whole concept of the United Nations, leading on, as it must, to some permanent world institution, capable of upholding and progressively organising peace."

S.A.G. MEETING

The other day representatives from the S.A.G. factories got together at the assembly shop to discuss publicity and like matters connected with their proposed production drive. General agreement was reached after animated discussion. Only one or two things more remain to be settled before a planned programme can be announced.

* * *

More general notice boards have been installed in the Aircraft Division, for the exclusive display of notices approved by the works superintendent. Advertisements for dances and entertainments may be displayed only on suitable sites and must be submitted first to the internal relations department. By this means it is hoped to keep the factory a little more tidy.

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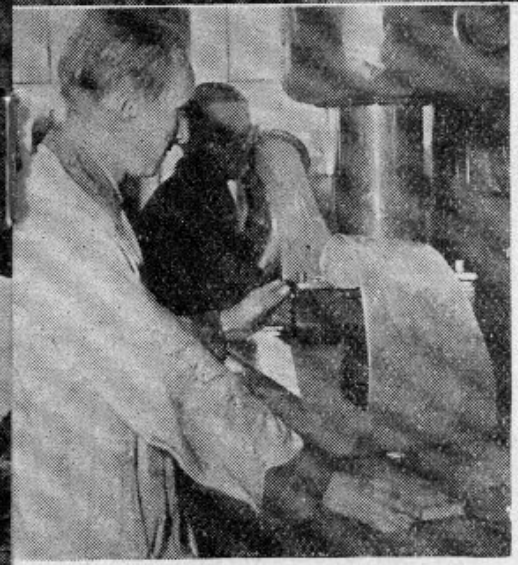
This summerlike scene was actually taken in March, when the band of the Wiltshire Regiment gave the Aircraft Repair Depot an open-air concert much to everybody's satisfaction.

See page 8

REMARKABLE RECORD.—
Introducing Mr. Charles Barret Trobridge, a fitter employed at the E. & P. Division as liaison between it and the No. 1 propeller service and repair depot. He organises the 101 jobs which the repair depot and the main plant collaborate to do. He had an attack of 'flu in 1940 which he mastered in one day. Since then not once has he been absent or late; or "lost a quarter" by leaving early. During the whole of 1942 he averaged 62 hours weekly.

* * *

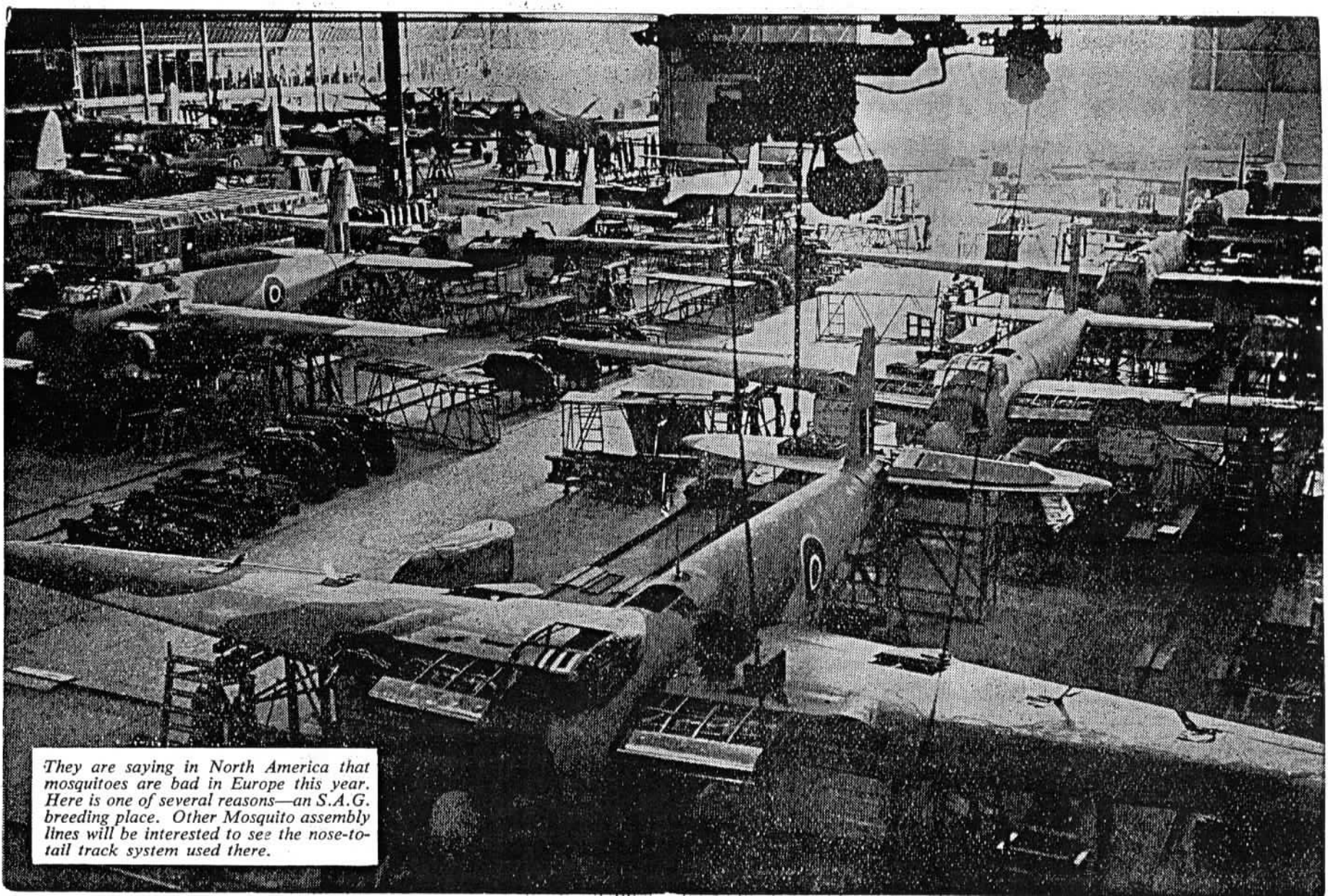
PERSONALITIES ON THE BOWLING GREEN.— Capt. de Havilland with people from many departments playing a friendly game recently.



A DISTINGUISHED VISITOR.—The Hon. R. G. Casey, Minister of State in the Middle East, recently visited D.H. establishments in England. Here our Chairman is introducing him to Mrs. Butler, a senior A.T.A. ferry pilot, who had called to collect a Mosquito Mark IV. Mrs. Butler is one of the relatively few women pilots who are flying heavy bombers, latest fighters, and other fast operational types.

PROPELLER HOSPITAL.—

Rendering such badly bent blades fit for further extensive service is an everyday affair at our Propeller Serviec and Repair Depot. Chargehand J. W. Hunter is seen demonstrating the press, in which skill grows with experience.



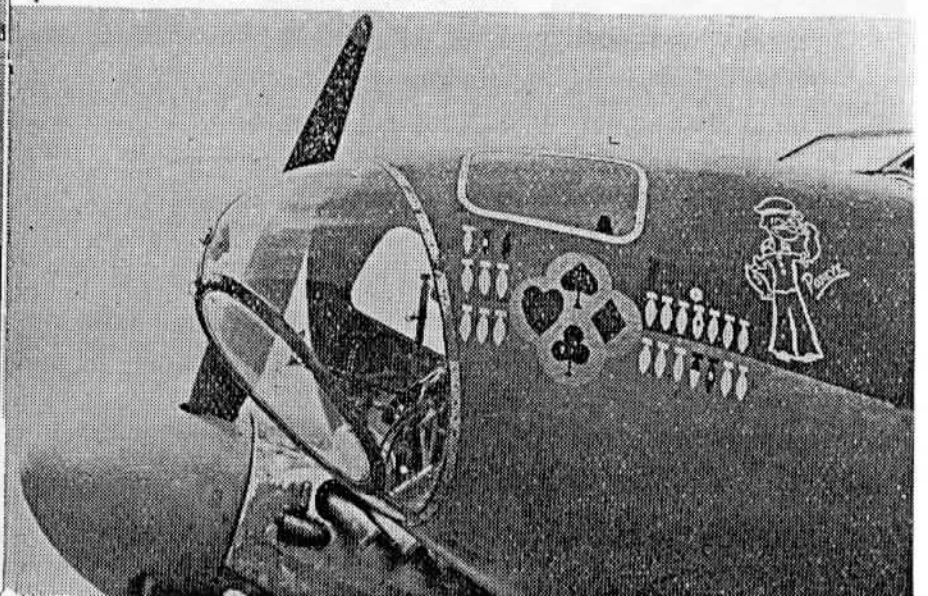
They are saying in North America that mosquitoes are bad in Europe this year. Here is one of several reasons—an S.A.G. breeding place. Other Mosquito assembly lines will be interested to see the nose-to-tail track system used there.

D. H. IN THE HONOURS LIST.—Since we reported that Jock Allardyce of the Aircraft Division had been awarded the British Empire Medal members of some of our other units have also been similarly honoured. Here they are: (Above) Mr. C. Paterson (second from right) showing his medal to fellow-foremen in the Engine Division. He is foreman of the engine repair shop and has given many years valuable service. Indeed, so has the whole group, who between them aggregate 76 years D. H. service. The others are: G. Winterbotham, J. Springett, S. Bence (superintendent) and W. Pugh.

(Lower Left) Mr. A. T. Kerr (right) being congratulated by the works superintendent of the E. & P. Divn. blade shop, Mr. Hopper. O.J. No. 10 described how he cut our first few blades out of the solid, from experience gained in America. He is now assistant works superintendent of the blade shop.

(Right) Ken Brown, listening to a pleasant bit of news. He first joined us in 1922. As works superintendent of the Aircraft Repair Depot he does a big job in a big way.

POPEYE'S DOIN' WELL.—A veteran bomber which the squadron C.O. described as a particularly sweet Mosquito. Popeye must have done well on his spinach, for each bomb by his side represents a raid: the white ones for daytime, the black ones for night. Black-and-white means dusk or dawn, and a B means a raid on Berlin.



WELL WORTH WINNING

The front page photograph is of the Aircraft Division Production Trophy. Its main feature is a silver salver with a fine engraving of a Mosquito. There are 24 small silver shields surrounding it, on one of which each month will be named the latest winners. The first month was June, the first to win it was the dispersed sheet metal assembly shop, and the first inscription is on the top left-hand shield.

* * *

During this month notices of assessment for income tax to be paid during the year 1943–44, will be issued to employees who pay their tax yearly, that is to say those classified as non-manual workers. One amount only will be shown, which will be deducted over a period of 50 weeks beginning in November, leaving two clear weeks at the end. Previously the tax has been split into two amounts which have been collected over two periods each of six months.

* * *

In the first week of September, the Aircraft Division Sports Club is organising an R.A.F. and D.H. Troops' Gift Fund Benevolent Week. The aim is £2,000, a very large sum indeed, to achieve which all sections of the Club have set themselves a proportionate Target.

* * *

Six apprentices at the E. & P. Division, and eight apprentices at the Aircraft Division, have qualified for full remission of their evening school fees, while a further 14 and 9 respectively qualified for the return of half-fees. One apprentice averaged 94 per cent. in three subjects : Stage III Aerodynamics, Mathematics, and Drawing and Design. It always gives the Company great pleasure to make these awards.

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Private O. J. No. 47
Memorandum of information to all de Havilland personnel. 26/8/43

CANADIAN MOSQUITOES FLY ACROSS

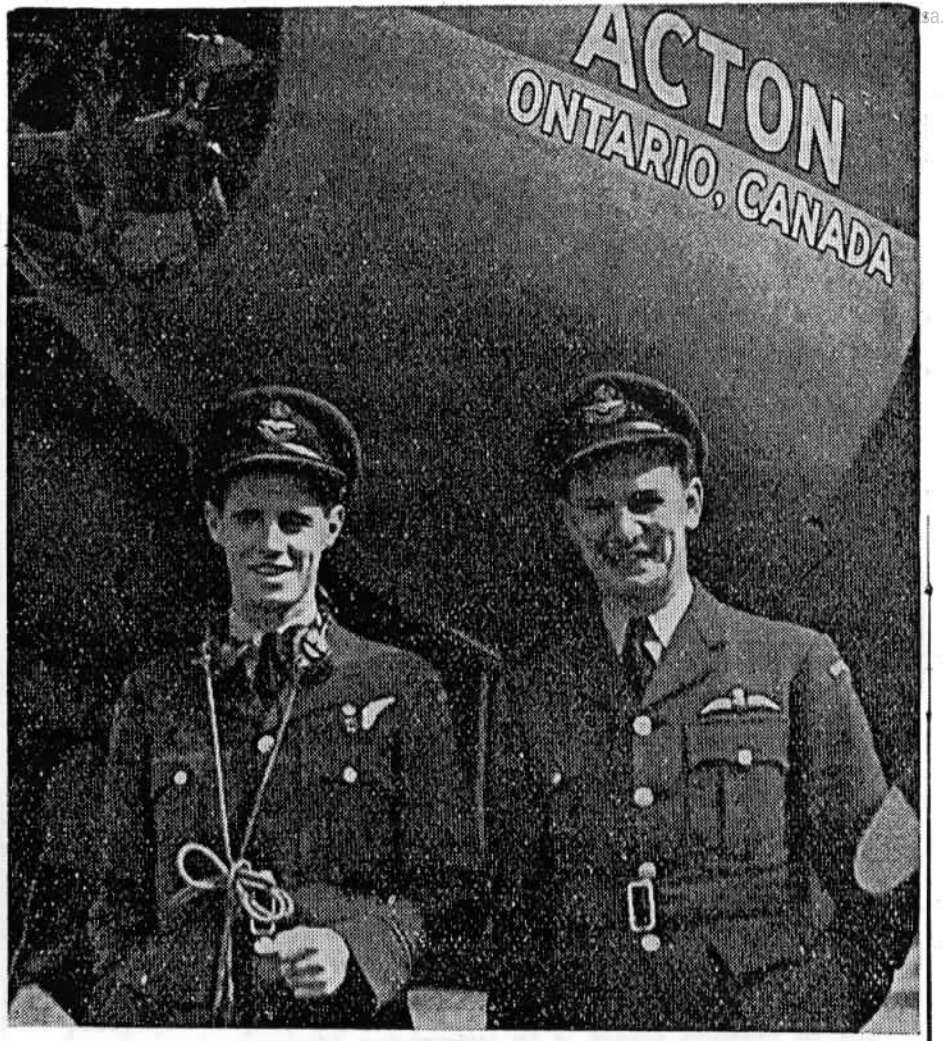
Mosquito bombers from the de Havilland factory in Toronto are beginning to flow into this war theatre. Two which arrived on August 12 had flown 3,280 nautical miles from one D.H. factory to the other in stages via Greenland and Iceland in the hands of American and Canadian crews and were eyed with admiration as they were wheeled into our hangar for detailed examination. Both had had completely trouble-free crossings and the pilots were most enthusiastic about them.

The first Canadian-built Mosquito flew in Toronto on September 22, 1942, just a year after the arrival of Messrs. H. Povey and W. D. Hunter who went across from the parent company to initiate the Mosquito project in Canada. Some 8,000 drawings followed those men across the Atlantic in batches by air and sea, more than 98 per cent. arriving safely. Jigs, sample units and other supplies were shipped and flown over. Many thousands more drawings, covering other marks, etc., have gone across later.

Mosquitoes from the Canadian assembly lines have been delivered hitherto to the R.C.A.F. squadrons in Canada and to the U.S. Army Air Corps, but now they are coming over here and will be flying in the face of the enemy any day.

The first five to come across are named " New Glasgow," " Acton," " Vancouver," " Moose Jaw," and " Saskatoon," after five cities which did best in the fourth Canadian Victory War Loan Drive.

The Mosquito is, of course, capable of flying the Atlantic non-stop but the first few deliveries are being made via Arctic bases to enable ground crews to familiarise themselves with the type and its handling gear. Stage deliveries are routine practice also whenever weather is unfavourable to direct crossings, for the longer way round is then the quicker.



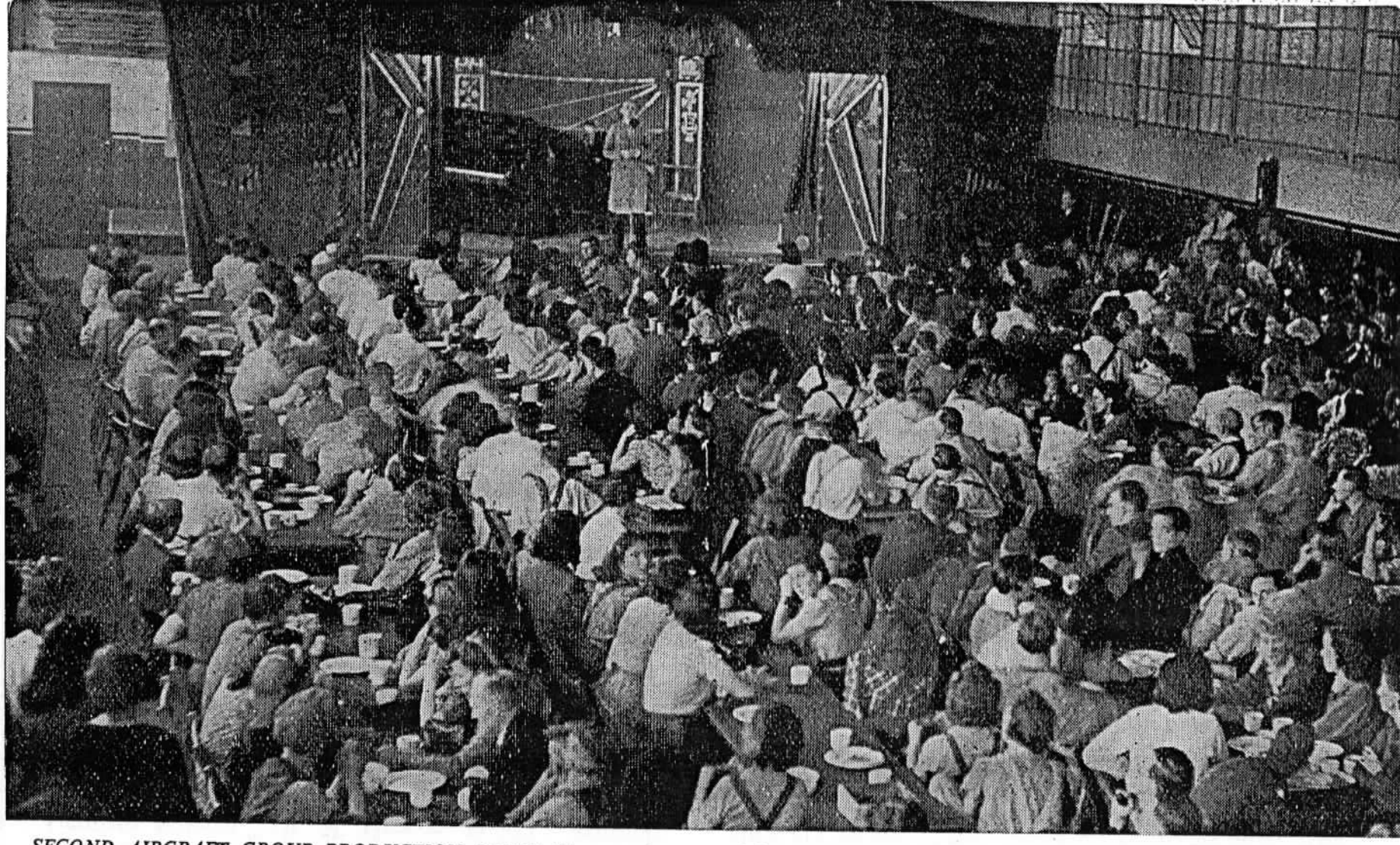
FIRST TRANSATLANTIC MOSQUITO DELIVERIES—F/O J. G. Uren (right) and F/O R. C. Bevington, of the R.C.A.F. Transport Command, who brought across one of the first two Mosquitoes sent from the D.H. Toronto factory to England. When they set out from Labrador the Mosquito, parked beneath a Liberator wing, looked a small craft for the big journey.

The crew in our picture, F/O Uren and F/O Bevington, are two youngsters aged 22 and 23, who have already done five Atlantic crossings in various aircraft types. Uren only learned to fly in 1941, has done several Mosquito deliveries in Canada and U.S.A., but has flown no other in-line engine since his Tiger Moth days. Emphasising that over the Atlantic the engines mean everything, he remarked repeatedly upon the smoothness of the Packard-built Merlins which he said " give you the feeling they want to go all the time." The Mosquito cockpit was not too small for Bevington to take some quite good sextant shots on the sun ; weather was good and they had only 2 hours of blind flying. The finish on the Canadian Mosquitoes is excellent and the fit of the cowlings likewise.

S.A.G. SEPTEMBER SLOGAN—SLOG-ON

The Second Aircraft Group is now well into its production drive, arranged at the wish of the Joint Production Committees concerned. Each section of the group is making a special four-weeks effort, which began with the wings and fuselages sections on August 11. A week later, on August 18, the sheet-metal section took up their position in the drive. The last off the mark will be the assembly lines, on September 1. By fixing the dates in that sequence it is expected there will be available the extra quantities of everything required at the final production stage —assembly.

Two or three weeks before, a slogan competition took place. Operatives in each factory were invited to submit slogans suitable for naming the drive. First prizes of two guineas and second prizes of one guinea were offered. Several hundred entries were received and the judging committee had a hard job. There were three judges who examined all entries independently. Each made his own mark on the slogans he favoured and the winners were chosen on the majority of votes. The first prizes went to : wings section : " Make sure our numbers are up—and



SECOND AIRCRAFT GROUP PRODUCTION DRIVE—The operatives at each factory were assembled in their respective canteens before they began the drive, to be addressed by their own representatives—management and men—and a Mosquito crew. This photograph was taken at the wings section meeting.

Hitler's" (R. P. Tyler, electricians); fuselages section: "The month to sting the rats" (J. H. Hogg, progress); sheet metal section: "More Mosquitoes output, more Germany stay-put" (B. M. Greaves, police); assembly section: "The Mosquito slogan—Slog on!" (H. H. Crawley, sub-contracts). Finally the judges unanimously agreed to adapt for the drive Mr. Crawley's entry, thus: "September Slogan—Slog On." There is not space here to name winners of second prizes. All results were posted in the factories.

Other competitions are in prospect. There will be National Savings Certificates for the best efforts at each factory in the Group by individuals, pairs and gangs, and prizes are offered for the best posters submitted.

A drive such as this could hardly be better timed. With the United Nations' effort mounting to crescendo the absolute maximum output is a prime necessity.

SERIOUS WARNING ABOUT CARELESS TALK

There is too much careless talk. Deplorable cases have come to light and a close watch is being kept. Late in June a student at an evening party close to one of the main Mosquito factories spoke about certain developments; when he was cautioned it became obvious that he simply did not realise the great value of the information he was spreading. Another man has been interrupted when explaining in a public-house how a certain heavy bomber has been improved.

These and other cases are known, and where action has not been taken on a first offence the penalty on a second offence may be heavy. It has been necessary to give every D.H. employee personally a formal printed warning. The Air Ministry states that in future severe punishments will be imposed and that no leniency will be shown on the plea that the information was thought to be worthless or that the informee was considered trustworthy.

The M.A.P. emphasise that the enemy's method is to build up knowledge laboriously from unconsidered trifles. Technical developments (even small ones), mark numbers, programme changes, mods, new premises, output indications—these are the sort of clues the enemy agents are after. Near to important factories they may be expected to be on the prowl, looking harmless enough. Therefore it is not safe to discuss any business matters whatever outside our premises.

Mr. Hearle presenting the D.H. Aircraft Production Trophy to the dispersed sheet metal assembly shop. They were the winners of the June production drive. Mr. Hearle warmly congratulated them on the fine spirit prevailing there. In the front row of the group beside the shield is (l. to r.) Mr. A. G. Foster, foreman, and Mr. E. H. Keane, methods engineer. Behind him is Mr. A. E. Burgess, senior inspector, on whose left is the assistant foreman, Mr. W. Devlin.

KEEP THESE DATES OPEN

On September 4 there begins at the Aircraft Division the R.A.F. and Troops' Gift Fund Benevolent Week, which ends on September 12. On the first day the D.H. sports ground near the main factory will be the scene of many shows and races. On Sunday, September 5, a grand concert at the local cinema is timed for 3 p.m., and during the days following such things as boxing displays, dances, whist drives, football matches and socials vie with each other for patronage. A preliminary attraction which should be immensely popular is the baseball match, U.S. Army Team *v.* The Comets (E. & P. Divn.), at Clarence Park, St. Albans, on August 29 next.

* * *

It is a well-deserved compliment to our Tech. School and to its lecturers that the Royal Aeronautical Society accepted certain of its examination papers on Aircraft Materials; Strength of Materials and Structures, and Aircraft Design. This exempts the students concerned from taking outside exams. on those particular subjects.

* * *

A strictly limited number of copies of the booklet " Even I can understand " can be bought at the D.H. Library (Head Office) for 1s. each; and for 6d. a reprint of Peter Masefield's article on the Mosquito in *The Aeroplane*.

* * *

Mr. F. W. C. Earl, who joined us in the Wages Department at Stag Lane in December, 1926, and was Mr. H. Taylor's right-hand man up to 1940, when he took over the Wages Dept. of the Second Aircraft Group, died suddenly on August 5. We lose another conscientious old-timer. He was very keen on charitable work, and started the Aircraft Division Hospital Savings Group.

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APPOINTMENTS

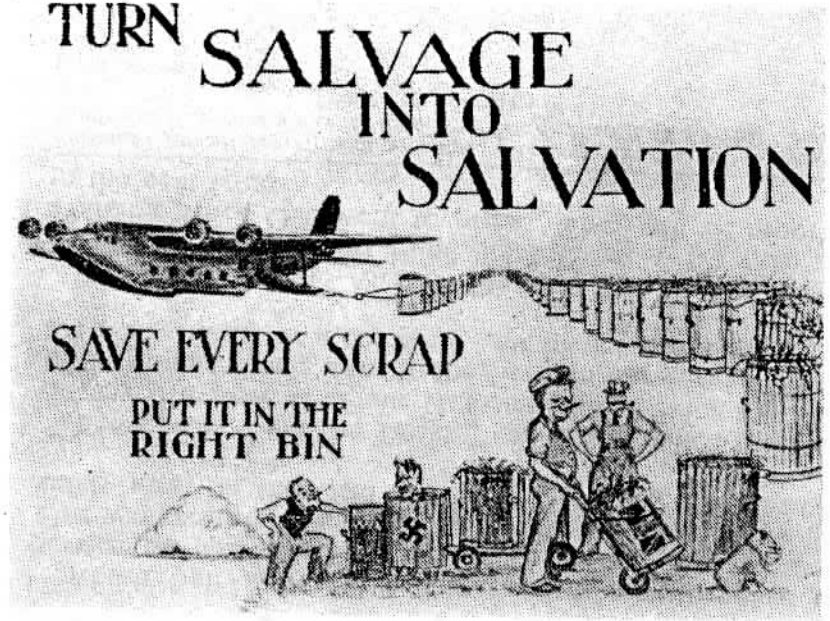
Mr. C. S. Thom, who has been General Manager of the Second Aircraft Group since its inauguration early in the war, has now returned to the main group to assist Mr. St. Barbe in the business management of the company. Mr. J. W. Dale becomes Commercial Manager of S.A.G.

Mr. K. C. T. Marshall, who for the past five years has held an important position at the Pressed Steel Co., Ltd., and who started as a D.H. student and thereafter served in the R.A.F., has been appointed Manager of an important engine overhaul department in our company. Mr. H. Buckingham, who vacated this position, will be appointed to new responsibilities.

D.H. INTERESTS IN NORTH AMERICA

Mr. P. C. Garratt, who has been vice-president and managing director of our subsidiary Canadian company (The de Havilland Aircraft of Canada, Ltd.) since 1936, has now been appointed to the board of directors of the parent company in England and has taken up the post of resident director in North America to look after the parent company's interests in Canada and the United States. He has been in England this month.

Mr. P. C. Garratt (right) with Mr. A. S. Butler



FIRST PRIZE: Mr. G. McGill's design chosen for its "idea" and comprehensiveness including salvage and segregation.

THE SALVAGE POSTER COMPETITION

The holiday competition was a great success. The number of entries was far greater than was expected and the standard was much above the average for amateur contests.

The judges, Mr. Arkell and Mr. Loader, say that the entrants posed them a real problem to select the first three from about a dozen which they segregated in their first examination. Eventually, they co-opted the well-known poster artist Mr. J. Nicholls to assist and after an hour's deliberation all three wrote down their individual selections which, on comparison, proved to be identical, thus satisfying the judges that they had fulfilled the task quite impartially.

Even when their decision had been reached the judges

SALVAGE ALPHABET

A — is **A**ttention—make salvage your aim.
B — are the **B**its (once thought scrap) you'll reclaim.
C — the **C**ollections—all helped on by you.
D — for **D**.H's (our salvage stings too !)
E — is for **E**verything—nothing's too small.
F — obsolete **F**ixtures—come let's have 'em all.
G — for the **G**irls—we want your help, please.
H — **H**igh speed steel—(there's no tungsten on trees!)
I — the **I**ncentive—the boys we want back.
J — ancient **J**igs—tucked behind on the rack.
K — is your **K**eenness to tackle the task.
L — is the **L**imit (the sky's what we ask).
M — are the **M**erchantmen—let's ease their strain.
N — salvaged "**N**othings"—that help make a 'plane.
O — is for **O**pen—(your eyes should be this).
P — is old **P**aper, that no one should miss.
Q — are your **Q**uestions—we'll answer with pleasure,
R — old bits of **R**ubber—real salvage treasure.
S — **S**egregation—with sense this is kin,
T — is the **T**hought—as you seek the right bin.
U — are the **U**-boats—you're helping to kill,
V — is for **V**ictory—just o'er the hill.
W — the **W**isdom the salvage-wise show,
"X" — unknown quantity—all can make grow.
Y — of course, **Y**ou—on whom we're depending,
Z — is your **Z**eal for this salvage unending.

SECOND AWARD: Mr. J. H. Hoar selected the alphabet poem, commended for its adroit rhyming and appropriateness.

THIRD: Mr. S. E. Wiles submitted this simple, direct pictorial story.

felt that there were many entries which deserved recognition and, given permission to award further prizes, they put forward three further contestants for encouragement prizes, each of one Savings Certificate.

The first prize (£5 5s. 0d.) was won by Mr. G. McGill, of the E. & P. Division, for his "TURN SALVAGE INTO SALVATION," illustrated above. Reasons for its selection were conformity to conditions (it stresses both the importance of salvage as a whole and the need for segregation), topicality and aptness in the introduction of the aviation theme. This effort is a good example of the judges' recognition of the "idea" rather than the "execution."

Mr. McGill has made his sketch to a non-standard shape and has, unhappily, missed an excellent opportunity of showing a Mosquito, which would have added greatly to the interest value. The second prize (£2 2s. 0d.) goes to Mr. J. H. Hoar, of prop. rough store. He has chosen the rhyming alphabet and, in the judges' view, has made a great success of it. Third prize (£1 1s. 0d.) goes to Mr. S. E. Wiles. He was prolific in his entries but the judges felt that SCRAP WITH SCRAP was his best because it gets the SALVAGE message over in a very direct way.

E. & P. Division are to be congratulated on gathering all three prizes—a fact unknown to the judges until after their

decision—but talent is by no means exclusive to them for the "encouragement awards" all go to different sections. The special prizes of Savings Certificates go to Mr. C. Starling, of Sub-Contracts, S.A.G., for a still-life study of salvage. Mr. Basil E. Smith, of Propeller Repair Division I, submitted PICK 'EM UP., and humour is represented in the entry of Mr. Harold Boulter, of Pre-Production Stores.

The winning suggestions have all been forwarded to poster artists and soon, no doubt, de Havilland employees will be able to recognise

GOOD WORK: Special encouragement awards have been given for these entries.

in posters on display the "germs" from which they emanated and which are reproduced on these pages.

This Target for the Month, erected in one of the S.A.G. factories, rather amusingly indicates how production is going. The triangle pointing downwards shows planned production. If the other triangle is behind it a red light illuminates a gleeful face of Hitler; if it is level or in front, a green light discloses a very different expression.

STILL SLOGGING

With two more weeks to go, the degree of success of the Second Aircraft Group production drive is not known. That it will be successful there is little doubt. There have been many visitors to the group of factories, representatives of

Page Six

the R.A.F., Fleet Air Arm, and the Air Transport Auxiliary. Flight Captain Watson said that the senior pilots of the A.T.A. had unique opportunities to compare the many types of aircraft delivered to the R.A.F., and what he said of the Mosquito well pleased all who heard him. Air Commodore

Page Seven

Howard-Williams, in telling an inspiriting story of the work of the Royal Air Force, in the different theatres of war, gave high praise to the Mosquito.

Recently released figures relating to Bomber Command illustrate what good use is being made of the aircraft coming in increasing numbers from the factories. In July this year they made twice as many sorties as in July, 1942. They dropped 10,000 tons more bombs at a cost of only 11 more aircraft ; 80 tons of bombs were dropped for every aircraft lost, compared with 40 tons in July, 1942. The loss of personnel for each unit of bombs dropped fell to just half the figure incurred a year before.

Capt. Walker announcing the beginning of the production drive and wishing good luck to the assembly lines operatives.

During all 1942 the R.A.F. made 17 raids when more than 500 tons of bombs were dropped, leaving out the very few 1,000-bomber raids then considered exceptional efforts. This year from February to July Bomber Command made 30 raids of between 500 tons and 1,000 tons, 16 raids between 1,000 tons and 1,500 tons, 9 of between 1,500 tons and 2,000 tons, and 8 raids exceeding 2,000 tons.

Comparable figures for Fighter Command are not available, but there is ample evidence that their activities are on the same grand scale. The Royal Air Force only need increasing supplies to inflict on the enemy even more damaging blows.

And that is what the Second Aircraft Group has set out to do.

* * *

O.J. records the loss of four valued de Havilland technicians in a fatal collision on Aug. 23 between two Mosquitoes on test. The two pilots were George V. Gibbins and John de Havilland. Their passengers, flying on duty, were respectively G. J. Carter, flight-test foreman, and J. H. F. Scrope, aerodynamics dept. observer.

George Gibbins joined us as an apprentice in September, 1925, when he was sixteen, learned to fly at Stag Lane while serving his time, showed promise all round and was picked for test piloting in 1937. Back in 1932 he supervised Tiger Moth assembly in Persia, he was the D.H. service engineer in Baghdad for the England–Australia Race in 1934, and he visited many countries on servicing duties. A few months ago he went to East Africa to test B.O.A.C. Flamingoes. His combination of engineering and flying knowledge was unusual, and he was popular everywhere.

John de Havilland, third son of the founder of our company, had his training in the D.H. Technical School, Feb., 1937, to Sept., 1939, and learned to fly at the London Aeroplane Club, Hatfield. As a sergeant in the R.A.F.V.R. he was called up in the first week of war but later was directed back to the company when we needed test pilots. He has done a good share of the Mosquito work, and was affectionately regarded by all. He was nearly 25 years old.

"Nick" Carter spent two years in the Tech. School, Sept., 1930, to Oct., 1932, and was posted to the Service Dept. and later to the Inspection Dept. As a most energetic flight-test foreman he has seen hundreds of Mosquitoes through to delivery. He was 32.

John H. F. Scrope, aged 24, had three years in the Technical School from Sept., 1937, specialised on the mathematical side and graduated to the Stress Dept. and Aerodynamics Dept. He was of a retiring nature and well liked.

We may thank good organisation that accidents have been few, whether we consider the war period with its vast

numbers of Mosquitoes tested and delivered, or look back over our Company's twenty-three years of continuous production and experimental test flying. Deep regret is felt for those closely affected by this misfortune, which has to be accepted as part of the cost of our particular work, like casualties on a Mosquito raid. Our purpose is to smash the enemy.

* * *

The exchange of books with the Hertfordshire County Library, and stocktaking at the Aircraft Division library, is due shortly, and all borrowed books—please note *all* borrowed books—must be returned there by the morning of Wednesday, September 22. The library will be closed at 2 p.m. on that date, reopening at 9 a.m. Monday, September 27.

Mr. T. Airey, who gained the second prize of 5 savings certificates in the Individual Effort Competition at the Aircraft Division. With him is Mrs. Gooch, who was No. 11 on the prize list. The full list is on page 11.

AIRCRAFT DIVISION "INDIVIDUAL EFFORT" PRIZEWINNERS

In judging who the successful claimants were in the June Production Drive, the J.P.C. sub-committee's investigation of claims caused much additional work for departments which could get no extra help, hence the delay in announcing the results. First prize (10 certificates) went to Harold Gregory, and the second (5) to Thomas Airey. The next 20 each received 1 certificate : Arnold Summerhayes, Edith Parrott, Annie Gamble, Leonard Johnson, Leonard Chapman, James Findlay, Mary Gooch, Thomas Dancey, Herbert Holgate, Thomas Quarrington, Joseph Kellert, Jack Kitchener, Lawrence King, Frank White, James Rennie, Stanley Gaught, Maurice Shapiro, John Impey, Edith Mason, Anna Slattery.

Mr. T. Gregory, who headed the list of "Individual Effort" prize winners. He gained 10 savings certificates.

The dispersed sheet metal assembly shop took the 5 top places on the list, and 9 out of the total of 22. It will be remembered that they won the Challenge Trophy. Very well done, indeed.

THE LONG VIEW

Writing to our Aircraft Repair Group, on the completion of their x000th aircraft, Mr. J. R. Woodcock, Director of the Civilian Repair Organisation of the R.A.F., says : " This is an important milestone, all the more so because you have proved that efficiency can be obtained with pleasantness. I can say with truth that I know of no other place within the repair organisation where the morale and team work are higher than that of your depot. May these pleasant relations long continue."

Practically every visitor to this repair group remarks on what Mr. Woodcock calls the pleasant atmosphere, and we may remind ourselves that efficiency can never be maintained for long without it. The long view is the D.H. view, and in these days of expansion the capture of a happy atmosphere is very much an individual problem for each of the separate Divisions of the Company—and especially the responsibility of the leading executive in each.

* * *

About half a dozen demilitarised Mosquitoes are on service on special routes with British Overseas Airways. One was recently intercepted by an enemy fighter, but it got safely away in the Oslo manner by opening the throttle.

* * *

The R.A.F. " Hit the Target " exhibition which has been displayed at several of our factories gave striking evidence of the damage being done to the German war effort. Efforts are being made for a complete tour of our factories.

* * *

The results of the Aircraft Division R.A.F. Benevolent Fund and Troops' Gift Fund week (Sept. 4–12) were not available when O.J. went to press. They will be reported in the next issue.

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SIR STAFFORD CRIPPS AGAIN GOES DIRECT

D.H. factories engaged in aircraft, engine and propeller building were represented at the secret meeting of managements' and workers' representatives from some 500 of the principal concerns in Britain's great aircraft industry which Sir Stafford Cripps addressed for 90 minutes in London on Sept. 21. The suggestion for this direct talk had come from the General Council of the Trades Union Congress. Sir Stafford's message and one from the Prime Minister were taken back to the Joint Production Committees, and there was much which may not be discussed in public. Perhaps the main point was that by still further ingenuity and more general understanding of all problems we can obtain the greater output which our onslaught upon Germany and Japan demands. The aircraft industry will get more labour and must make full use of part-time workers. He stressed the value of upgrading in sound expansion. He especially pressed for quality of workmanship, and here is something which needs our earnest attention, for the short-cut of carelessness is the long way round for everybody, a drag on output. Explaining the Government's production policy he said he wanted workers concerned to be informed when there was likely to be any large dislocation through some unforeseen change, and he emphasised that there must be such changes to keep pace with the war's phases. Sir Stafford gave collective replies to hundreds of written questions and some spontaneous ones, again manifesting that grasp of his subject which we have remarked upon when he has talked with our own J.P.C's. Eagerness pervaded this 4-hour meeting and it was ended with a resolution pledging the industry to untiring efforts.

AUGUST TWENTY-THIRD MEMORIAL

Money in hand after the purchase of wreaths for the four

men killed in the test-flight accident on August 23, 1943, is to be held in trust and invested, and the interest is to be used to provide a prize (in kind, not in money) to be presented each year to the de Havilland student or apprentice who has during the year put forth the best all-round demonstration of character.

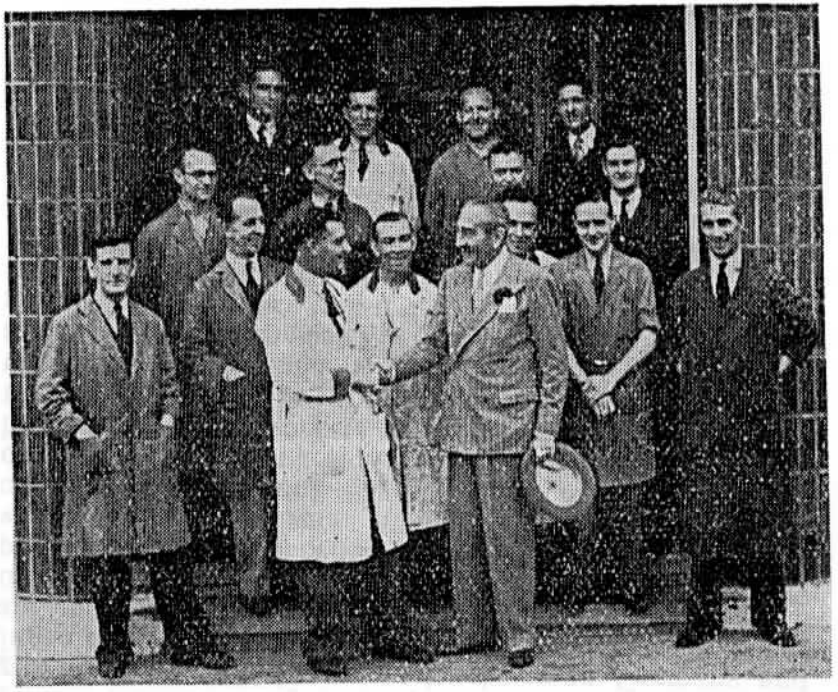
So far it seems likely that there may be more than £100 to invest. The feeling of the committee appointed to consider the disposal of these funds was that an annual prize, open to every grade of D.H. student and apprentice and to be awarded for character and all-round qualities rather than for brains alone, would remind us in the most suitable manner of these four men and their work and would focus attention upon the company's traditional aims and our personal duties as members of a fine industry and as Britishers and citizens of the world.

The Memorial Fund will be controlled by three trustees, one from the Aircraft Division sub-committee and one from the Engine and Propeller Division sub-committee of the Educational Board, also Mr. J. F. Maslin representing the Second Aircraft Group.

If there should be any further surplus sums in the hands of groups who contributed for flowers at the time they will swell the Memorial Fund if sent to Mr. C. C. Taylor, Chief Accountant, Head Office.

AN AMERICAN FRIEND

That widely-known star from Hollywood, Mr. Adolphe Menjou, was at the E. & P. Division the other day. He is over here visiting U.S.A. stations. It was the first factory he had been over in this country. He had seen many in America, and seemed sincere in saying that at none of them was there a more bee-hive atmosphere prevailing. At dinner break he asked the many hundreds present not to think that good news meant we could take it easier. In fact, he said, the war could still be lost if we did not keep our shoulders firmly to the wheel.



LONG SERVICE—This little group of old D.H. hands from the engine machine shop was gathered together to be introduced to Mr. Menjou. Each has been with the Company for at least 15 years. There are, of course, others in the Division with equal service who were not present for the photograph. The team spirit which exists in the Division is shown by the way in which, month after month, the planned output of engines is achieved. Nothing is allowed to stand in the way of that.

Front row (l. to r.): F. Mudford (vertical miller), E. Moore (radial driller), Geo. Ratcliffe (shop foreman), A. Foster (drilling setter), Adolphe Menjou, A. Newman (capstan setter), H. Hedley (grinder), F. Smith (miller). Middle row (l. to r.): F. Burgess (radial driller), H. Salmon (vertical miller), C. Foster (chief time clerk), G. Rowley (centre lathe turner). Back row (l. to r.): E. Williamson (cylinder grinder), D. Palmer (capstan setter), H. Perry (driller), A. Scaife (automatic setting). All joined us in 1928, except G. Rowley who is a veteran of 1920.

AIRCRAFT DIVISION CHALLENGE SHIELD

July was broken into by the annual holiday and it was decided not to award the Trophy for that month. For the month of August the three top groups were : fabric & dope (626 units), electricians No. 1 (536 units) and dispersed wood detail (445 units). 100 units represent the efficiency standard for each group for one week, and the month consisted of 4 complete weeks.

Fabric & dope, therefore, gain the challenge shield for August, which will be placed in the care of the foreman, Mr. S. Gibson. He says all his operatives readily give their best and cheerfully work the overtime required. To speak to him is to see that he is very pleased with them all.

A WELCOME HELP

In the past, to get the required vitamins for children, their mothers have had to go to the food office when best they could. From to-day, orange juice and cod liver oil will be distributed in our factories at fortnightly intervals to those entitled to them. Children with green ration books chiefly benefit. Enquiries should be made at the surgery.

DON'T BE A WHITE RABBIT

The number of precious hours lost throughout the organisation due to late arrival for work is high—although better in some places than others. The attendance committees say that all sorts of excuses are given, the hardy annuals being that the bus left too soon or arrived too late, that the alarm clock failed, or that an alarm clock cannot be bought. Those who remember their " Alice in Wonderland " will recollect how *White Rabbit* excelled at this sort of thing, despite the watch he owned. Mr. Harry Rowntree, the well-known artist who illustrated an edition of " Alice," is creating a series of posters with lateness as the theme. His first one is illustrated on page 5. This and the others will appear at intervals in the factories.

The E. & P. Division Orchestral Society Band. Their concert formed part of the very full programme arranged for the Aircraft Division R.A.F. Benevolent and Troops' Gift Fund week, when more than £800 was raised. Mr. T. C. Jenkins, chief engine inspector, is conducting. The Beverley Singers assisted in the entertainment.

S.A.G. PRODUCTION DRIVE POSTER COMPETITION

The winning posters had some bright ideas. We cannot show them in this issue for lack of space. It is hoped later to include at least those which gained the first prize at each of the factories concerned. Three prizes were given at each of the sections, except at the sheet metal shop, where entries were few and the judges decided to give two awards only. The winners are: Assembly: 1. R. J. Heckford (W.I.D.) 2. G. Holmes (No. 561); 3. M. H. Browne (No. 174A). Wings: 1. A. W. G. Bough (vertical jigs); 2. J. Ashpool (senior foreman); 3. H. A. Bostock (W.I.D.). Special mentions, C. H. Chaplin, E. S. Cutten and E. O. Smith. Fuselages: 1. A. Woods (241); 2. R. Mundy (274); 3. F. Britton (498). Sheet Metal: 1. E. H. Banger (348); 2. W. Murphy (wages). The prizes were 2 Savings Certificates, 1 Savings Certificate and 10s., respectively.

NOW A LUFTWAFFE BASHER

We were paid a visit the other day by one of our ex-sheet metal shop inspectors, who in 1940 joined the R.A.F. and is now a Mosquito pilot in Fighter Command. He is F/Sgt. William Irving, who does night intruder patrols over enemy territory. His squadron shot down 6 of the 14 enemy aircraft destroyed by intruders in a recent period.

Irving was out on patrol over Holland and saw three enemy aircraft circling an airfield. He attacked two of them, watched his shells hit a fuselage and a few minutes later he and his observer saw a large flash from near the airfield. They investigated, and 5 miles away there seemed to be an aircraft burning on the ground, with the headlights from a car approaching the wreck. The car was probably a crash-tender. This looked an absolute certainty, but intelligence officers will allow no element of doubt, so the victim was given only as "damaged."

F/Sgt. Irving says he is looking forward to getting back to his old "Tin Bashers' Shop," but, he says, "not till this lot's over."

F/Sgt. Irving with Mr. F. J. Perham, foreman of the Aircraft Division coppersmiths. They were colleagues in the old days.

APPOINTMENTS

Mr. C. G. Long, hitherto Sub-contracts Manager, Aircraft Division, is appointed as from Sept. 20 to important new duties on the experimental side, with the status of Development and Purchasing Engineer. Twenty-two years of service in the aircraft design and engineering departments of this company have made Mr. Long one of our most experienced technicians, and development engineering was his particular responsibility for several years before the war. Mr. R. D. Hudson, Production Control Manager, takes over the Sub-contracts Department as well from now on.

* * *

The E. & P. Divn. held a ballot on September 16 to see whether its canteens should or should not be managed by a committee representing works and staff; 93.4 per cent. voted that they should.

* * *

S.A.G. are soon to elect a new J.P.C. at its assembly factory. The year of office of the old committee terminated on the eve of the production drive, but it was thought best to postpone the election until afterwards.

* * *

The reorganisation of the main E. & P. Divn. factory is the reason why its challenge shield monthly competition has been discontinued, at least for the present. The tug-of-war "target for the month" is being dismantled for the same reason.

* * *

Lipstick which sticks to the cup from the lip, will now be effectively removed by a solvent found by the Hatfield Group Canteen Committee. This will be widely welcomed.

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WINNING COMET COMES HOME TO REST

To-day, Oct. 20, is the ninth anniversary of the start of the England–Australia Race in 1934, which was won by the de Havilland Comet, DH.88, by an amazing flight from Mildenhall to Melbourne, 11,300 miles, in 70 hours 54 minutes. The winning pilots were the late Mr. Tom Campbell Black and Mr. C. W. A. Scott.

The Comet was the first British aircraft to be designed around the combination of flaps, retractable undercarriage and variable-pitch propeller. It was designed in very few months, three were built for the race, and they were up against the latest in American air liners, operated by air-line pilots and navigators, with air-line ground services to support them.

The winning Comet, " Grosvenor House," G–ACSS, has been standing idle since before the war, and all D.H. enthusiasts will be happy to learn that the company has acquired it and that it has been brought home to our Technical School, where it is being cleaned up. This same aircraft in the hands of Arthur E. Clouston flew from Croydon to Cape Town and back in 5 days 17 hrs. 28 mins. in November, 1937, and from Gravesend to Blenheim (N.Z.) and back to Croydon in 10 days 21 hrs. 22 mins. in March, 1938.

AN S.A.G. GET-TOGETHER

It is a disadvantage of dispersed production that so many operatives rarely, if ever, see as a whole the aircraft they help to manufacture. Difficulties, mainly security and transport ones, normally stand in the way of getting them together at an aerodrome to make up for it. But just now and again it can be done, and the Second Aircraft Group managed it the other day.

They chose a fine sunny October Saturday to get as many employees as possible assembled at the Group's main factory. They were to witness the ceremony of handing over a Mosquito to a pilot of Air Transport Auxiliary for delivery to the R.A.F. The pilot was Captain Watson, who was

Captain Watson, A.T.A., about to climb into the Mosquito after it had been handed over to him by representatives of the S.A.G. Joint Production Committees. The others are (L. to R.) Mr. G. Wood-Dine, Mr. A. Rawlinson, Mrs. H. Worrall, Mr. G. W. Brock, Mr. A. Westacott, Mr. A. Walker (A.I.D.) and Capt. Walker.

known to almost everybody there, because he had a little while before described the work of the A.T.A. to assembled operatives at each factory in turn. Before the pilot took over, he was introduced to a representative from each of the factories concerned—wing, fuselage, sheet metal and

Capt. Watson is introduced to Mrs. Worrall of the sheet metal shop.

assembly—who were thanked for the good work put into this much wanted aircraft. Shortly afterwards another Mosquito was on its way into service.

Before the ceremony took place, a flight of Mosquitoes from an operational squadron made a formation fly-past and demonstration of the mosquito's fighter-style manœuvrability.

The R.A.F. Central Band played throughout the afternoon. Just before the end our chairman, Mr. A. S. Butler, drew from a basket the winning ticket for a framed picture

Formation flying from the S.A.G. viewpoint.

of a Mosquito, raffled for the R.A.F. Benevolent Fund, which in 50 minutes realized more than £12. He also drew the winning ticket for a lemon which had been flown over from Sweden to the offices of the Joint Committee for Soviet Aid, and which had been sent by them to S.A.G. on the occasion of the visit by the Dean of Canterbury. It was raffled in aid of the funds of the Committee and over a period of a few days raised £14.

RAISE THE STANDARD OF WAR SAVINGS

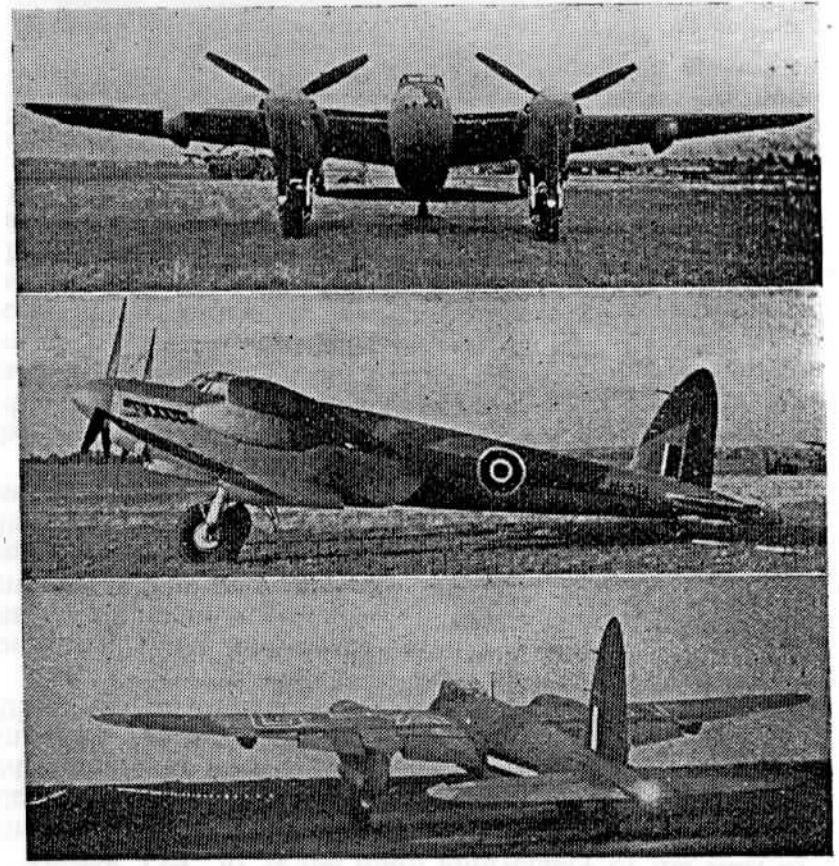
The de Havilland savings groups are making special efforts to reach the new targets set by the National Savings Committee. They are firstly that the total amount contributed by everybody to war savings should not be less than one shilling in the pound of gross wages and salaries paid ; and secondly, that of the total number employed at least, 3 out of every 4 should be members of their savings group. This is to be achieved by March, 1944. Application forms, for new savers, and increase forms for old savers can be obtained from the normal offices in all divisions.

GROWING VERSATILITY

For those who do not get the chance of seeing and working on Mosquito assembly here are pictures of later versions only recently released to public knowledge. The fighter-bomber whose exploits in Western Europe and the Mediterranean have been so highly praised looks identical to the Mark II fighter but for the wing tip drop tanks provided to extend its range. This version has been most effective against rail transport and shipping as well as on night snooping around enemy aerodromes and on long-range fighter patrols.

The high-altitude Mosquitoes are another headache for enemy defences. Invisible, inaudible, fastest thing in the war, they traverse Europe on photographic and other missions, often without interception and without a shot being fired at them. Imagine the value of their speed and range in the short hours of winter daylight.

The Mosquito transport takes useful loads in the place of bombs and is employed on secret regular air-line service by British Overseas Airways Corporation. Mails and freight have never been carried so fast in history and in speed there is safety as well as economy.

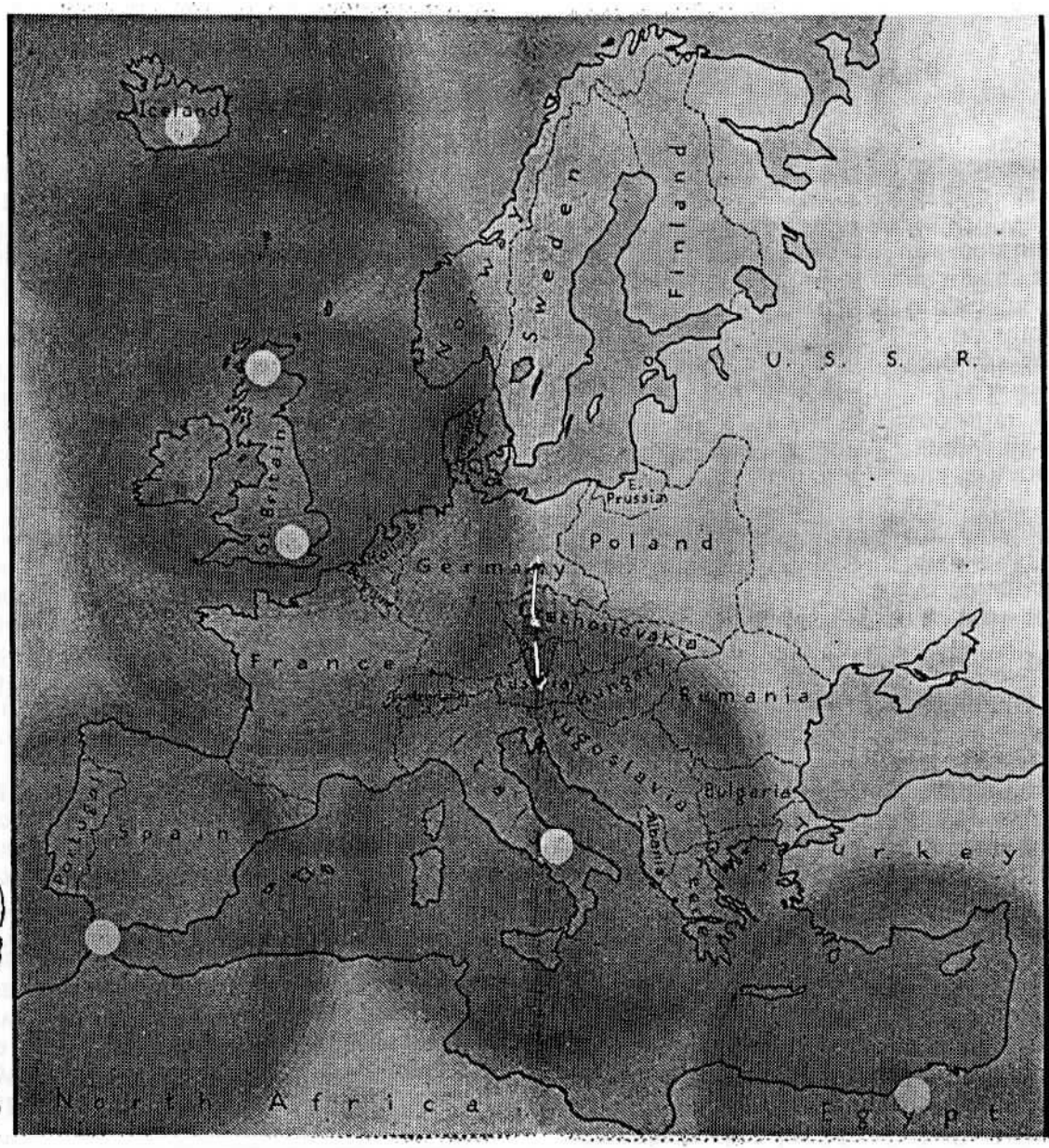


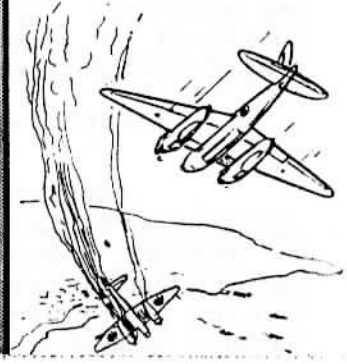
Three Mosquito marks recently released. Top : the fighter-bomber, centre : the high-altitude version, and bottom : the Mosquito transport.

THE SHADOW OF THE MOSQUITO

Steadily the strongholds of the enemy's camp come within the out-and-home operating radius of the world's fastest attacking aircraft. Observe how the entire western seaboard of his usurped and fortified continent is covered by the shadow of the Mosquito, how the south is assailed and the south-east threatened by our second-front progress in the Mediterranean, now drawing off weighty forces from Germany's defence against the Russians.

The overlapping Mosquito playgrounds are but crudely drawn here, for obviously effective radius varies widely between different versions of our aircraft and destructive load carried. Any accurate indication is forbidden by the censor. Yet simple and conservative deductions from the news of daily and nightly actions suffices to show where





Mosquitoes can get and will be getting in their versatile work.

Does the public realise how the versatility of the Mosquito has built up in two years of active service? Every suitable night, while Mosquito night fighters are defensively patrolling British skies, offensive Mosquito fighters scour the space above enemy fighter and bomber bases. Meanwhile Mosquito intruders are attacking these bases and other installations to disorganise Germany's defences against Bomber Command's major assault. Synchronised with this main attack of the "heavies" Mosquito night bombers confound the enemy with diversionary attacks delivered with the surprise value of their exceptional speed. At the same time Mosquito transports are maintaining scheduled services in dangerous night skies.

By day the long-range ocean-patrol Mosquitoes sweep regions like the Bay of Biscay for Ju. 88 and other aircraft that are guiding and protecting the U-boats, and venture inshore to tempt the F.W.190's to a watery grave. Mosquito day intruders cloud-hop on to munition trains and shipping. Mosquito day-bomber formations seek out their precise targets for unescorted spot-on attack, usually by hedge-hopping methods. And all the while the secrets of the enemy's movements, defences and industrial dispersal, far and away across Europe, are being revealed by the photographic eye of the reconnaissance Mosquito. From Western and Mediterranean bases Mosquitoes wage the war in their specialised ways, while farther afield British, Dominion and American airmen familiarize themselves with the characteristics and possibilities of the type in preparation for still wider exploitation.

QUICK CHANGE

An engine assembly department of the E. & P. Division has been moved. Why, and where to, cannot be discussed, much less written about. Such a transfer is a ticklish problem when production must go on, but how efficiently the difficulties were overcome is shown by the letter which was afterwards sent by Mr. J. J. Parkes, the general manager, to Mr. Bence, the superintendent. It read: "I was very gratified to see that despite all the dislocation and difficulty which must have been occasioned owing to the move, the Gipsy engine programme was maintained so satisfactorily. This is greatly to the credit of all concerned."

AN ECHO OF THE JUNE DRIVE

Before winding up the affairs of the Aircraft Division June drive the J.P.C. sub-committee singled out for special mention two members of supervision. They were Sid Courtney, main factory progress dept., and Jock Devlin' sheet metal assbly shop asst. foreman. Each contributed towards the success of the drive a bigger share than most.

EXCHANGING IDEAS

Mr. Venn Brown is on a visit to us from our Sydney propeller factory. He spent a few weeks in U.S.A. on his way here, and gained the impression that in propeller practice, and to a limited extent new fighter types, this country at least equals and often surpasses America.

Mr. Venn Brown, who is paying us a visit from our Australian propeller factory.

The D.H. Company in Australia employs several thousand hands to produce latest aircraft and propellers from local materials, as well as servicing equipment for the combined Air Forces of the South West Pacific. Mr. Venn Brown is in charge of their experimental design office.

RESOURCEFULNESS IN D.H. TORONTO—Built of commercially available mild steel plate, and weighing half as much as conventional presses, this 3,000-ton hydraulic press was designed by Mr. R. E. Young, a senior designer in our Canadian company. It was built by Horton Steel Co. and has been in use on rubber press work at our Toronto Mosquito factory for almost two years.

HELPING MATERIAL SUPPLY

When Sir Stafford Cripps addressed representatives from the aircraft factories recently, he made a feature of the raw material question. He stressed firstly that scrap work is a likely cause of raw material shortage, and asked all to do their very utmost to cut it right down. Then he pointed out that stocks of material in hand which have not moved for a considerable time may cause a shortage elsewhere

where these very items may be in urgent need. His opinion was that every company should have an individual with the responsibility to see that such stocks were disposed of and thus put back into service. Such a scheme is at work throughout our organisation, and Mr. J. M. Jardine has been appointed personal assistant to Mr. Hearle to deal with surplus stocks and other things.

AS OTHERS SEE US

The other day at a J.P.C. meeting our editor, unknown to the others as such, heard what was thought of O.J. criticism was that production items relating to some factories were conspicuously absent. We are deeply conscious of it. Give us the news and we will finish *Our Job* to the satisfaction of more readers than we now do. Address : Internal Relations Dept. Head Office. You could help a lot if you noted it.

The Dean of Canterbury addressing operatives in the S.A.G. assembly shop canteen. He recently paid a visit to some S.A.G. factories and described the impressions he gained from a short stay in Russia.

All thanks to the Service Dept. team who recently put through a quick job on a rather large aeroplane for an important Government research department.

Billeting arrangements for those concerned at the main aircraft factory have now been placed in the hands of Sister Heron. Enquiries should be made to her at Dr. Thompson's office.

* * *

Of all D.H. propellers which are returned to our repair depots, whether damaged by shells, bullets, crash landings, or otherwise, no less than 66 per cent. of the blades are straightened out and go back into service again—this despite the ill effect of hard runways and higher landing speeds in crash landings.

* * *

By September the Aircraft Division had in two years donated £2,500 to the Red Cross Fund, through the medium of the collecting boxes carried by the pay clerks.

* * *

The E. & P. Divn. Penny-a-week Red Cross Fund is younger. It started this year and passed the £500 mark in the twentieth week.

* * *

A party of 10 from the wings section, S.A.G., visited a Mosquito operational squadron a Sunday or two ago. They were very hospitably received, and enjoyed an interesting show-round.

OVERHEARD

One day recently the wife of one of our employees dialled "TIM" but, as sometimes happens, the lines got crossed. The result was that she heard quite an interesting conversation about the production of propeller blades, and the troubles involved in making them; which only goes to show how guarded we should be at all times in what we say in public and over the telephone.

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Private O.J. No. 51
Memorandum of in ormation to all de Havilland personnel. 4/11/43

ONE TASK FOR ALL

A few days ago in Manchester Sir Stafford Cripps said that forty per cent. of the workers in aircraft industry are women. He said that whilst in wartime they can only be given a smattering of general engineering knowledge, they were being very successfully taught the specialised use of certain machines. At about the same time Sir Frederick Handley Page said that he would not have believed that manicurists and show girls, mannequins, shop assistants and housewives, could have become such first-class aircraft workers.

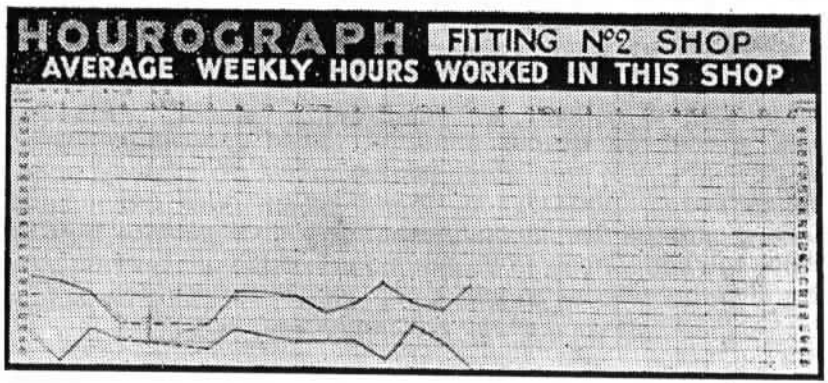
Air Commodore Howard Williams in the S.A.G. sheet metal shop. He was surpr'sed to find there were more than 50 per cent. women employed there.

Whilst we have not in all departments reached the proportion of women workers named by the Minister of Aircraft Production, almost all visitors to the de Havilland organisation remark upon the number of girls they see working on a wide variety of jobs with such seeming efficiency. They are surprised when told that preliminary training is, at most, a few weeks in our own training school or in a Ministry of Labour centre. Many, indeed, do not even have the benefit of that; they come straight to the factory to work and learn under the eyes of a qualified man. One reason why this can be done so successfully is the use of machinery specially designed for one particular purpose. Another reason is that jigs and tools carefully thought out will enable the relatively inexperienced hand to turn out selected items rapidly and accurately. Modern methods thus achieve quantity production with great economy in man-power.

Mrs. Mary Martin (Engine Division) who makes a great success of capstan work, after 5 years canteen duties. A regular 57 hours a week does not stop her being on the canteen committee and the minesweepers' fund committee. She is also a shop stewardess.

Altogether, women are, within their limitations, doing a fine job. What are their limitations? Chiefly, that they cannot all be expected to work the number of hours asked of the men. The home obligations of some are so much greater, what with housework shopping, and in many cases, children to be thought of. Then there is the question of absenteeism, which is complicated by the factor of leave given to soldier husbands. All these things make it difficult to compare women's working hours with those of men. But, all women do not have husbands to study, or dependants to look after. It is to those with few responsibilities that we must first look for an improvement in the number of hours worked and more regular timekeeping. There seems to be in the minds of many a feeling of complacency, a " victory-is-in-the-bag " attitude, which is leading to shorter working hours, more frequent absence without reasonable excuse, and more careless timekeeping.

Of course we shall win this war. What Russia and the Allies are doing make this certain. General Montgomery said so on the first anniversary of the battle of El Alamein. But let us not forget that he also said one thing more is necessary : that every one of us, the workers in the factories and soldiers on the battle front—we must all continue to pull our full weight in the national war effort, and together see it through to the end.



Hourographs such as this are in all the Aircraft Division shops. They show week by week the average hours worked. The men's curve is the higher one ; the' ower is the women s.

AIRCRAFT DIVISION PRODUCTION TROPHY

For September the three leading groups were : fitting shop No. 2, 614 points ; dispersed engine installation, 611 points ; and dispersed coppersmiths, 575 points. To have lost by so narrow a margin must seem like bad luck to the runners-up. They have tried very hard each month. When they do win the trophy they will feel they deserve it.

The September winners produce most of the small sheet metal details, and work closely with the sheet metal assembly shop, the June winners. Mr. Harry Rhodes is the superintendent. He joined our sheet metal department in 1928 and was promoted from foundry foreman last year. The foreman is Mr. S. C. Brown, who has been with us 13 years.

Trying out a new jig. Superintendent Harry Rhodes and foreman S. C. Brown, with Miss Brenda Horney, checking a top cowling detail.

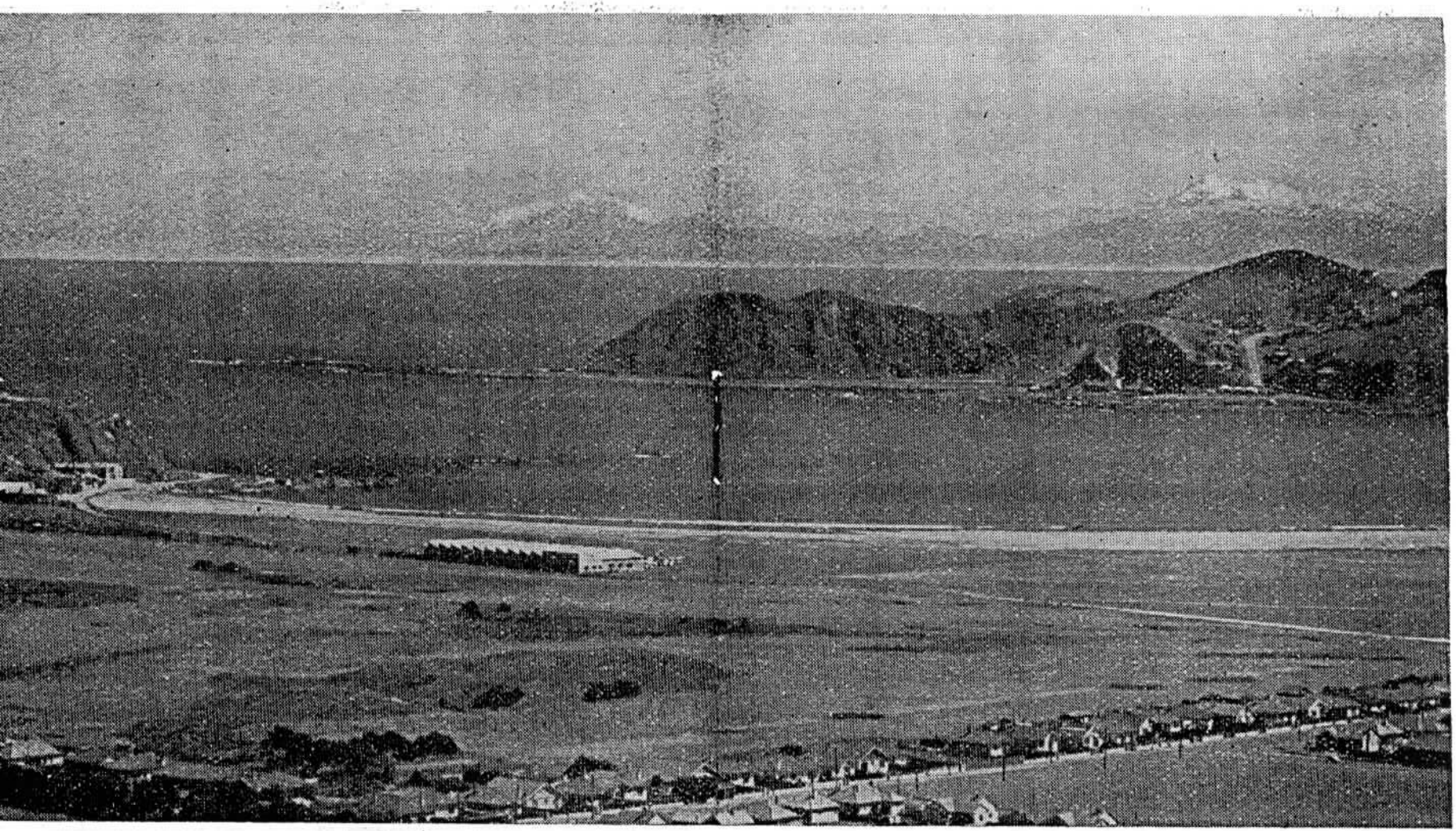
Nearly half the operatives are women, whose average of weekly hours worked reached a high peak in September, which greatly helped. Mr. Brown says he is proud of the team.

PAY-AS-YOU-GO TAXATION

The new system for the deduction of income tax is going to eliminate the persistent complaint of deductions not being in line with wages. The present deduction scheme is only satisfactory to a limited extent, as everybody is paying tax week by week on wages earned some time in the past. For many employees wages fluctuate month by month, and "heavy" tax on "light" wages results in temporary hardship.

The new scheme is due to start in April, 1944, and although the complete details have not been finalised, the outline of the scheme is not likely to be altered to any great extent. The scheme is not simple but does its job remarkably well. It is not that a certain fixed percentage will be deducted from your weekly earnings ; the tax each week will depend on the total wages you have earned from the previous 6th April. The Company will be given tables showing, for example, that if on the 25th week of the year a single man has earned £220, he should have paid a total of £27 tax. In the previous 24 weeks he may have paid £25 tax in all, and therefore his deduction for the next week will be £2. The whole system of deduction will follow this procedure ; it is stated that all employees will be able to check their deduction as tables will be made available to them. There will be different tables for the different "codes," these being based upon the total of allowances.

Before next April each employee will receive a code number and possibly a copy of the table for his particular code. The code is arrived at by summarising all the allowances. For example, a fitter who is married with one child



DE HAVILLANDS IN NEW ZEALAND: Have you ever wondered what the factory and aerodrome of the youngest overseas de Havilland branch is like? Here it is, built in 1939 beside the sea at Rongotai near the capital city of Wellington, on North Island. It is about 13,000 miles from here, yet a D.H. Comet in March, 1938, flew there and back in under 11 days. The plant makes Tiger Moths by the hundred, overhauls and rebuilds all D.H. aircraft and Gipsy engines, also Oxford aircraft (for which it makes major components) and all types of British and some American engines.

will be code No. 36. He is allowed £11 for his tools, £140 for himself and his wife, and £50 for his child. These allowances total £201, and according to the new table of codes, the code number for £201 is 36. If he owns a house the chargeable value of which is, say, £22, the £22 will be deducted from his total of allowances, and in the example shown above will leave £179, for which the code number is 31, and the rate of tax correspondingly higher.

As regards staff, tax for 1943/44, which they have not started paying and would normally continue until October, 1944, will not be deducted after March 31 next, and the following year's "Pay-as-you-earn" tax will then commence. Manual employees who in February, 1944, would pay on their wages for October 5 last will instead continue paying on their existing rate. The total tax paid in the month of February and March should equal 2/12 of their tax liability on the whole of their wages from April, 1943, to April, 1944, and any adjustments will be made at a later date.

It will be seen, and no doubt it has been read in the press, that no employee incorporated in this scheme will pay his full tax for the year 1943/44, and thus, of course, there will be no post-war credit on that year's tax.

The "Pay-as-you-earn" scheme is fair to all those whom it embraces, and there seems to be no real reason why it should not include at least all who are at present covered by the deduction scheme. It will involve considerable extra work both in industry and in government departments, but it will also create a greater sense of satisfaction and security for tax payers as they will know that, should they be forced into retirement or unemployment, they will have no tax liability to follow them.

Repayment of tax, should an employee's wages be reduced or stopped through illness, will be made immediately by the Company. A man who draws very little money in one week through having days out, may even find that his wages are supplemented by an income tax rebate during the same week.

A WORD FROM HARRY POVEY

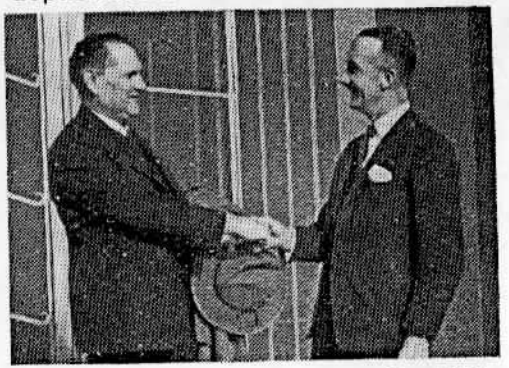
Between flying to England and flying back to Canada, Mr. Povey (see photograph below) wrote the following message for us :—

After being away for two years on the setting up of Canadian Mosquito production it has been a great pleasure to make a flying visit home to meet my very many friends again.

Mr. Rudge, who so ably carried on with the work I left behind and which was only partially completed, is to be congratulated on his many improvements in old methods and introduction of new ideas. Under the leadership of Mr. Westbrook the activities in the shops and enthusiasm on the production line are very impressive and I am taking back to Canada a little of the healthy atmosphere which he has created.

As there is a difference of two years in the relative starting periods of our production, the English factories will always be ahead of us but I must admit that I am staggered at the progress made at home here and the flexibility which has become so outstanding a feature of the Mosquito design, and the many types you now have in production.

My short but interesting visit has enabled me to thank personally all of those departments which have so greatly



Methods specialists meet again : Mr. Harry Povey (left) back here again on a flying visit after two years as Works Manager of D.H. Toronto where he has been organising Mosquito manufacture. He is shaking hands with Mr. S. R. Rudge, our Production Engineer, Aircraft Division, who, as he says, 'ably carried on with the work I left behind.' Read Mr. Povey's message above.

assisted by keeping us informed of all improvements in jigging and tooling, all modifications, all design and technical data. This must have been a load to carry on top of your burdens on this side of the Atlantic, but it has made possible Mosquito production in North America.

I take back to Canada a great impression of everything and everyone. Mr. W. D. Hunter, who went across with me in 1941 and is now Chief Engineer of the Canadian branch, will, I know, wish to be associated with my remarks and will join me in good wishes to all our old friends in all departments of the works.

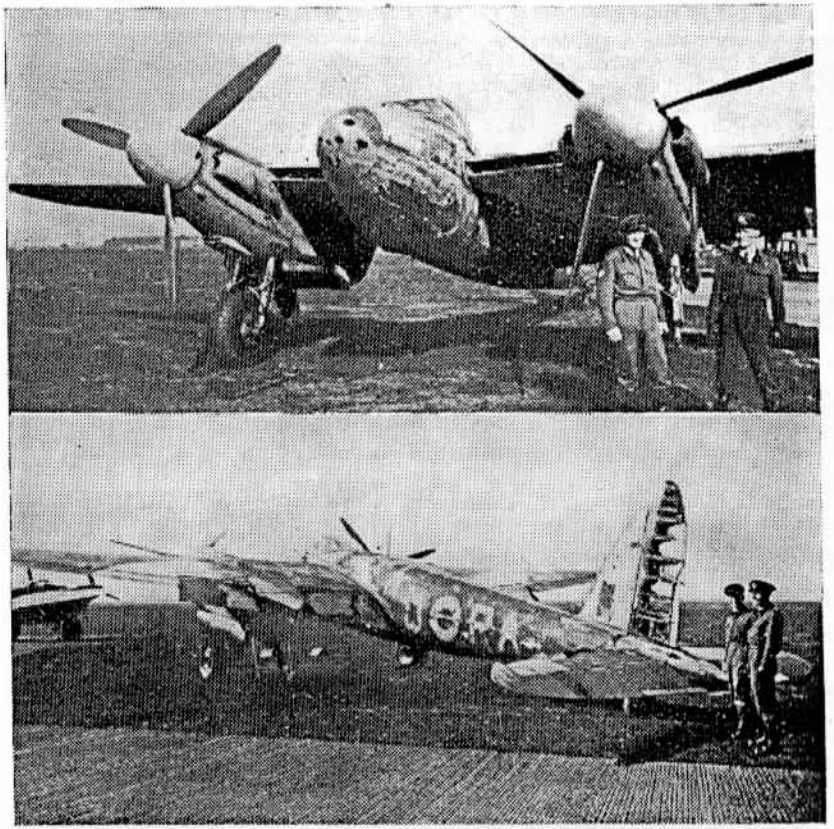
BATTERED, BUT BACK

A Fighter Command Mosquito, D.Z. 757, was on intruder patrol recently. Its crew were Fl. Lt. M. A. Cybulski and F/O H. H. Ladbrook. They spotted a Do 217. They dived on it and when within 100 ft. gave it a three-second burst of cannon fire. The enemy exploded with a terrific flash, and went down in flames. But burning fuel and oil flew back on to the Mosquito so close behind it, scorching the fuselage from nose to tail.

"I didn't realise this at the moment," Fl. Lt. Cybulski, the pilot, afterwards said; "when the Dornier exploded the Mosquito went into a steep dive. Then flames covered our aircraft which by now had lost about 4,000 ft. I was blinded, but Ladbrook got control and brought us out of the dive. For five minutes or more he kept control until I recovered normal vision. We soon realised that the rush through the air had put the fire out, but our troubles weren't over. The port engine suddenly packed up, and to make things worse control of the Mosquito was difficult because part of the skin had been torn off the rudder. However, we kept speed by gradually losing height, which meant flying through rainstorms, and we made base after a trip of about 200 miles. When we touched down we found also that the

port wing skin inboard of the engine, the bottom of the starboard wing and the port tailplane skin had all been badly burned."

The home of Fl. Lt. Cybulski is in Renfrew, Ontario, and F/O Ladbrook, the navigator, is a Londoner.



(Above) The Mosquito can take it: The flame-licked fuselage of DZ 757. F/Lt. Cybulski is on the left. His companion is F/O Ladbrook. (Below) Another view of the aircraft.

M. R. O.

The Mosquito Repair Organization have many parties, with engineers in charge, whose chief function is to repair on site Mosquitoes damaged too badly for the squadrons to deal with themselves. They do other things besides, such as incorporating on site important modifications. It was after such a job that the Air Ministry made this minute :—

" *Mention should be made of the really admirable way in which the working party from de Havillands carried out their duties. They sacrificed their rest on at least two nights, and I was credibly informed that under normal circumstances the work in question would take about a fortnight. They completed it in about 6 days.*"

* * *

There has been a repatriation of prisoners of war. The suggestion is that a simple way to show gratitude to the organisations that succour our kinsfolk in enemy hands, would be to put an extra " thank-you penny " in the Red Cross box next pay-day.

* * *

In the Aircraft Divn. drive to increase War Savings, so far 305 members of the War Savings League have increased their weekly sums, and there are 33 new members.

* * *

The engine inspection team (captain, Mr. A. E. Wilkinson) of the E. & P. War Savings League, reached 100 per cent. membership by September 15 last. The next two teams were : propeller service (captain, Mr. T. Coulson) 98 per cent., and propeller inspection (captain, Mr. J. Richardson) 93 per cent.

* * *

Everybodys secret is nobodys secret. Keep it to yourself.

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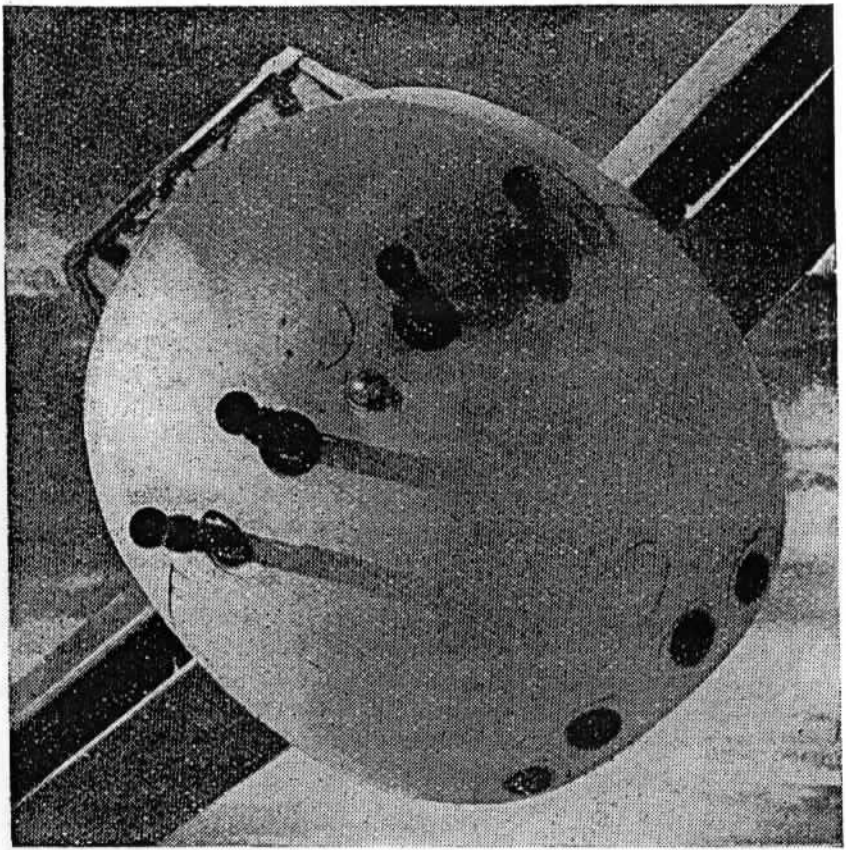


THE R.A.F's ALL-ROUNDER : This is a Hunseye view of the Mark II Mosquito, the craft which countered the F.W.190 night bomber. Mosquito functions to date : Long-range day fighter (ocean patrol work, etc.), Night interceptor for home defence, Night fighter-intruder, Day intruder, Day and night bomber, low and high attack, Day and night long-range reconnaissance, Day and night transport

MOSQUITO FIGHTER PREVENTED F.W.190 BLITZ,
F.W.190 CANNOT PREVENT MOSQUITO BLITZ

Take pride in the Mosquito. Fresh facts released since our last issue demonstrate, with the backing of the Air Ministry itself, that this indeed is a wonderful aeroplane, and I who took no part in its creation can freely say so. What a stroke of genius to capture *just* that formula ! Small enough for fighter speed, big enough for great destructiveness. Able to catch even the little single-engined Focke Wulf fighters which the enemy thought would be fast enough to beat our night defences (albeit with a tiny bomb load), yet having range enough to chase the F.W's right back over the sea without fear of running out of petrol.

And the boot fits differently on the other foot. The Mosquito is just big enough to carry a really damaging bomb load to any part of Germany, but just small enough to be too fast for their fighters ! What an exact choice was made by de Havilland engineers in those days of 1940 !

Twice in three days the Air Ministry, speaking with the voice of the R.A.F., told the plain blunt facts of the Mosquito's success. Their words are the air crews' gratitude for a real winner. On Oct. 31 they spoke of our fighter, our Mark II. They went so far as to say that *it was the Mosquito* which countered the Luftwaffe's attempt to cut its night-bomber losses by using F.W.190s in raids on London and south-east England this summer. In other words, it was de Havillands. In three nights one Mosquito squadron shot down six F.W.190s—four of them the same night. The official statement said that Mosquitoes are Fighter Command's latest and fastest night interceptors and that they have accounted for a large proportion of all the enemy destroyed over this country recently, including Germany's best fighter-bombers and medium bombers.

Remember, this is cold officialdom speaking. This is an unsolicited statement of the judgment of Fighter Command.

It does us great honour. Two days later, Nov. 2, Bomber Command spoke its feelings about our bomber, our Mark IV, through the same official Ministry News Service. The very fact that the News Service allowed a second eulogistic " write-up " to go out within 2 days of the first is a measure of the exceptional merit of the Mosquito. This second statement said that besides nearly 60 major attacks by the R.A.F. in the past six months Mosquito bombers made 1,000 nuisance sorties, from which only 11 aircraft, or 1.1 per cent., are missing. From May 1 to Oct. 28–29 Cologne has had 33 attacks by small Mosquito formations, Berlin 27, Duisberg 26, Dusseldorf 15, Aachen 8, Dortmund 6, and 30 other German industrial centres have each had one or more Mosquito bites.

" These Mosquito bombers," officialdom continues, " behave very differently from the few German aircraft which have recently ventured over Great Britain in poor imitation of their tactics. Their work deserves a more dignified title than nuisance raiding for unlike their German counterparts over England they are given specific objectives to which they successfully penetrate and they bomb with purpose and not from a mere desire to make a bang and set the sirens off. When the British hear the sirens they know that it is extremely unlikely that it is caused by more than a mere handful of German bombers whose main axieity is to get away again as quickly as possible. The Germans know that we can and will throw 2,300 tons upon a single town in forty minutes wiping off a vast area of industrial activity.

" The damage caused by the little formations, while small compared with the havoc wrought by Bomber Command heavies, is not without importance in our assault upon the German war effort. Apart from the considerable damage which their bombs inflict, the effect of these formations upon a country as bomb conscious as Germany is incalculable. Frequently our Mosquito bombers visit cities which have already been heavily bombed, thus keeping the A.R.P. ser-

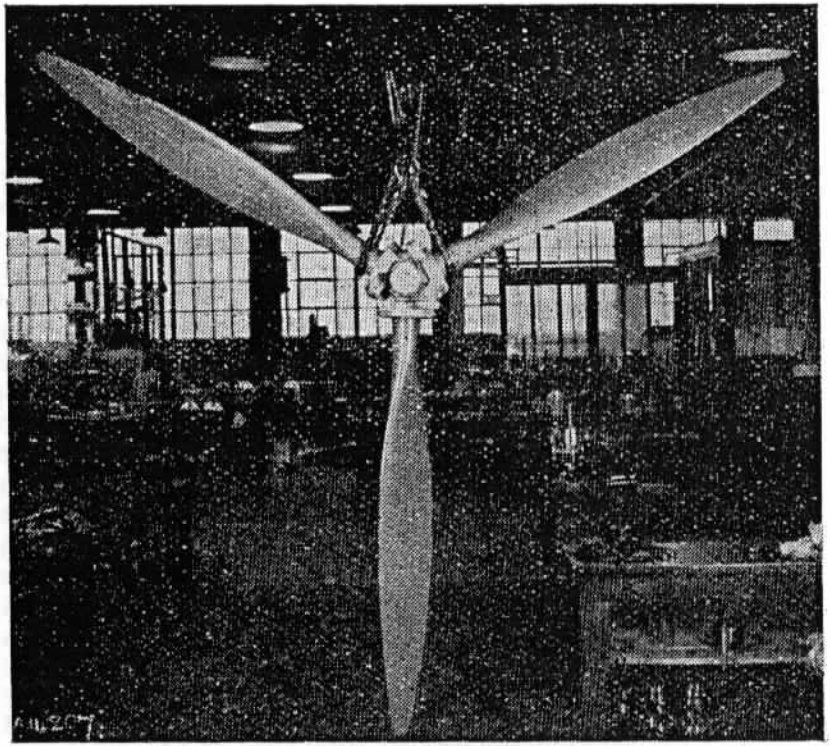
vices and the remaining munition workers on the jump until the heavies come again. The loss of sleep and of production time on night shifts caused by these Mosquito raids must be considerable.'

"They also serve to show up the inadequacy of the boosted German defences in comparison with our own. Mosquitoes have to stay over hostile territory on the average for five times as long as German aircraft now expose themselves to the British defences. Yet in the past three weeks of frequent German nuisance attacks our defences have destroyed some seven per cent. of all the German aircraft crossing our coasts although they are over land as a rule for only a few minutes, flying upon no apparent plan, and generally scatter in ones and twos over some ten thousand square miles of eastern and south-eastern England and the London area. Our Mosquito bombers in six months, although flying in formation towards recognised targets, have averaged a loss only just exceeding one per cent. These Mosquito bomber sorties are quite distinct from and additional to the Mosquito intruders which Fighter Command sends out night after night."

D.H. AMONG BIGGEST MERLIN REPAIRERS

For years we have been referring furtively in O.J. to "a certain engine repair department" which was managed until recently by Mr. W. U. Snell (now Engineering Manager, Propeller Divn.) and is at present supervised by Mr. K. T. Marshall. We are at last permitted to say that the repair of Rolls-Royce Merlin engines is what this department does, a job taken on in the grave days of 1940 and developed in true D.H. style until we have become one of the biggest repairers of Merlins in the country with a bigger output for our floor area than any other such unit. Air Vice Marshal C. W. Weedon, Director of Repair and Maintenance, and many Rolls-Royce and other friends had a good time at the sports club dance held by this department on Guy Fawkes Night.

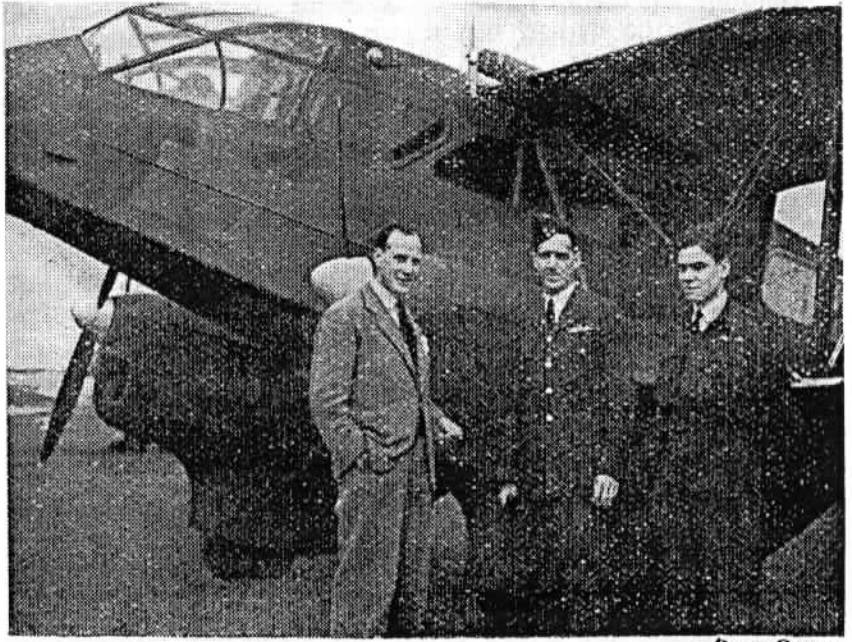
GIPSIES IN ACTION: Amusing and exciting adventures, but very light casualties, have marked the experience of the Taylorcraft Auster III artillery spotter aeroplane which has been in front-line action a great deal in the Mediterranean campaign. It has had conspicuous success, for, being the slowest aircraft in the R.A.F., it could plot enemy gun positions which faster machines had tried in vain to locate. Austers did this at Long Stop Hill (Tunisian campaign) under an umbrella of Spitfires. The Auster III has de Havilland Gipsy Major engine, the engine behind which nearly every R.A.F. pilot learns to fly, only engine in the world that does 1,260 hours' work (equal to flying half way to the moon) between overhauls.



AFTER 7,500 *HOURS: This propeller came back to Mr. Walter's department for examination after six years' service on flying-boats of British Overseas Airways Corporation. It holds the record—so far. It is one of the old two-pitch bracket types known and flown the world over, and we delivered it to Imperial Airways on November* 15, 1937. *We found very little wrong with it after nearly a million miles of flying* (*say*, 40 (*Picture on right*). *times round the world*).

RAPIDES FOR RHODESIA: We are finishing off a fleet of Dragon Rapide aircraft as passenger-freight transports for vital communications in East Africa where this type has carried nearly all the internal air traffic for many years. In this picture W./Cmr. Jack Davison (*centre*), *Rhodesian Air Force Liaison Officer in London* (*he managed the de Havilland branch in Rhodesia before the war*), *is seen with Mr. C. S. Thom* (*left*), *Business Manager of our company, and F./Lt. R. L. Jones, test pilot of our Aircraft Repair Group. We are also supplying a fleet of these modest branch-liners to the Turkish State Airways.*

One of the more senior men on our aircraft design staff, though he left us in 1930 *for a short while, is Mr. A. T. Cross, A.F.R.Ae.S., who began his aviation career back in* 1909 *working with Sir Hiram Maxim on an experimental machine at Crayford in Kent. In the* 1914–18 *half of the war he was on design work at the R.A.E., Farnborough, and then went to "Airco at Hendon, from whence he came with Capt. de Havilland and our other founders to Stag Lane in* 1920 *to form the de Havilland Company. He was Chief Draughtsman for ten years until* 1930 *and to-day holds the responsible position of design checker on all aircraft drawings. There are* 8,000 *on the original mark of Mosquito alone!*



MOSQUITO MERCHANT-SERVICE BRAVERY

Completely unarmed, Mosquito transports have been doing most of the work this summer on the regular air service of British Overseas Airways to Stockholm. Civilian crews fly them and the German Air Force tries each night to shoot them down. Captain Gulbert Rae, a B.O.A.C. pilot on this line, has been awarded the O.B.E. and his radio officer, Mr. James Payne, the M.B.E. for their high courage in operating this route. Both men come from Scotland. Twice Capt. Rae saved his Mosquito when attacked by German fighters.

Read Captain Rae's story :—

" The first time we were attacked was in daylight just off the Swedish coast. It was a clear morning and I was flying a civilian type of Mosquito aircraft carrying freight and very plainly marked with ordinary civilian markings. We were at 17,000 ft. when I saw a German fighter above us in my mirror. It was a Focke-Wulf 190, and it came down at us with its cannon blazing. Some of its shells hit our starboard wing, making several holes and knocking bits off, and shells also hit our fuselage. They shattered the hydraulic pipes that worked the undercarriage and the wing-flaps. Our escape hatch flew off—causing everything in the cabin to be sucked out owing to a change in air pressure. Maps and gloves flew out, and for a few seconds I was blinded by dust. We took evasive action, and made a beeline hell-for-leather for the Swedish coast. We radioed the Swedish air authorities that we couldn't get our undercarriage down and our wingflaps weren't working. The Swedish authorities were very efficient—they cleared the air round the landing-field of all other planes, and lined up ambulances and fire-tenders. We touched down at 120 miles per hour, and skidded for three hundred yards but there wasn't much damage to the aircraft ; and after repairs it was able to go back into service.

" A few weeks later we were flying another civilian

Mosquito at over 20,000 ft. in bright moonlight when my radio officer and navigator, James Payne, saw some vapour trails. A few seconds later two fighters attacked us, one after the other. I took evasive action, and got down to sea level. Then I opened everything out wide and got away without being hit. Payne got a rough do in the second attack. When I took violent evasive action he was thrown about and badly bruised and had to take a fortnight or so off to recover. Payne and I have made 75 trips to Sweden and back necessitating flying over enemy-occupied territory 150 times.

" It's a great comfort on trips like those to know you're piloting an aircraft that can show a clean pair of heels to anything the Germans can put in the air."

ALMOST CRIMINAL NEGLIGENCE

Another appalling instance of careless talk has come to light. In this case information concerning important secret development work appears to have been given out by women employees of ours and was publicly discussed. As so often happens the culprits could not be traced. The dreadful harm which such betrayal can do to the British effort to beat Germany and Japan must be so clear to even the simplest-minded adult that to be guilty of careless talk about de Havilland experimental work or de Havilland products really almost amounts to treason. Itcould have tragic consequences.

If the Germans had known the basic facts of the Mosquito during 1940 they would before now have produced a similar machine. The Mosquito is *just* the size and shape of aeroplane to be highly formidable. Its internal spaces are as ideal for bomb, cannon, gun and fuel-tank housing as its external form is for performance. A trifle bigger all round, a trifle less clean, and it would have been too slow and cumbersome against German fighters and flak. A trifle smaller and it would not have had the really useful bomb load and fuel-tank range. What priceless secrets we held

while we were designing it ! Only now is the enemy beginning to use an aeroplane anyway approaching the Mosquito's formula, and even that (the Me.410) is a compromise.

BUT IT AFFECTS US ALL

There is an interesting article in a recent Christian News letter discussing the high moral responsibility of people holding supervisory positions in industry at the present time. It refers to the war-time necessity for rapid expansion and the emergence of the trained organiser and leader as an element in industry. Managers, the article points out, are not primarily concerned with the financial side of affairs for nowadays they are a class of paid employee with special qualifications. Perhaps therefore it is to them that society must look to stop the depersonalization of man in industry which was a feature of the early years of mechanization.

John Ruskin once observed : " In our factories we fabricate everything except men," and some 80 years later Eric Gill was moved to add : " We may now go further ; we may say that in our factories we make all things for sale, and destroy the men and women who are to buy them."

If such a trend was inevitable then it can be corrected now. By acquiring a group consciousness of their mission in society as well as their technical and organisational efficiency, men and women in supervisory positions can wield the great power of mechanization in such a way as to restore the sense of human satisfaction in work. They can do much to enhance the Christian values relating to the human individual.

This is undeniable ; as soon as one becomes a chargehand, foreman or manager, one doubles or quadruples one's responsibilities, and all very honourable, too. But do not some of these writers underrate the value of more general and spontaneous moral sense in the rank and file? It is too easy to put all the responsibility on to the organiser. Would it not be more correct to say that, regardless of position, everybody has a high moral responsibility, to-day as ever?

SHORT PARAGRAPHS

The Chinese spirit : the German ambassador called upon General and Madame Chiang Kai Shek in the early days of the Japanese aggression and conveyed to them Japanese proposals for peace. After he had told them the terms Mme. Chiang handed him his bowl of tea and asked : " And how are your children ? "

* * *

There is something higher than intelligence which we might call intellect. An intelligent man may distort reason deliberately. An intellectual man would not lower himself to do so.

* * *

A Mosquito pilot walked in to lunch last week. He had been to Denmark and North Germany since breakfast.

* * *

Mr. G. K. Carlson, Chief Inspector, Aircraft Division (one of the 1920 founder-members of our company) is flying to Canada on a visit concerning Mosquito production there.

* * *

Talking of old-timers, the presentation of certificates and £20 cheques to those who have completed twenty years with the company during 1943 is to be held on Wednesday, December 1, at 18.00 at head office. The ten people are : Mr. E. Last, Mr. H. E. Dockerill, Mr. H. G. Cross, Mr. E. Harrison, Miss C. Dunman, Mr. A. Adams, Mr. W. F. G. Hill, Mr. R. A. Clegg, Mr. G. L. Rowley, Mr. S. Strong. More details of them later.

* * *

Newspapers often say that a Mosquito has flown from Britain to Russia and back in a day. Mosquitoes have *often* done so. A pilot who had himself done more than one such trip said he spent five hours on the ground in Russia on one occasion. A Mosquito has flown to Tunis and back by early evening, and another has done a day tour of Europe embracing practically all the main countries.

On Nov. 19, Dec. 3 and 17 the B.B.C. Home Service will put out three feature broadcasts about the aircraft industry, starting at 21.35 and lasting one hour. The first will deal with British aviation up to 1939, the second with the enormous developments since then, and the third with air transport in general and Britain's part in the future of aviation.

* * *

Articles and pictures concerning the Mosquito, D.H. propellers, etc., are likely to appear in November in *Illustrated London News* and *Picture Post*.

* * *

A Czech paratroop officer on leave travelled to the Scilly Isles by public airway.

"What kind of aircraft did you go in?" asked one of our directors, who met him afterwards.

"I do not know. It was an American plane."

"What make was it?"

"I do not know the names, but it was American because it was a transport plane."

"Was it a monoplane or a biplane?"

"It was a biplane. It had very pointed wings."

"Did it have radial engines or in-line engines?"

"It had in-line engines."

* * *

Aircraft Divn. Library, inaugurated in May, 1942, now has 3,000 members and expects shortly an expansion of premises. What are other Divisions doing about this side of life?

* * *

"Even I Can Understand—Nos. 1–10": The supply of this booklet is now exhausted except for a small number still available from the Aircraft Divn. Library.

Published for private circulation only. The contents are not to be communicated to anyone not in the employ of The de Havilland Aircraft Co., Ltd. Printed by Samson Clarks.

Private O. J. No. 53
Memorandum of information to all de Havilland personnel. 9/12/43

BEFORE THE CURTAIN ROSE

Below is a full account of one of the back-stage episodes of the Battle of Britain. It will interest everybody in our Company, for it is a story of the de Havilland Propeller Division. This statement was prepared at Air Ministry instruction and has never been released until to-day. A brief reference to it was made in the B.B.C. dramatic broadcast last Friday.

As long ago as 1936 de Havillands had both Spitfire and Hurricane pencilled into their programme for variable-pitch propellers, but in those days the accent was on lightness where fighters were concerned and as both types could leave the ground fairly well with fixed-pitch two-blade wooden propellers they were not instructed to provide v.p. propellers until much later—in fact, not until 1938, when pilots were beginning to say that they needed variable pitch for safety in night take-offs. The R.A.F. expansion was then going ahead urgently and two-pitch propellers were specified for single-engined fighters because quantity deliveries of these could be given more quickly than of the constant-speed type. By the time Paris fell de Havillands had delivered about 1,250 two-pitch propellers for Hurricane, 1,000 for Spitfire and 325 for Defiant. They were delivering constant-speed propellers then in quantity for Wellington Ic, Hampden, Beaufort, Beaufighter, Whirlwind, Stirling, Manchester, etc., but the single-engined fighters, the Blenheim and other types were still being retained as two-pitch installations.

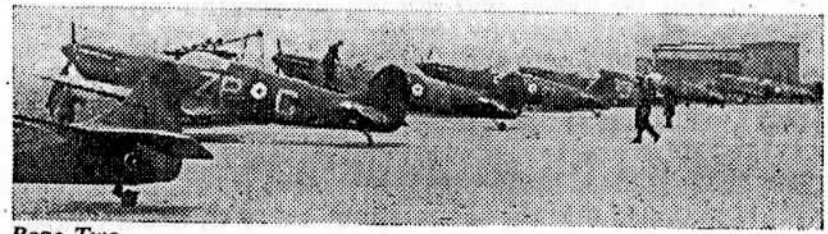
At the time of the Battle of France propeller engineers and test pilots used to hear at the fighter stations that the Me. 109's were a bit higher in ceiling than our fighters, though their manœuvrability high up was not so good as ours, and that they had an advantage in accelerating and power diving—our two-pitch fighters had to throttle back

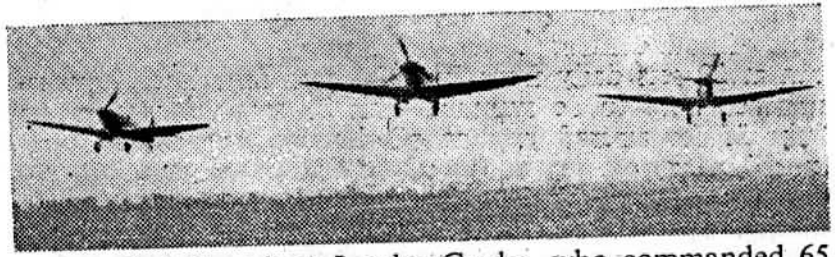
in the dive to avoid over-revving. It was also clear that constant-speed control would give us a much improved climb for intercepting. Changing from fine to coarse pitch with the two-pitch control, as set for Spitfire's rated altitude, was rather like changing from bottom to top gear in a small four-speed motor-car. In many talks with hard-worked pilots during Dunkirk week and thereabouts all agreed that constant-speeding would be a considerable help, especially as it did not mean new propellers, but only governor units, piping, etc.

On Sunday, June 9, when the Germans were pouring across the Marne, de Havilland's had a 'phone call from an engineer officer asking whether they could convert one Spitfire as a sample. They said they could, quite easily, and sent their test pilot with an engineer to explain that the work involved would not take many hours, but that if they were likely to be called upon to make conversions in quantity they would have to be given authority to divert materials and labour from the contracts upon which they were fully engaged.

They at once set about the parts and pipe lines for the trial conversion. These were ready in about four days, and half a dozen picked D.H. propeller installation engineers effected the conversion at an airfield during one night, while the Huns were rejoicing in Paris and Goering was re-grouping for the attack on England.

A report dated June 20, from the D.H. test pilot, Mr. E. Lane-Burslem, stated that he had flown the converted Spit





and so had Squadron Leader Cooke, who commanded 65 Squadron, also a number of his pilots. They estimated that there was more than 7,000 ft. of increase in ceiling, and the manœuvrability at height was much improved, not to mention the obvious advantages of reduced take-off run and increased rate of climb—in brief, the ability to use maximum engine efficiency at any altitude and in all flying conditions.

Enthusiastic for other squadrons as well as his own, and backed up by his engineer officer F/Lt. McGrath, S/Ldr. Cooke got in touch with the Technical authorities and interest spread rapidly. Among the experienced operational pilots who were first to appreciate the advantages was Wing Commdr. H. Broadhurst.

On Saturday, June 22, de Havillands were verbally instructed to convert in the field all Spitfires, Hurricanes and Defiants, with priority over other contracts, and the Spitfires had to be done first. S/Ldr. Cooke, in his constant-speed Spitfire, led his two-pitch squadron into battle and the practical advantage was immediately apparent. Unfortunately, on his second sortie he was killed.

Minutes of a meeting on June 22 with the Senior Technical Officer of Fighter Command relate that de Havillands would start the conversion at 12 Spitfire stations on Tuesday, June 25 (less than a week after the first test flight) and could provide 12 men capable of supervising a station apiece, and that the firm estimated that each squadron would take 10 days to convert, and that all Spitfire squadrons could be completed by July 20. The same minutes recorded that de

Havillands had put in hand the production of 500 conversion sets, without contract cover, and that these would be coming out at 20 sets daily from June 24, two days later. Supermarines were to be supplied with 20 sets per week from June 25 for aircraft coming off the production line; this would mean that two thirds of the Spitfire production from that day onward would be " constant-speed." After completing the squadrons the D.H. engineers were to modify any Spitfires in storage at Maintenance Units (the word " any " had a grim significance !).

A small quantity of constant-speed units produced for the French Government and useless to them after the collapse, formed the nucleus for the job that began on June 25, and bulk production duly followed without a break. The conversion called for this constant-speed unit, a small shaft drive to connect it to the engine, 4 external engine oil pipes, a complete cockpit control with conduit, and detail parts. The propellers did not have to be changed, having been designed for constant-speeding, but each had to be dismantled to move the index pins so as to give full pitch range and shift the range bodily several degrees towards the coarse limit. As Rolls-Royce could not, consistent with other heavy demands, produce the quill shafts for driving the c.s. units, or the engine oil pipes, the data were given to de Havillands and the facilities of the Gipsy engine factory were pressed into service to make over 1,000 sets of these parts. Everybody in the D.H. organisation who could contribute anything was transferred to this job. Several outside suppliers were involved, and one recalls how M.R.C., Ltd., the makers of the pilot's control, astonished at the demands made on them, co-operated magnificently. Many of the " inside " people did remarkable work, for instance, Mr. Ivor Jones, of de Havillands' Progress Department, who chased and controlled all the parts supplied.

Day and night air raids on England began about Monday, June 24. The next day 13 D.H. engineers set forth in cars

for twelve Spitfire stations. Each was provided with about six conversion sets to be going on with. Their names were : W. E. Crease ; J. B. Houston ; S. C. Bentley ; W. M. Bentley ; B. J. de Sibour ; A. Moser ; C. A. Luke ; A. Metz ; W. Hook ; T. Beavis ; W. Pickford ; S. J. Reed ; A. J. Tribell.

At each station the D.H. man on arrival asked for a picked crew of N.C.O's and fitters and converted the first aircraft himself, instructing them at the same time. The second aircraft was then converted by the R.A.F. crew with his help, and the third with his supervision only, after which, if all was going well, he would proceed to the next station. Youthful engineers like de Sibour found themselves directing senior flight sergeants and quite big squads of fitters. Mr. Lane-Burslem flight-tested the first machine and instructed the R.A.F. pilots in the constant-speed operation, and then flew on to the next station.

The working times of the D.H. engineers during the ensuing weeks averaged about 105 to 110 hours (15 to 16 hours a day), with instances of 130 and up to 150 hours (19 to 21½ hours out of the 24). At some squadrons as many as 4 and 5 Spits were converted and test-flown in a day.

There was much improvisation at the stations, home-made arbors were contrived for dismantling the propellers and off-set spanners were made to get at nuts without having to remove the Merlin Glycol header tanks.

Some of the squadrons which had borne the brunt at Dunkirk and were resting, in South Wales and elsewhere, flew their Spitfires across England in ones and twos to be converted, and some aircraft were flown for conversion to de Havillands' own doorstep.

The rush had its lighter moments. As all the initial production and conversion arrangements were made without contract cover of any kind de Havillands had the authorities on one side pressing almost impossible promises out of them, while other branches were cautioning them that their

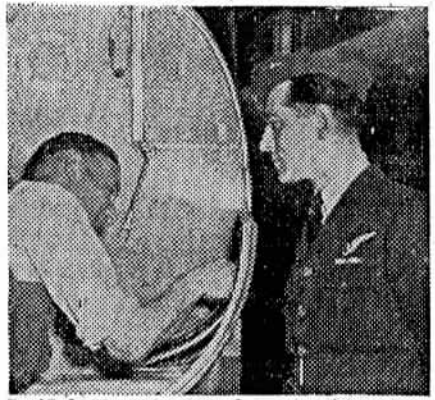
action was irregular. A contracts clerk said : ' We shall probably never get paid for this," and an engineer was heard to reply : " If it isn't done we may never live to be paid for anything." Even in March, 1943, the de Havilland Contracts Department were still being called upon for the routine evidence that certain aircraft had been converted.

An entry dated Friday, August 2, records that by then, 44 days after the test flight of the first converted Spitfire, the production of conversion sets for all existing Spitfires (more than 800 sets, fulfilling the schedule of 20 a day) was complete, and they were therefore busy producing for the Supermarine assembly line ; de Havillands then had 400 Hurricane conversion sets in hand and expected to convert a total of 700, after which constant-speed would be embodied in the new aircraft.

The worst of the rush was over, 6 days before the Luftwaffe's mass attacks began, and a chance diary entry records that the Company was already busy on another urgent job, of fitting propellers to 24 Hurricanes to be sent at once to the Middle East ! Another diary entry of that month which serves as a reminder of gloomy expectations records that de Havillands were doing 1,500 sets of bomb racks for Tiger Moths !

Those July raids had fortunately been scarcely more than skirmishes. If only the German High Command had realised ! The mass attacks on Channel ports and shipping which began the intended final assault upon Britain did not start until Thursday, August 8—but all our Spitfires had constant-speed by then. By August 16, 1,051 Spitfires and Hurricanes had been converted—an average of 20.2 aircraft per day over 52 days. In the 8 days August 8 to 15 the German losses averaged 81 aircraft daily—four times our own losses. One of the highest officers of Fighter Command remarked to a D.H. engineer that but for the conversion job the figures might have been reversed.

THE AIR IS OUR CONCERN



Sq./Ldr. Tate, in one of our fuselage shops

The narrator in this B.B.C. series of broadcasts is Reginald Tate, a Squadron Leader in the R.A.F. and a ground controller of Mosquito night - fighters. He recently visited some S.A.G. factories, and when talking to the workpeople in their canteens, described a typical turn of duty. In the Operations Room, standing by a large table on which the approach of enemy aircraft is plotted, the controller's aim is to direct hunting Mosquitoes on to these " scalded cat " raiders. He said one of the most pleasant things to hear is a pilot's blithe call after a successful encounter : " Have you got another customer ? "

The remaining episode of " The Air Is Our Concern " will be broadcast on Dec. 17.

NEW MOSQUITO VERSION: THE FIGHTER-BOMBER

Thousands working on Mosquito production know about the fighter-bomber, but to thousands of other O.J. readers it must be news.

It may now be known that besides the Mosquito bomber and the Mosquito fighter, which have been in action for nearly two years, there is a new mark of this aircraft, having the full fighter armament of four 20-mm. cannon and four .303-in. machine-guns, which also carries a thousand pounds weight of bombs. The speed is unaffected by these new internal modifications, which represent another stage in the logical development of this aircraft, like the use of wing-tip drop tanks for extra range.

The significance of the fighter-bomber version is obvious and its value has been proved during this year's growing offensive. Mosquito intruder squadrons, in their day and night work of smashing enemy installations such as power stations, and their attacks on shipping, locomotives, tanks and transport convoys, were previously relying upon the destructiveness of their cannon. Now they can do those bits of the fast bomber's task which conveniently come their way on many sorties, notably when lurking around enemy airfields while our heavy bombers are attacking industry.

Especially useful is the new bomb load to squadrons based far from home which must expect to be called upon, to some extent, as maids of all work. It comforts a crew on a bombing mission to know that it has the performance and armament for combat with fighters.

Versatility and quick adaptability are the keynote of these improvements. Besides the Mk. II Mosquito fighter, the Mk. IV bomber and photographic reconnaissance types there are now fighter-bombers, fast transports and special machines, all with a variety of equipment and including very-long-range versions and high-altitude types with two-stage superchargers. And the Mosquito is still the fastest aircraft in service in the world.

ADVICE FROM DR. THOMPSON

Because the germ of influenza has not yet been definitely identified, inoculation against it is not always successful.

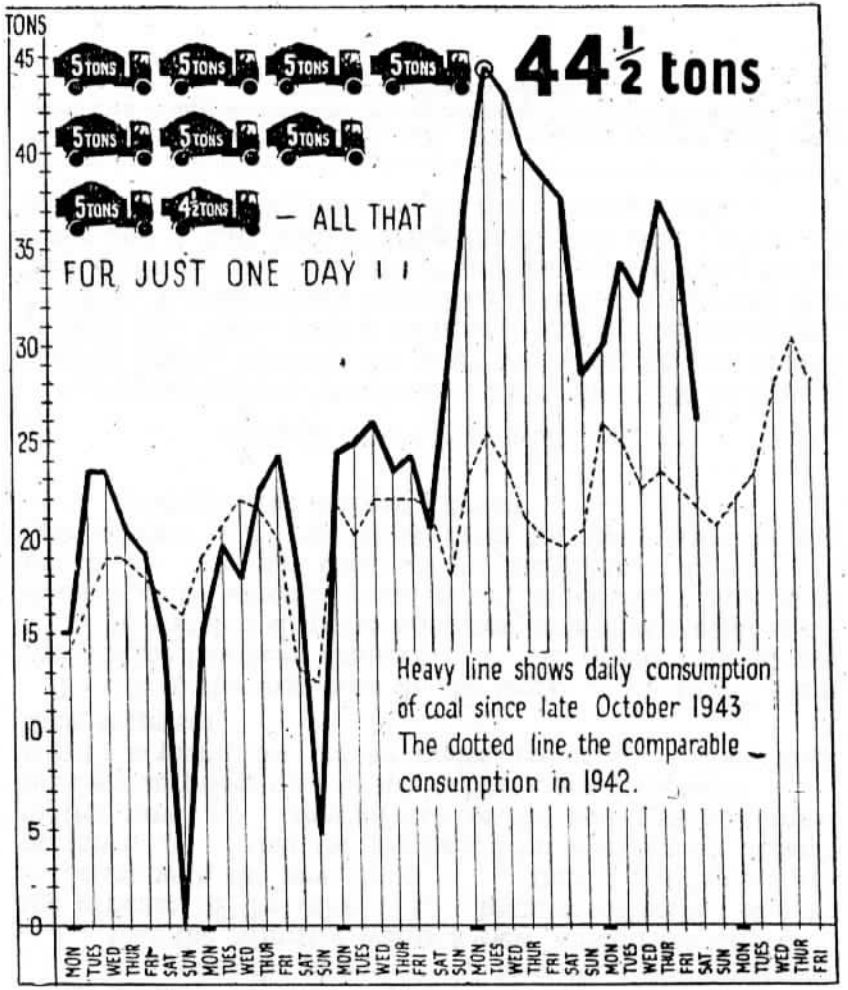
The best method to prevent infection is to raise the tone and resisting power of the body generally. Always take your full rations, including plenty of greenstuff both cooked and raw. Get your proper sleep and avoid places where large numbers of people collect, such as cinemas and public halls (just while the epidemic lasts—it's worth it). See that you have some exercise in the fresh air each day, and take the opportunity to walk to and from the station if time permits. Try to get adequate ventilation without draughts in your shops, offices and homes, and see that you are properly clad

for your work. If, however, you do get influenza or a severe cold, *stay at home*. Remain in bed until your temperature is normal. If you cannot get a doctor, stay in bed, take aspirins, and drink plenty of fluid to wash the poisons out. By coming to work with a severe cold you will probably give it to others in the bus, trains, shops and offices.

MOSQUITO : CRITERION FOR ECONOMY

The Ministry of Supply has prepared an exhibition to show industrial engineers up and down the country how materials and labour have been economised in numerous war industries, and how alternative materials have been adapted to save the rarer specifications. It occupies a considerable floor area, includes thousands of examples, and is divided up logically into iron and steel, non-ferrous metal, rubber, paper, textile and similar main categories.

The interesting feature from our point of view is that the Ministry of Supply has chosen the Mosquito aircraft to form the culminating section of the exhibition as the best example of all-round economy in man-hours and materials. With our explanatory notes the Ministry displays a Mosquito fuselage and half wing (rescued from the crash heap) and numerous smaller sections and components. The use of plywood bonded with plastic cement which is unaffected by moisture or micro-organisms has been pioneered by de Havillands—yet there is resistance to it in the building industry because of the old idea that plywood opens up in wet weather, whereas, of course, the substitution of urea formaldehyde for glue makes this impossible. The use of small pieces of wood cemented together so as to avoid having to employ the expensive " prime cuts," whilst also obtaining greater strength, is well brought out. The employment of high-strength castings and light alloy so as to avoid putting a further load on the forgings industry is shown by many specimens. The simplicity of structure throughout and of our system of butt-joined wing repairs is emphasised.

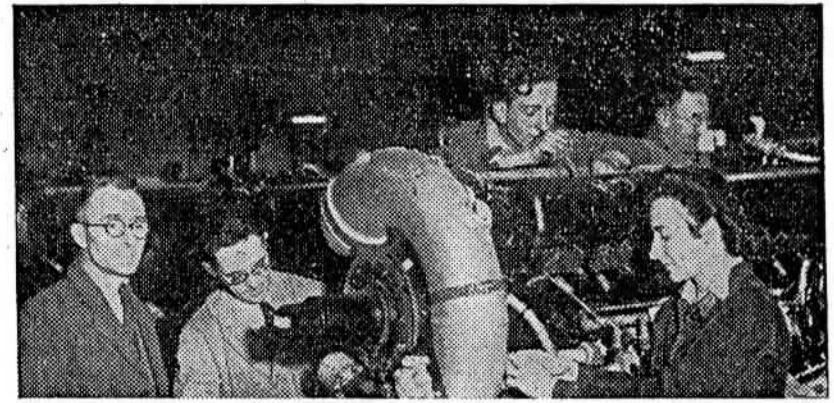


This graph plainly shows how consumption of fuel has increased at one of our main factories. The point is that the demand for coal increases as the country's war potential

expands, but the production of coal does not keep pace with extra requirements. Therefore it is of high importance that stringent economy should be practised. Don't grouse if the shops and offices are not so hot. Keep an eye on the big doors. Much heat can be frittered away by leaving them open. Remember that 10 degrees of heat can be lost in a few minutes and it takes 1½ tons of coal to raise the temperature 1 degree for 24 hours.

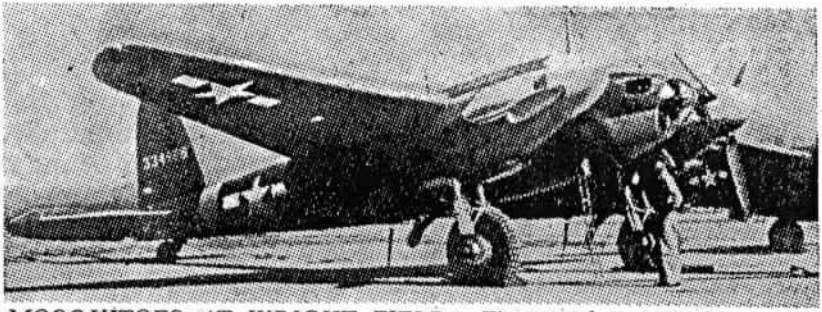
J.P.C. BALLOT

The Engine & Propeller Division elected members of the Joint Production Committee for the third time on Nov. 25 last. The elected representatives were : R. Bass—engine machine shop ; W. Bowers—engine inspection ; G. McKay —tool room ; W. J. Rumble and J. Walters—propeller machine shop ; H. Hart—propeller inspection ; E. C. Welsh—propeller assembly ; T. Bainbridge—propeller blade shop ; W. Wright—plant dept.

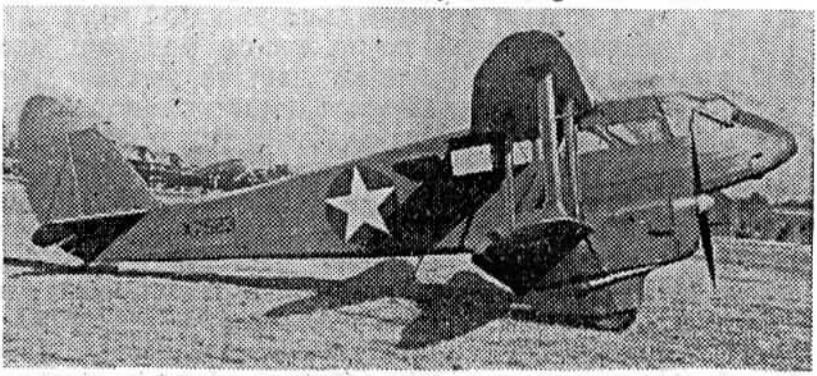


The winners of the Aircraft Division Challenge Shield for October were the dispersed engine installation shop (624 *points*) *and the runners-up were dispersed electricians No.* 1 *shop* (606 *points*). (*l. to r.*) *Mr. F. Franks* (*foreman*), *Messrs. F. Logan, L. Culham, A. Lewis* and *Miss R. Downing.*

STARS AS WELL AS ROUNDELS



MOSQUITOES AT WRIGHT FIELD : First rough copy in this country of a photograph showing one of the Canadian-built Mosquito bombers at the American Army aircraft testing station. The de Havilland plant in Toronto has long been delivering Mosquitoes on that side as well as despatching the bomber version by air to England.



EVERYBODY'S FRIEND : The United States Army Air Force have been using Dominies for quite a while now for the humbler transport jobs, and appreciate their Moth-like handling, reliability and economy. Half a ton of payload at 132 m.p.h. at 7 miles per gallon with the simplicity of a Morris truck ; plain wood construction, fixed undercarriage, fixed-pitch propeller on ungeared shaft, no supercharger, engine that does 750 hours between overhauls, as simple as a car engine and familiar to ground engineers on every continent.

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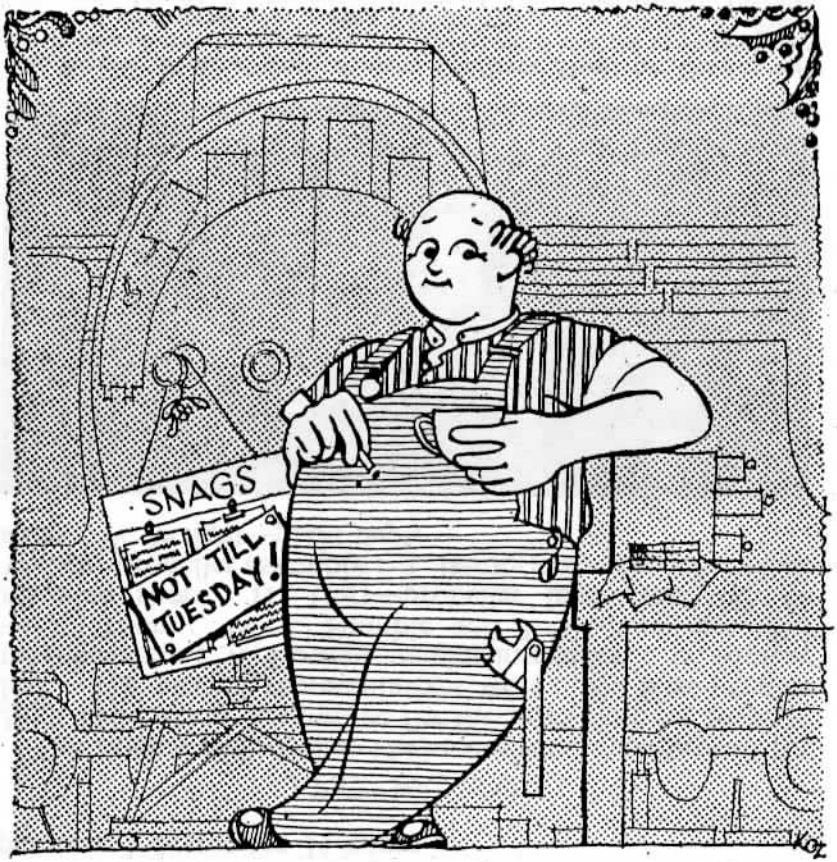


Old Joe, backbone of the works, knocks off for his fifth war Christmas: "Well, I have been with the firm since before most of the R.A.F. boys were born. We have certainly given them something this year. Let's hope that next year's ration can be mostly for the Pacific. A merry Christmas to you all."

THE DE HAVILLAND WORLD EXCHANGES GREETINGS

The pre-war custom of the de Havilland companies and agents in the Empire and elsewhere to exchange Christmas messages is reviving and we give below the text of cables exchanged in the past few days with our overseas companies, also a note on the activities of each.

FROM DE HAVILLAND, ENGLAND

(Aircraft, Engine and Propeller Divisions, and shadow factories, the de Havilland Forge, the Repair and Overhaul Groups, the Technical School and the Flying School, the associated enterprises.)

Greetings to de Havillands Australia, Canada, India, Africa, New Zealand, from all of us here in the old home of our big and scattered family STOP A merry Christmas to you, good luck in the New Year, and may we soon enjoy some of those happy reunions we have long been looking forward to STOP All goes well here STOP Britain is an armoured workshop and fortress and the de Havilland company counts its home establishments in scores and its workpeople in tens of thousands STOP In aircraft, engines and propellers we are flat out on both production and development, and we recognise that quite a bit of the responsibility for keeping the technical lead over the enemy rests with us ; also that the war isn't won yet and that the Pacific campaign calls for special aeronautical endeavour STOP We are proud to think that we constitute only a fraction of the far spread and hard working de Havilland family and that there is a unity of purpose and ideals among us all STOP Our mood today is characterised in the one word Mosquito STOP We must concentrate upon the attack today and by so doing we shall make all the better job of the tasks that await us in the reconstruction era STOP Certainly de Havilland will serve the trade routes of the future STOP Best wishes to you all HAVILLAND

FROM DE HAVILLAND, SYDNEY

(Established 1927. Busy building D.H. aircraft and propellers, and developing chain of sub-contractors ; organised the manufacture of the Gipsy Major engine in Melbourne in 1940, has important repair depots behind the Pacific war front.)

The Australian Company send all best wishes for Christmas to the members of our parent company and hope that the attack on the air routes of tomorrow will not be long delayed. DE HAVILLAND, AUSTRALIA.

FROM DE HAVILLAND, TORONTO

(Established 1928. Now concentrating on manufacture of the Mosquito. Big factory and depots, large organisation of subcontractors. Active servicing group.)

Christmas greetings to de Havilland Hatfield from your co-workers in the land of the maple leaf at de Havilland in Canada STOP The Dominion Government classes Mosquito production as one of the most important contributions to Allied war effort STOP Canadians are proud to build the Mosquito, the most sensational aircraft in operation anywhere and a plane that is adding prestige daily to the de Havilland name throughout the world STOP Today we press the attack, tomorrow de Havilland will build for the trade routes of the future STOP With best wishes for victory in the New Year. DE HAVILLAND, CANADA.

FROM DE HAVILLAND, KARACHI

(Established 1929. Small factory making wood and metal components for D.H. and other aircraft. Considerable overhaul and repair service on aircraft and engines.)

Wishing you a very happy Christmas in the fervent hope that victory be attained next year.

FROM ALL DE HAVILLAND PERSONNEL, INDIA.

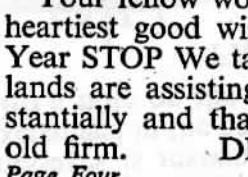
FROM DE HAVILLAND, JOHANNESBURG

(South African Company formed 1930, mainly as sales and servicing organisation and flying school. Rhodesian Company formed 1935 with similar activities. Both absorbed into governmental projects for war period.)

On behalf of all members of your South African and Rhodesian Companies today scattered far afield I as Chairman send Christmas greetings to one and all connected with our great parent company STOP We feel and hope that the New Year will enable us all who are the offspring of a company of world-wide reputation to unite and go forward with her as one determined to surmount the difficulties which we know lie ahead in the great post-war development STOP When the Union of South Africa came about it gave us a motto "Eendrag Maak Mag" (Union Makes Strength) STOP May I suggest we adopt it STOP In war time you gave the world the Mosquito; we know that in peacetime you will supplant it and lead the world.

GORDON DOUGLAS.

FROM DE HAVILLAND, WELLINGTON



(Established 1939. Building Tiger Moths for the Training Scheme. Making components for Airspeed Oxford, etc. Considerable overhaul and servicing organisation.)

Your fellow workers down under in N.Z. send you their heartiest good wishes for the festive season and the New Year STOP We take pride in the knowledge that de Havillands are assisting the United Nations' war effort so substantially and that we are playing our part alongside the old firm. DE HAVILLAND, NEW ZEALAND.

THE ARISTOCRACY OF SERVICE

Said Edmund Burke in the 18th century: "There never was a bad man that had ability for good service."

On December 1 at head office in the presence of those who have served this company for over twenty years, the nine men and one woman who complete their twentieth year in 1943 were received into the aristocracy of the Over-Twenty Club, and were given each a cheque for £20 and a fine Mosquito picture autographed by all the six "over-twenty" directors.

Details of these ten 1923 veterans are as follows:—

Mr. A. Adams, Assistant Chief Inspector, Aircraft Divn., has spent his whole career in the inspection department and is now second-in-charge to Mr. Carlson. He served in the Navy, 1911–18, and was in the R.A.F. reserve 1918/1921.

Mr. R. A. Clegg, Sub Contracts Dept., worked in wood detail and woodmill, with a short while on inspection, became a foreman in 1935.

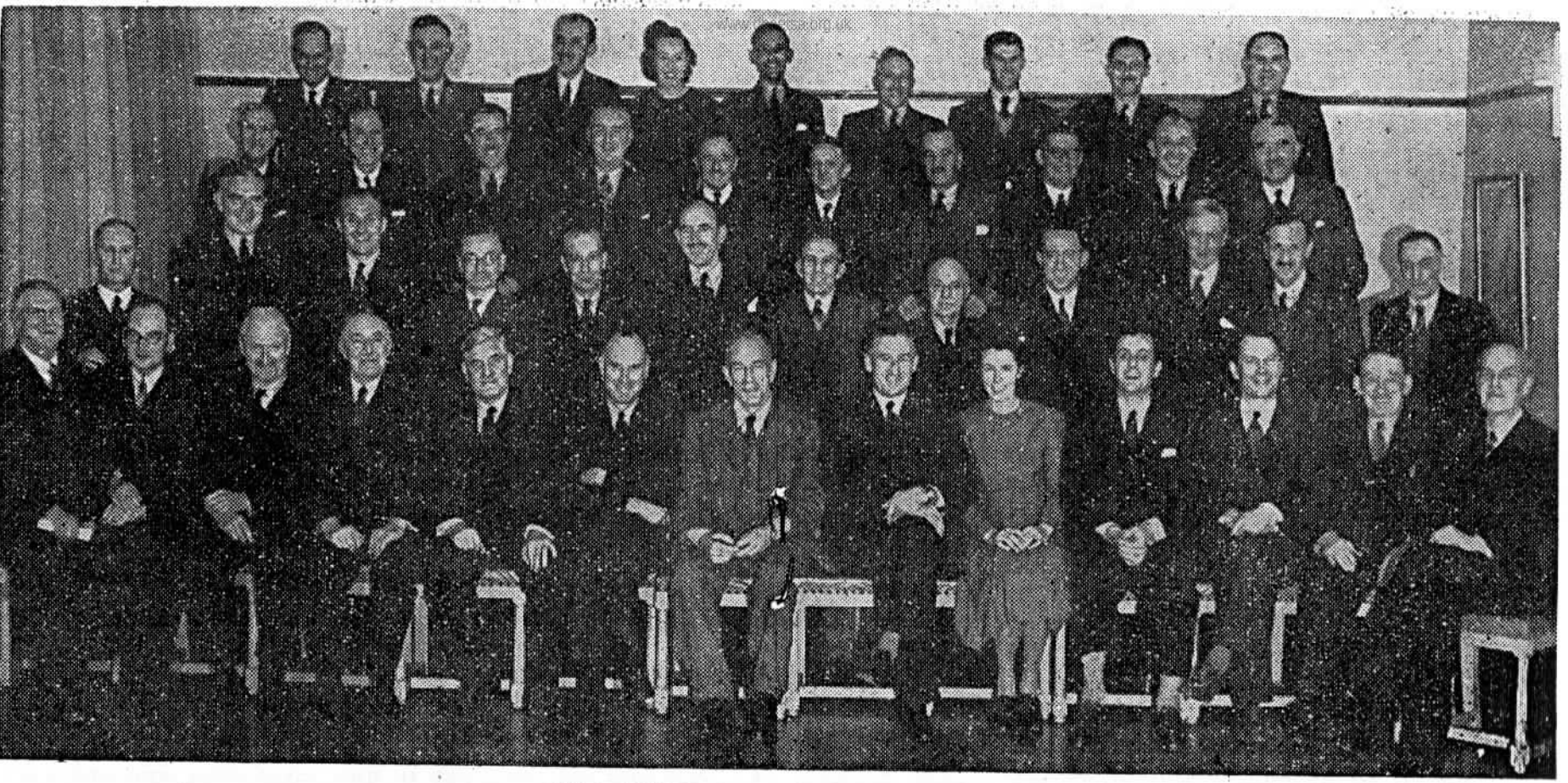
Mr. H. G. Cross, Cowling Section Supervisor, was apprenticed in sheet metal at Airco in the 1914–18 war, and has kept in this line, becoming supervisor in Feb., 1939.

Mr. H. E. Dockerill, Statistics Dept., started as a material record clerk, helped with our flying-school and aircraft-hire service records, worked in Wages and Cost Offices till 1937, then controlled a section of the Time Clerks Dept. for 5 years.

Miss Constance Dunman, Production Control Clerk, Aircraft Divn., took the place of her sister Miss J. E. Dunman when the latter left Mr. Brant's office in 1923, to which she returned in 1929. She changed to Production Control in 1927.

Mr. E. Harrison, Saw-mill Setter-out, was in wood detail 1923–29 and worked on the D.H. Moth in the early stages. He was one of the D.H. Sick Club founders.

Mr. W. F. G. Hill, Chief Buyer, Aircraft Divn., was at Airco after being invalided out of the forces in 1916, and joined us under Mr. King in the Buying Office (as No. 2 in



THE FOUNDATIONS LOOK SOUND !

1923 members, left to right : *A. Adams, S. Strong, H. G. Cross, Miss C. Dunman, W. F. G. Hill, E. Harrison, G. L. Rowley, R. A. Clegg, H. E. Dockerill (absent : E. Last).*

1922 members : *J. P. Cook, E. A. Middleditch, E. H. Livett, J. G. Green, R. Barnes, S. Oaten, E. W. Knightley, A. A. Raw, W. E. Butler, T. J. Clark (absent : H. Picken).*

1921 members : *C. S. Erlam, J. W. Smallwood, T. G. Seward, J. J. Jennett, J. W. Dale, C. G. Long, R. Hyder, H. Taylor, S. T. Weddon, E. T. Marriott, C. R. Stokes, J. Webb (absent : A. S. Butler, P. A. Roedling, W. C. Lamb).*

1920 members : *T. Sayers, S. T. Webb, F. T. Hearle, A. H. Morse, F. Cole, G. de Havilland, C. C. Walker A. J. Brant, Miss J. Dunman, R. Hutchinson, F. E. N. St. Barbe, J. A. Speller, H. Fidler (absent : W. E. Nixon, G. K. Carlson).*

a department of two), taking charge in 1926 of what has since grown to a big organisation.

Mr. E. Last, Catering Control Clerk, was time-keeper at our flying school for 19 years, acting as first-aid attendant as well in the early days. The school moved and he went into the catering in March, 1943. (He was sick when the December photograph was taken).

Mr. G. L. Rowley, Centre-lathe Turner, Engine Divn., has been on lathes all his time, worked on early Gipsies, has taken only a week of sick leave in 20 years. As methodical cutting a 6-mm. dowel as boring a con rod. Mrs. Rowley is a part-time war-worker with us and their two sons and daughter were both in the company for a while.

Mr. S. Strong has been driving the firm's cars surely and swiftly for twenty years. Engaged as "motor car driver," he was reclassified "chauffeur" in Nov., 1942. Cycled between Edgware and Hatfield daily for 7 years.

Our picture shows the combined party of the 51 over-twenties, less seven who could not attend. Their mood is a mixture of cameraderie, pride, humour, war-news headlines and Mosquito magnificence. Aviation has been a hard but lovable master, demanding great endeavour always gladly given, never suffering its servants to grow old before their time.

"Hands up those who were at Airco in the last war," Mr. Hearle said, and 30 youngsters of various ages shot them up. "The D.H. 3, 4, 9 and 10 did a lot towards winning that war," he went on, "and I don't think we need be ashamed of what we are doing in this one." Speaking to the over-twenties as a whole, he said: "Your efforts laid the foundation of this great concern." Messrs. Brant, Bill Adams and Tommy Clark had some very apt things to say, there was a mighty revival of old memories and this fourth annual gathering was an altogether happy affair, the only regret being that Mr. Butler and Mr. Nixon and five others could not attend.

AVERAGING THE STRAIN

The rearrangement of working hours for the Engine & Propeller group of factories to a 55-hour week will give employees a Saturday afternoon and Sunday rest regularly. In the past they had a 7-day week (Sunday to Saturday inclusive) alternating with a 5-day week (Monday to Friday inclusive). Over a period of 14 days they had two rest days, but in one week the dayshift hours numbered 66 followed the next week by 50½. There have been suggestions that the proposal is intended to reduce the working hours; but the *average* attendance by full-time productive workers in the group has been below 55 hours which is the basis now aimed at.

In a recent speech the Minister of Aircraft Production stressed that the payment of double-time was meant to prevent Sunday work, not to encourage it. A Parliamentary Committee and H.M. Inspectors of Factories have all urged upon managements the need to eliminate Sunday work. Statistics in a very large number of factories indicate that the elimination of Sunday work and the provision of a regular and longer weekend have resulted in increased output and higher bonus earnings. The advantages gained are pretty solid: everybody will get Saturday afternoons for shopping; health will improve by more regular rests; and it can be conclusively stated that there will be a marked saving of fuel, which is the equivalent of an increase in its production.

A BIG SAVING

On the best authority we learn that more than one quarter of all aluminium used for aircraft comes from scrap. This is a tribute to the care taken in factories to separate aluminium scrap from other metals, as well as its proper segregation into its own alloy group.

WHAT MAKES FOREMEN INTO PHILOSOPHERS?

How do foremen pass their time? What does the works superintendent do? He doesn't make aeroplanes or parts. He doesn't lay bricks for new factory walls. Do you ever see him mixing concrete for bedding down drophammers?

Does he give a hand to load up a lorry? Does he ever file or weld or wire up switchgear or thump cowlings? No. He has practically nothing to do himself . . . only to order others to do things. . . . "Bring me the list" . . . "Keep six men back" . . . "Take the specimen to my office" . . . do this, fetch that. The executive has hardly anything to do . . . that is, except to think out what is the best thing to do, without knowing quite what the circumstances will be when it is done . . . to decide the policy without control of all the factors, and be responsible for a successful issue nevertheless.

To tell somebody to carry out his decision . . . to hear why it is impossible . . . to explain why it is not impossible . . . to show how it should be done . . . to hear that there is not enough skilled staff to do it . . . to investigate other demands for the staff available . . . to weigh up their relative importance and be responsible for his decision . . . to hear why it should be done by a different method . . . to lay down the method . . . to

estimate a date for completion . . . to make a written promise of that date to some other department . . . to make other and costly plans all fitting in with that date . . . to preside at the attendance committee meeting and weigh up whether anyone is swinging the lead.

To chase the people doing the job . . . to hear sound and valid reasons why a delay is unavoidable . . . to worry out how it can be prevented . . . to try three or four alternatives, all without avail . . . to think on it in the small hours . . . to contemplate the effect of the delay over early-morning tea . . . to inspect the first-aid department.

To think out a fifth alternative . . . to put great constructive effort into it . . . to find that it depends on something that is in doubt for a few days . . . to wonder whether he dare wait those few days—or seek a sixth alternative . . . to think up and prepare a sixth alternative as a standby . . . to hope and pray . . . to be cheerful and carefree with everybody . . . to listen to a complaint about a draught . . . to explain that there is a department to stop draughts . . . to phone up that department . . . to chase the fifth alternative to a successful issue . . . to inspire those on the main job with a feeling that it will be all right now.

To come in during the night to make sure . . . to change a wheel in the rain on the way home . . . to explain to a policeman at 2 a.m. that the journey was necessary . . . to produce identity card, driving licence, insurance certificate.

To attend the J.P.C. meeting . . . to settle several bonus-time queries . . . to discuss fuel economy measures . . . to ask the A.R.P. officer about shelter inspection . . . to give a casting vote about the new firemen's cap-badge.

To realise that a man is twice as efficient as somebody over him but that the senior man is doing his best . . .

to present a wedding gift to a typist and make a speech amid giggles . . .

To rush back to the men on the job of the moment . . . to find that something has been changed because it seemed better . . . to change it back again . . . to get the whole thing finished satisfactorily . . . to have a cup of tea . . . to answer the phone . . . to write down a message . . . that the Ministry wants a new version developed at the expense of the other . . . because of recent R.A.F. successes with the new thing . . . that it is of great importance . . . that the job he's been working on doesn't matter now . . . that of course the war situation must produce surprises on the production front sometimes . . . it isn't a picnic for the air crews, either . . . they have their surprises.

To call in the men who do the work . . . to tell them the scheme has been changed . . . to observe the gloom . . . to watch it disperse when someone says that after all if the R.A.F. weren't doing so well it wouldn't have happened . . . to put them all on the right road with the new scheme . . . to thank them for their co-operation . . . to inspect the canteen kitchen . . .

HOME ON ONE ENGINE

A photographic reconnaissance Mosquito—LR. 412—was deep in enemy territory the other day when its port engine packed up. There were a number of enemy fighters about, but F/O. T. Clutterbuck manœuvred the aircraft so well that they could not gain the advantage. He evaded them for an hour and a half until nearing the British coast, when an escort of R.A.F. fighters turned the Germans back.

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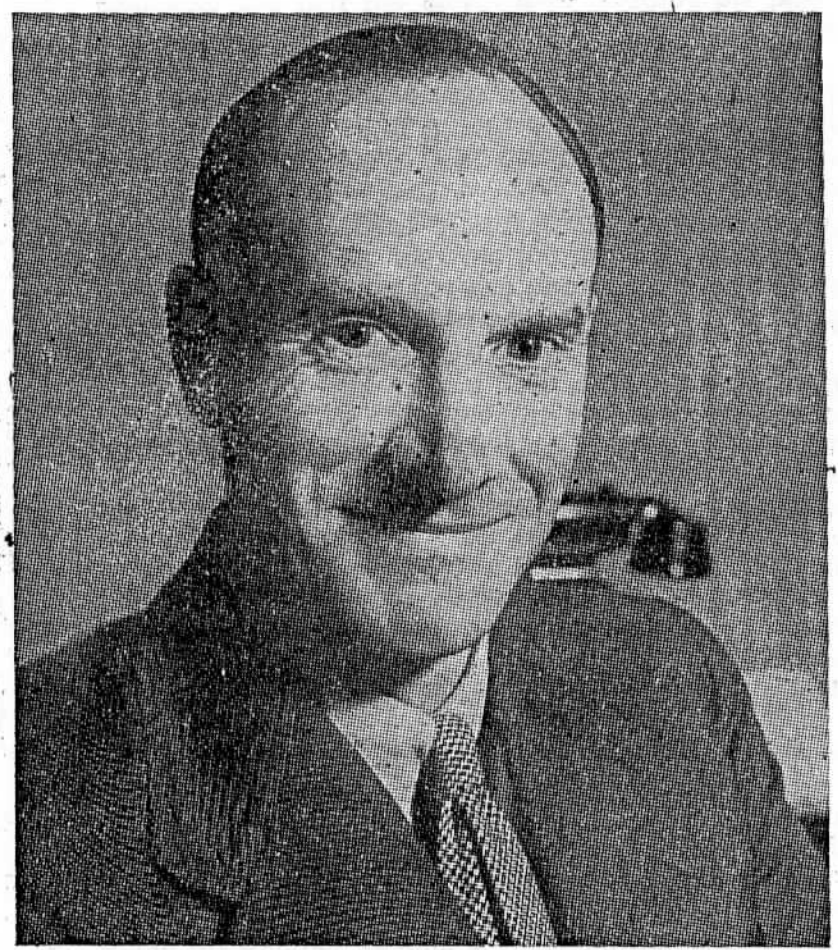


Sir Geoffrey de Havilland, founder of our company.

A HAPPY NEW YEAR HONOUR

A knighthood has been conferred upon Captain de Havilland. Letters and messages from near and far since the New Year Honours list appeared show that this recognition has given much pleasure throughout British aviation and, of course, especial gratification within our own organisation and among our older members who know how well it has been earned.

For his part, Sir Geoffrey insists that this is an honour paid to the company as a whole in the customary British manner, and he has issued the following message (by personal broadcast where practicable) to every one of us :—

"I wish to say a few words to you all concerning this honour that has been conferred upon me. Really it is an honour to the firm as a whole and is the traditional British way of symbolising the country's recognition of work done. Now every member of this firm—and especially those who have been with us a long time—has contributed in one way or another to the build-up of our achievements which have now been recognised in this way—and they are achievements of which we can all be proud.

"This company was founded in 1920 and very early in our history we turned our attention to civil aviation, in which field we have had consistent success. At the start of this war we had not built a military machine for nearly twenty years, but when it became essential to do so our people showed that they were able to design and produce, in record time, a military aeroplane of exceptional quality ; a machine which has won very great success. And our achievements in engine and propeller production have been equally good. Nearly all the pilots in the Royal Air Force have learnt to fly on our Tiger Moths with Gipsy engines, and a large proportion of all Royal Air Force aircraft are fitted with our propellers.

"All these successes show that there has been good co-operation between departments, with keenness and enthusiasm to do fine work. Let me congratulate you all on the good work you have done, and let me repeat, I would like you to feel, as I do, that this honour is a recognition of the work of every one of you.

"I wish you all a happy New Year and would like to take this opportunity to thank all those who have sent me kind messages."

Sir Geoffrey's reference to the build-up of our achievements may be taken as emphasising the fact that honours of this kind are not as a rule given in recognition of a single effort or success and that in the case of de Havilland the work done and the contribution made to British aviation ever since this company was formed in 1920 have doubtless been taken into consideration, culminating as they do in the success of the Mosquito, the fine war-time service of Gipsy engines and de Havilland propellers, our repair and overhaul organisations, our flying schools and technical education, and our establishments overseas.

In point of fact the recognition goes farther back than the birth of our company for it takes into account Captain de Havilland's services in the 1914 war—his designing of the famous D.H.4 (like the Mosquito a bomber with fighter speed) and the D.H.9 and 9a and the twin-engined D.H.10. And those in turn owe their success to his earlier designs, not only the D.H.1, 2 and 3 which date from his joining the Aircraft Manufacturing Co. at Hendon in 1914, but still farther back to the B.E.2 which he designed at the Government Balloon Factory, Farnborough.

And so in ultimate retrospect we recall a day in 1908 when plain Mr. de Havilland, after nearly eight years of engineering apprenticeship and drawing office training, resigned from a good job with the Motor Omnibus Co. at Walthamstow (later the L.G.O.C., which became the London Passenger Transport Board) because of an overwhelming desire to fly. He knew he would have to design a suitable engine first. In the house where he worked on the drawings

he got to know a young man named Frank Hearle and they joined forces in the quest of heavier-than-air flight.

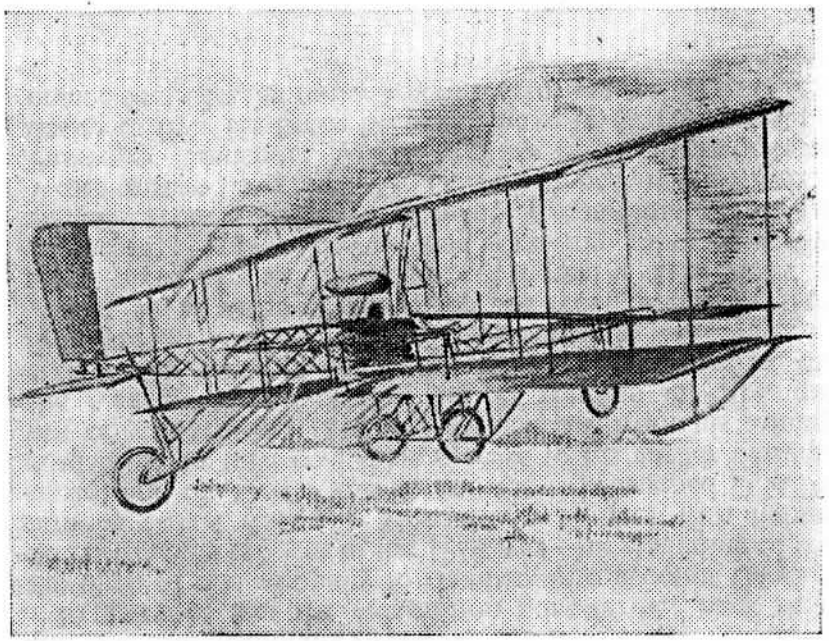
So the romantic story unfolds. The first machine, a biplane with two adjustable-pitch pusher propellers driven through bevel gearing, crashed on its first flight. They learned much from it, built a more orthodox single-propeller biplane around the same engine, and in this de Havilland taught himself to fly while Hearle lay on the grass to see whether, and when, the wheels really left the ground. Technically they were making good progress, paving the way to the Mosquito, but financially things were not so good; when the little money was nearly all gone and it looked like a return to motor-car engineering they both got jobs at the Government Balloon Factory at Farnborough, who actually bought the aeroplane as well! That was in 1910.

The rest has been told many times and will be told ever again. But for this enthusiastic pioneering by the few early British aviators, Germany would almost certainly have beaten us in 1918. But for the young industry's persevering tenacity through the decades of a sincere British policy of disarmament, which restricted air development, we should have been smashed in the sky in 1940, and crushed to slavery.

It is in the broad and long views of aviation's history—there are only a bare forty years of it—that we must appraise the worth and dignity of an honour such as the King has been pleased to confer on the founder of our company. Sir Geoffrey urges us to feel, as he feels, that this honour is a recognition of the work of every member of de Havillands. We know to what extent we have been aided in such work by his initiative, research and leadership.

DE HAVILLAND HISTORY

On page 16 is a three-view drawing of the first de Havilland aeroplane, referred to earlier in this bulletin. This is the machine which Sir Geoffrey started to design in 1908, beginning with the engine. This had four water-cooled cylinders of 4½ in. bore, 4¾ in. stroke, in horizontally opposed



pairs, gave 40 to 45 b.h.p. at 1,500 r.p.m., weighed 250 lb., or 5½ lb. per h.p. It drove through bevel gearing two pusher propellers of his design, of which, as *Flight* said, "the aluminium blades are adjustable as to pitch, and as to twist." The Havilland No. 1 had a front "mono-elevator," a rear tailplane and rudder, and "hinged wing-tips" and was "supported on three wheels."

Mr. Hearle helped "de H" to build the machine in a shed near Newbury. On its first hop it came to grief and "was, for all practical purposes, virtually annihilated by the fall." Luckily the pilot was not hurt, neither was his ardour dampened, and he and Mr. Hearle set about at once busily constructing the improved and successful "Havilland No. 2" in the light of the knowledge gained.

MINISTER'S NEW YEAR MESSAGE TO THE INDUSTRY

"During the past year we have, despite many difficulties, achieved a very marked increase in the strength of the R.A.F. and the Fleet Air Arm. This success is due to the untiring efforts of the workers and managements in a very large number of factories, and I am most grateful to them for all that they have done.

"The year 1944 is going to see the hardest and most intense fighting of the war. We on the factory front must do our very utmost to see that our fighting men have all the machines and equipment that they need. We must maintain the high quality which has been such an outstanding contribution by the workers, technicians and managements to the success of our war effort and, wherever possible, we must increase the output of operational types of aircraft.

"I thank you for all the contribution you have made to our victorious offensive against the enemy in 1943 and wish you the best of luck and the highest production figures for 1944."

R. STAFFORD CRIPPS.

THE D.H. AIRCRAFT REPAIR GROUP

Of all the aircraft going into R.A.F. service day by day at the present time no less than 40 per cent. are reconditioned aircraft drawn from the repair organisation. Sir Stafford Cripps surprised workers with this information when he and Lady Cripps visited the de Havilland Aircraft Repair Group in Oxfordshire recently. Listeners said that they would have put repair output at about 20 per cent.—say, a quarter of the output of new aircraft, whereas in fact it is two-thirds.

Sir Stafford also surprised many by saying that the British

aircraft industry has before it the most difficult year since war began. This is because we have to maintain—and in some instances increase—our enormous output of combat aircraft types while the industry must also in 1944 yield up a very considerable volume of labour to enter the fighting forces.

With increasing air offensive the arisings of damaged aircraft will, of course, be bigger. Repair and overhaul becomes ever more important and units which are not busy now may be overflowing with work shortly.

Sir Stafford and Lady Cripps have visited our Aircraft, Propeller and Engine new-production factories on several occasions but this was their first visit to the airframe group which we have operated in Oxfordshire since the month after was war declared, and this is the first occasion when we are permitted to disclose a few details of the work this group is doing.

We were asked by the Air Ministry in September, 1939, to remove our department for the overhauling of de Havilland aircraft types to a base towards the west of England, which it was left to us to find and take over. Mr. Thom found the base and got it going. Dragon Rapides, four-engined D.H.86s, Tiger Moths, Queen Bees and miscellaneous D.H. types were repaired there at first. Hurricane repairs, taken on by our main Aircraft Division soon after Dunkirk, were transferred there later. Soon Mr. Thom was appointed General Manager of our Second Aircraft Group and Mr. P. E. Gordon-Marshall took over the new repair base. Later, Mr. L. A. Ward went from head office to assist him as Business Manager; he has put in some very hard work.

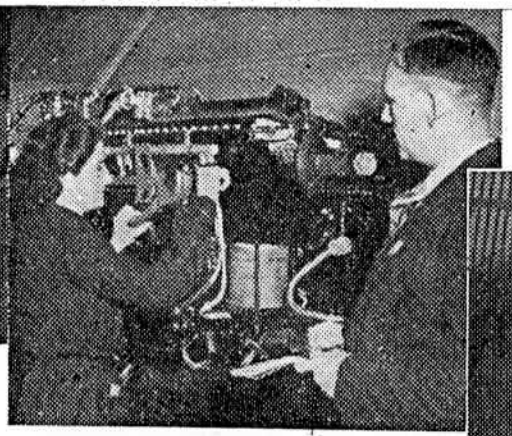
The organisation grew and expansion was conducted on dispersal lines, some quaint premises being turned over to "front-line" functions which seemed strangely incongruous in sleepy country settings. Village girls quickly turned their nimble hands and minds to aircraft work. Obsolete aircraft

THE D.H. AIRCRAFT REPAIR GROUP

On the Spitfire repair line : Sir Stafford Cripps (centre) with, l. to r., Mr. Trubshaw, M.A.P., Regional Controller ; Mr. L. A.. Ward, Business Manager ; Mr. P. E. Gordon-Marshall, General Manager ; Mr. K. C. Brown, Works Superintendent.

(Right) Mr. Marshall and Henry.

(Below) The Hurricane Section at a busy time.



Miss D. Bailey, in green-grocery pre-war, now installs Gipsy engines unaided. On right, Mr. G. W. Baker, Assistant Works Superintendent.

(Right) Stressed-skin and component repairs. Sir Stafford talking to Mrs. M. K. Campbell

Repair group production meeting in progress. L. to r, Mr Fred Wallace, Spares Controller ; Mr. A. Taylor, i/c Planning and Internal Progress ; Mr. K. C. Brown, Works Superintendent ; Mr. L. A. Ward, Business Manager ; Mr. W. Pickett, Stores Controller ; Mr. F. Woodruff, Outside Progress ; Mr. F. A. Roberts, Chief Buyer.

parts which had been kept in trickle production before the war had to be ruthlessly dropped by our parent factories when the Mosquito began to absorb all their effort. The repair group then boldly took on difficult jobs. The need to keep old Leopard Moths, Puss Moths, Hornet Moths, Dragonflies and D.H.86s working for the want of replacement aircraft from current production put a strain on the shops, for not only jigs but also drawings were often lacking. The works superintendent, Mr. Ken Brown, got the name for never turning down a task, even to the tune of being ready to take over the manufacture of Queen Bees and Dominies—but the Civilian Repair Organisation naturally could not give over a repair group to the building of new aeroplanes. Ken Brown's work won him a B.E.M., which was awarded in the last Birthday Honours.

The villages were not able to supply all the labour needed by the growing establishment so trainees were drafted in from various parts of the country, many of them from Government training centres or de Havilland trainee courses. Wonders have been done by these people and by members of the supervision and skilled workers who patiently brought them on. The girl who from greengrocery became capable of completely installing Gipsy Majors and Sixes to drawing is a typical example. Subcontracting capacity had to be sought out and nursed up to take on steady-flow items, and would then be pressed to help with the awkward " one-off " jobs. Working parties had to be sent out to repair aircraft in fields. Chasers scoured the R.A.F. stores of the country to unearth odd spare parts and resolve " inabilities." Headaches there were in plenty for a couple of years.

At the height of the effort the group was asked to take on Spitfire repairs, and did so willingly and with its eyes open. This became one of the biggest departments, alongside the Hurricanes.

Fortunately a firmer hand could be permitted with the " orphan " D.H. types as more new British and American

communications aircraft became available, but there has always been a steady flow of Dominies/Rapides and the floors are never entirely free from difficult obsolete machines. Flamingo overhauls have been tackled. Dominies are sometimes finished off as civil passenger aircraft for overseas. Urgent " strips " of operational aircraft for shipping to our allies have been taken on at an hour's notice, and one spares pack-up for overseas made the place hum through an Easter week-end.

Mosquito repairs were never part of the group's responsibilities, being undertaken by a large separate organisation of ours under Mr. Brant, our Service Manager (Aircraft and Engine Division). It will be recalled that another de Havilland organisation overhauls Rolls-Royce Merlin engines—in fact, we are one of the biggest Merlin rebuilders in the country.

The group presents a more mature and sophisticated air nowadays. Its orderly departmental layout, its canteen and kitchen, Mrs. Bridgeman's spotless first-aid station, even the crop rotation of its vegetable gardens, seem to say : " The first four years are always the worst," and suggest a self-confidence which reflects able management and a straightforward approach to work. Actually the group is not busy as the year opens—but what a year it is going to be !

FIFTEEN CROWDED MINUTES

Two Canadian Flying Officers, R. R. Schultz and V. Williams, visited us the other day. They are the Mosquito crew who in December destroyed three enemy night raiders in something less than a quarter of an hour. Ammunition expenditure was very economical, too, being 7 seconds, 1 second and 8 seconds respectively. The third one was the most expensive, and F/O Schultz paid a tribute to the German pilot's skill when he spoke to operatives in some of our factories.

All the bombers were Do. 217's. The first became a

blazing mass in the sea after being hit in the starboard engine at 400 yards. When the second was sighted 8 minutes later it was being overtaken so rapidly that had it not disintegrated directly cannon fire opened, there would have been a mid-air collision ; as it was, the bomb-load must have exploded and the Mosquito flew through the wreckage. One and a half minutes later began the chase of the third victim from 14,000 feet down to sea level, during which the Mosquito was hit in the port engine and the instrument panel was shot away. " It was a running fight," said F/O Schultz. " He was firing at me all the time and it was only just as my ammunition was giving out that I got in the shot which sent him into the sea."

Both F/O Schultz and F/O Williams were full of praise for the Mark II in which they had this triumph. and urged all concerned to maintain the clean finish that is so characteristic of the Mosquito.

HIGH SCORERS : F/O Schultz with F/O Williams, describing the end of the three raiders they destroyed, to a dispersed electrical shop, the November winners of the Aircraft Divn. Production Trophy, which can be seen in the background. They were first with 794 points. Second and third places were gained by a dispersed fittings shop and the coppersmiths, with 695 points and 568 points respectively.

IN THE NEW YEAR HONOURS : Ivor G. Jones joined the de Havilland Company at Stag Lane in July, 1934, as a receiving record clerk. He then spent a few months in the stock record department before transferring to the contracts department where he now is. Immediately prior to the Battle of Britain he was responsible for progressing and distributing the components needed to carry out the Spitfire/Hurricane Constant-Speed conversion scheme and the enthusiasm and energy which he displayed at this time played a major part in carrying this work through in such a short space of time. This, combined with a high general level of meritorious work led to his being awarded the British Empire Medal in the 1944 New Year Honours. Mr. Jones is a sergeant in the Home Guard and a highlight in the Stag Lane Sports Club and Dramatic Society.

MOSQUITO ITEMS

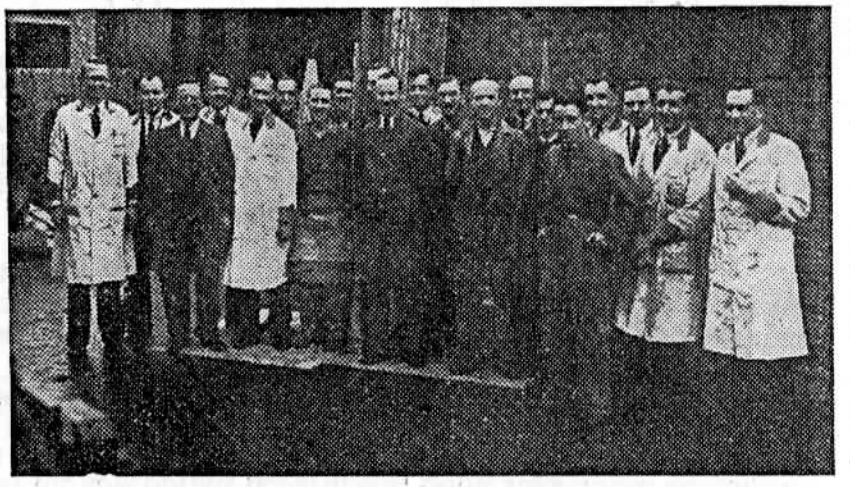
The B.B.C. announced on Christmas Day that Canadian-built Mosquito bombers, flight-delivered across the Atlantic, had been in action in Europe during December. Their first sortie was an honourable one, Berlin being the target. Our Canadian plant has been turning out these aircraft for a year but early deliveries have mostly been absorbed in North America by the U.S.A.A.F. and the R.C.A.F. Delivery of Canadian photographic Mosquitoes to the U.S.A.A.F. reconnaissance units in the Mediterranean was announced in America recently.

The appearance of British-built Mosquitoes on the Burma front has been reported by the Japanese.

The fact that passengers as well as freight are carried on the Britain–Stockholm Mosquito " air line " of British Overseas Airways was released in the London papers on December 23.

STAG LANE TRADITION AGAIN

Speaking at the Christmas gathering of the Engine and Propeller Divn. Supervision staff Mr. Hearle thanked them for their leadership during the war years, and again urged their constant care for all matters concerning education of the young people entering our company, so that we may produce the next generation of engineers, citizens and leaders. Mr. Butler and Mr. Parkes also spoke with spirit about the company's place in this war and after.



WELL PLAYED BLADES: Recently one of our main propeller blade shops had its production programme completely altered at very short notice. The unavoidable difficulties of such a change-over were overcome so well that all were specially complimented by Mr. Parkes on their output figures in the first few days. Those in the picture are picked out as representative of each section concerned. (l. to r.) Messrs. G. E. Fawcett (general foreman); T. Connop (nightshift foreman); L. E. Markey (chief inspector, blades); J. E. S. Mercer (charge hand); H. D. Rodie (charge hand); A. W. Allcock; G. A. Gammon; W. N. Armstrong; N. J. Hemmings; R. Daddow; H. Stewart (charge hand); W. Bishop; G. Bainbridge; C. R. Parkin; J. Folds; R. Sewell; G. Brown (charge hand); E. J. Cox (charge hand); H. Luker (charge hand); F. A. James (charge hand). Unfortunately, J. Sooby of the machine section was not present.

A VERY YOUNG "OLDSTER"

Eleventh member of the 1923 "Over-Twenties": By an oversight Mr. D. R. A. Saunders was omitted from the list of 1923 members of the company who figured in O.J. No. 54. Here is his picture. He joined wood detail at Stag Lane as a shop boy when 14 years old, and for most of the years since then has been an Aircraft Divn. woodwork machinist. Surely he's the youngest "Over-Twenty" to date?

MERLIN REPAIR GROUP

Mr. K. C. T. Marshall thinks well of the efficiency of the Plant Dept. (E. & P. Division) in getting completed within six weeks a 6,000 square feet extension he wanted urgently for the Group. "Remarkable" was the word he used.

Recent staff changes within the Group are that Mr. E. V. Moore has become resident inspector in charge, in the place of Mr. W. Hislop, who has been appointed inspector in charge of another important engine section.

BATTLE OF BRITAIN R.A.F. MEMORIAL

The Eastern chapel in the Henry VII Chapel of Westminster Abbey is to be furnished as a memorial to the air crews killed in the Battle of Britain. A bomb hole in the wall made during the battle will be left as it is. Anyone wishing to contribute may make a donation from 6d. upwards by walking into any bank in Britain and signing a list. Marshal of the Royal Air Force Lord Trenchard and Air Chief Marshal Dowding head the committee. Any surplus money will go to the R.A.F. Benevolent Fund.

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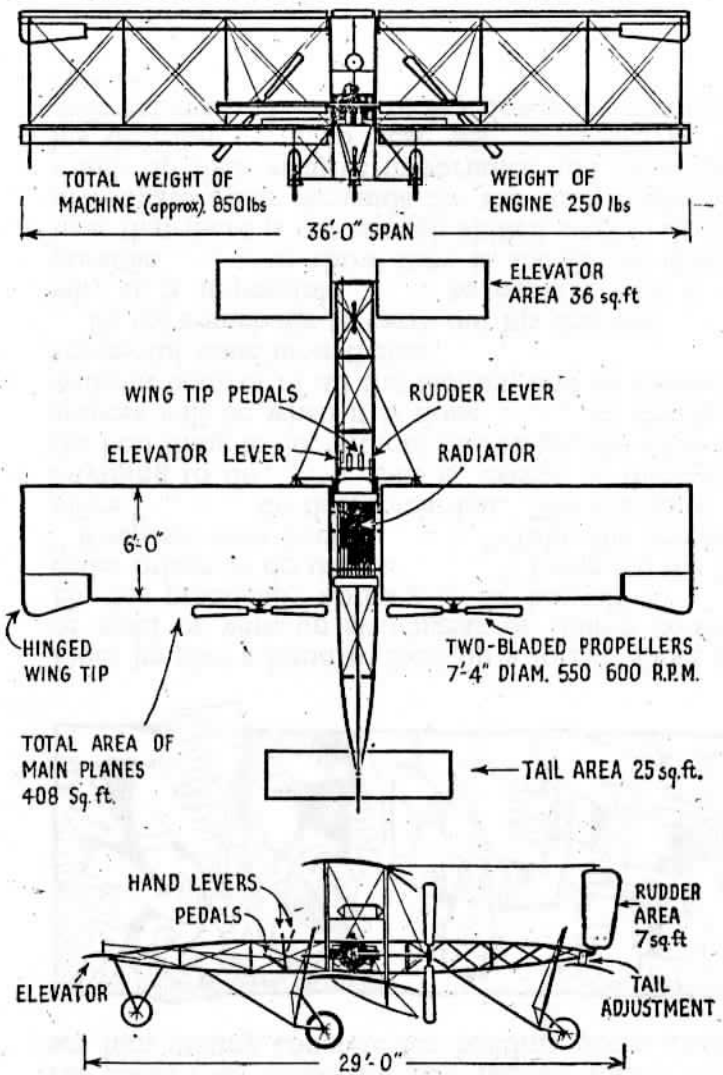
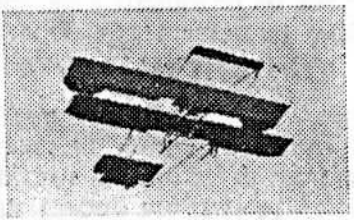
THE HAVILLAND No. 1 1908 - 1909



DE HAVILLAND HISTORY: The DE H. No. 2

When the de Havilland No. 1 (described in O.J. 55) came to grief on its first flight in 1910 only the engine was undamaged. The wreckage was brought back to the shed in Fulham where the machine had been built and Messrs. de Havilland and Hearle set to work to build around the engine an improved aeroplane.

Silver spruce was used for the spars instead of white wood, but the wing structure and area were not much altered, though the rest of the airframe followed more closely the construction of other machines of the time. The span was about 40 ft. and the empty weight about 800 lb. The shafts and gearing of the two propellers had given some trouble and to save time a single direct-drive propeller was substituted having slightly larger diameter and altered pitch. The rudder was put below instead of above the lifting tailplane.

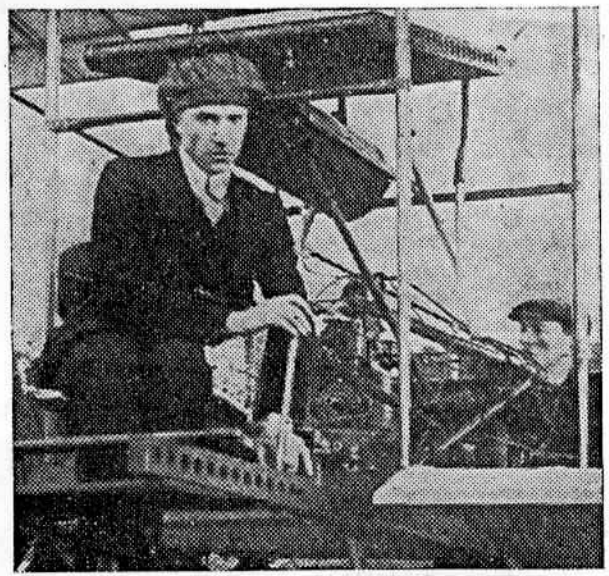


The de Havilland No. 2 in flight in 1910. ["*Flight*" *photo.*

Several months' work saw the de Havilland No. 2 ready and for a second time the two men conveyed their handiwork, dismantled on a big Commer lorry, to the North Hampshire Downs at Seven Barrows between Litchfield and Highclere. This site, on Lord Carnarvon's property, had been originally chosen because it was near de Havilland's home and because two sheds were available there which Moore Brabazon had put up for some flying he intended to do in a French machine.

Unlike the No. 1, which had always seemed to stick firmly to the ground except on that day when the throttle

was opened wide on a downhill run into a good wind, the No. 2 hopped promisingly from an early stage and that was when Hearle used to lie on the grass to look for daylight under the wheels. From hops de Havilland quickly progressed to short circuits rising to 100 ft. or so. The "full speed" was 38 m.p.h. Several hours were flown on this aeroplane and then, towards the end of 1910, when funds were running low, de Havilland heard that the Government Balloon Factory at Farnborough were rather keen to have an aeroplane. The outcome of this was that he was taken on in the drawing office there, and as pilot, Hearle was signed on as a mechanic, and the aeroplane was purchased and went to Farnborough with them.



On the Hampshire Downs in 1910, Captain de Havilland at the controls and Mr. Hearle doing his final inspection.

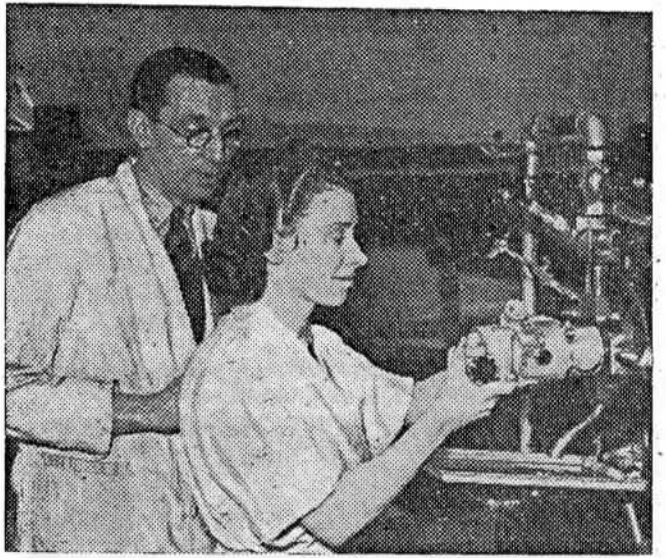
Its design, resembling the layout of Farman biplanes, was called the F.E.1, meaning the Government's first Farman type experimental. One of the earliest modifications was to hinge the trailing edge of the tailplane and control it in conjunction with the front mono-elevator, and later the front elevator was removed altogether. Reconstructed in this form

and with a 50 h.p. Gnome rotary engine the machine emerged in September, 1911, as the F.E.2. Earlier in 1911 de Havilland worked on, and was mainly responsible for, the design of a 1,200 lb. " Canard " machine for the Army—a new form of front-elevator pusher biplane with main undercarriage behind the centre of gravity and a forward skid—a layout seriously revived in aeronautical thought of late and adopted in our Technical School's most recent design exercise, the T.K.5 monoplane of 1939. The next Farnborough design was the B.E.1 (Bleriot Experimental), a tractor biplane which started a new and successful series and the layout of which was followed in the D.H.4 and the later Moths.

WOMEN'S TOOL ROOM SUCCESS

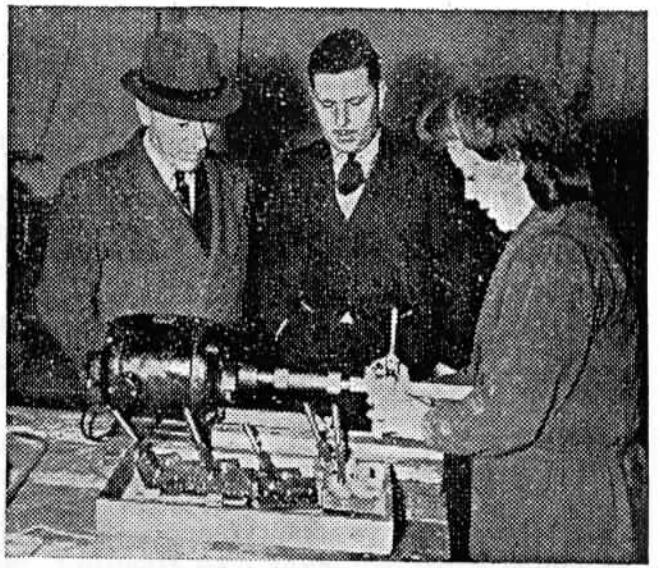
A department of the Propeller Division tool room shows the increasingly important part women are playing in the war. About a year ago Mr. C. A. Hall, tool room superintendent, formed a gauge-making section of women, at a time when there was an overload of many months' template work. Formerly men alone had made templates, which give the correct sectional shape at set intervals along propeller blades. They are used as gauges by operatives when machining the blades, to ensure each one being correct size and shape.

Nine girls came from the Ministry of Labour training school, having 4 months training or less. An experienced man, Mr. J. R. Carr, was installed to give further instruction and production began right away. It was soon evident that the plan was successful. Two noteworthy performances can be quoted. First, the completing of a pair of propeller blade templates (that is 1 face and 1 camber, and different from each other) by Miss Betty Gould in 15 hours instead of the estimated 18 hours. Then Miss Margaret Shorter did 5 face templates (each the same as the other) also in 15 hours. The position now is that all such work is done exclusively by these girls, and there is no overload at all. A photograph of the girls at work is on page 5.

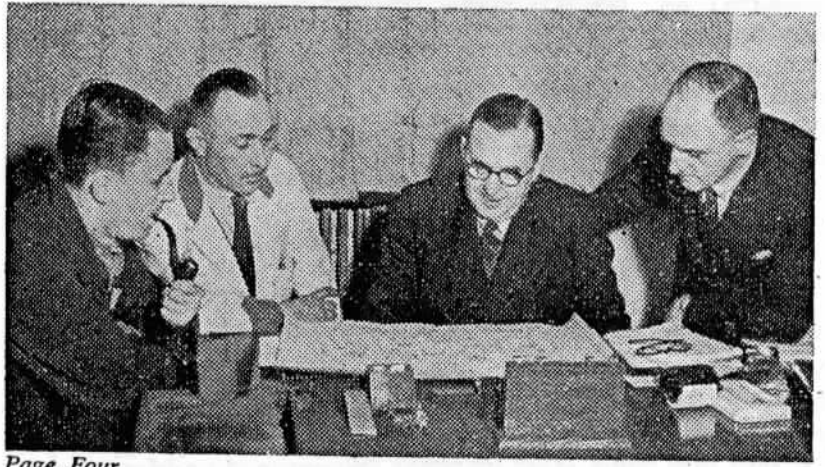


(Left) Mr. Frederick Lane, general oreman, on hand while Mrs. Doris Brewster removed from the Test Rig the XX,000th constant-speed unit to be overhauled by our No. 1 Propeller Repair Depot.

(Right) Mr. G. Nichols (left) with Mr. F. J. Perham (foreman coppersmiths) watching Miss D. Shepherd operate the new pipe bulbing machine tool.



(Below) The E. & P. Divn. suggestion boxes sub-committee in session: (l. to r.) Messrs. R. Bass W. J. Rumble, P. W. Witt and G. A. Luff.



Part of the E. & P. Divn. tool room, women's section. At the table on the left is Miss Betty Gould, marking out a template, and on the right Miss Margaret Shorter is straightening one on the blue surface plate.

MASS MINIATURE RADIOGRAPHY (TUBERCULOSIS)

"In the midst of war we cannot afford to ignore an enemy which kills 25,000 people every year in this country, and is still, except for war and accidents, the chief destroyer of man and woman in its prime," said Mr. E. Brown, Minister of Health, in April last year. And this is why the new method of chest examination by miniature X-ray filming is being introduced.

The apparatus used is an X-ray apparatus incorporating a camera which takes a small photograph of the picture on the screen little more than an inch square. They are cheap, easy to store, and can be taken at a very rapid rate. The miniature film is afterwards viewed by projection on to a screen, and where any abnormality is seen, a large film (taken with the same apparatus) is required.

It has been arranged that the County Council Unit shall visit the factories of our Engine and Propeller Divisions in March. The shop stewards will have full information about the scheme, and all questions should be referred to them. It is hoped that there will be 100 per cent. co-operation from de Havilland's personnel.

The aim of mass radiography is to detect pulmonary tuberculosis in its early stages, before symptoms may have otherwise shown themselves, and when there is every chance of making a complete cure, thus enabling the person concerned to enjoy a normal working life instead of allowing this insidious disease to go forward till the patient becomes a chronic invalid or meets a premature death.

The method is not quite new; it has been used already in the three fighting Services, but this is the first time a scheme has been planned to cover the whole of the civil population and it is a very important part of the national campaign against tuberculosis. The Trades Union Congress and British Employers' Confederation have given their full support to the arrangements. A limited number of machines

are being produced and to begin with only certain areas, one of which is Middlesex, will be covered. Eventually it is hoped that miniature radiography will become part of routine health examinations at regular intervals throughout the country. For the present, arrangements will be made to examine suitable groups of ordinary healthy men and women in factories, offices or any place where large numbers of people can be assembled. The vast majority will have the satisfaction of being told that there is nothing wrong with their lungs. A very small minority, in whom some abnormality is found will be given the opportunity to seek advice and treatment. The process is voluntary and confidential; the result of the X-ray is known only to the individual and the doctor concerned.

An important cause of delay in the early treatment of tuberculosis in the past has been the financial position of the patient, who has carried on with his work long after he should have reported sick, knowing that he could not afford to lose his job. The Government has therefore introduced the payment of special allowances to people who have to give up remunerative work in order to undertake treatment.

The war against tuberculosis must be continued with renewed vigour and it is a war which cannot be fought by medical men alone; they need the co-operation of the people themselves. Moreover, it is up to everybody to take the matter of his own health into his own hands. Man has a right to be healthy, and therefore he has a right of access to the means of protecting health and preventing disease. This mass X-ray service is a preventive measure provided free—success depends on complete co-operation, and it is to the advantage of the individual and of the community to make use of it.

BRAIN WAVES WANTED

One of the first things done by the newly elected Engine and Propeller Division Joint Production Committee was to appoint a Sub-Committee to encourage operatives to submit

more ideas through suggestion boxes for improving production methods. Many more of these boxes have been installed, each one with a handy supply of forms on which suggestions can be written. When Mr. Hearle was told of the scheme he wrote to say : " I am very interested to see what you are doing, and note that it comes into line with the suggestion put forward by Sir Stafford Cripps."

All adopted suggestions will be rewarded on their merits, as recommended by the Joint Production Sub-Committee, (see page 4) and approved by Mr. H. J. Nixon. The boxes will be cleared each Saturday morning, when suggestions will be examined, acknowledged, and passed on for investigation by the appropriate department. Some suggestions adopted in 1943 were : the saving of high-speed steel on Berliner cutters (Mr. S. E. Bailey) ; an upfacing cutter design (Mr. R. Knight) ; an idea for paraffin washing of engine components (Messrs. C. Harding and C. Parker) ; the saving of material when cutting Duralumin sheets (Mr. S. Cole) ; and methods of holding components while plating (Messrs. E. T. Dance and P. Leahy).

A TIME-SAVING INNOVATION

Our Coppersmiths have just had an ingenious new machine tool installed, designed by the tool room foreman, Mr. G. Nichols. It has three big advantages in pipe bulbing operations : it does a better job than the old method, it takes only a third of the time, and girls new to the kind of work can do it. It is illustrated on page 5.

The Aircraft Division Library are to sell a variety of coloured Mosquito pictures and booklets such as " Even I can understand " and reprints from *The Aeroplane*. Prices suit all pockets, and the proceeds will go to the D.H. Benevolent Fund. Note the date and time : Wednesday, Feb. 16, between 5.15 and 8.30 p.m.

Published for private circluation only. The contents are not to be communicated to anyone not in the employ of The de Havilland Aircraft Co., Ltd. Printed by Samson Clarks.

Private O. J. No. 57
Memorandum of information to all de Havilland personnel. 12/7/44

DE HAVILLAND TECHNICAL EDUCATION

The following is a message to every employee from the Managing Director, Mr. F. T. Hearle :—

As many of you know, an Education Board of senior officials from our various groups was formed in May, 1943, to consider the future needs of technical education within the de Havilland enterprise, and to direct the policy of our Technical School in accordance with its findings. I would like to tell you of the progress so far made.

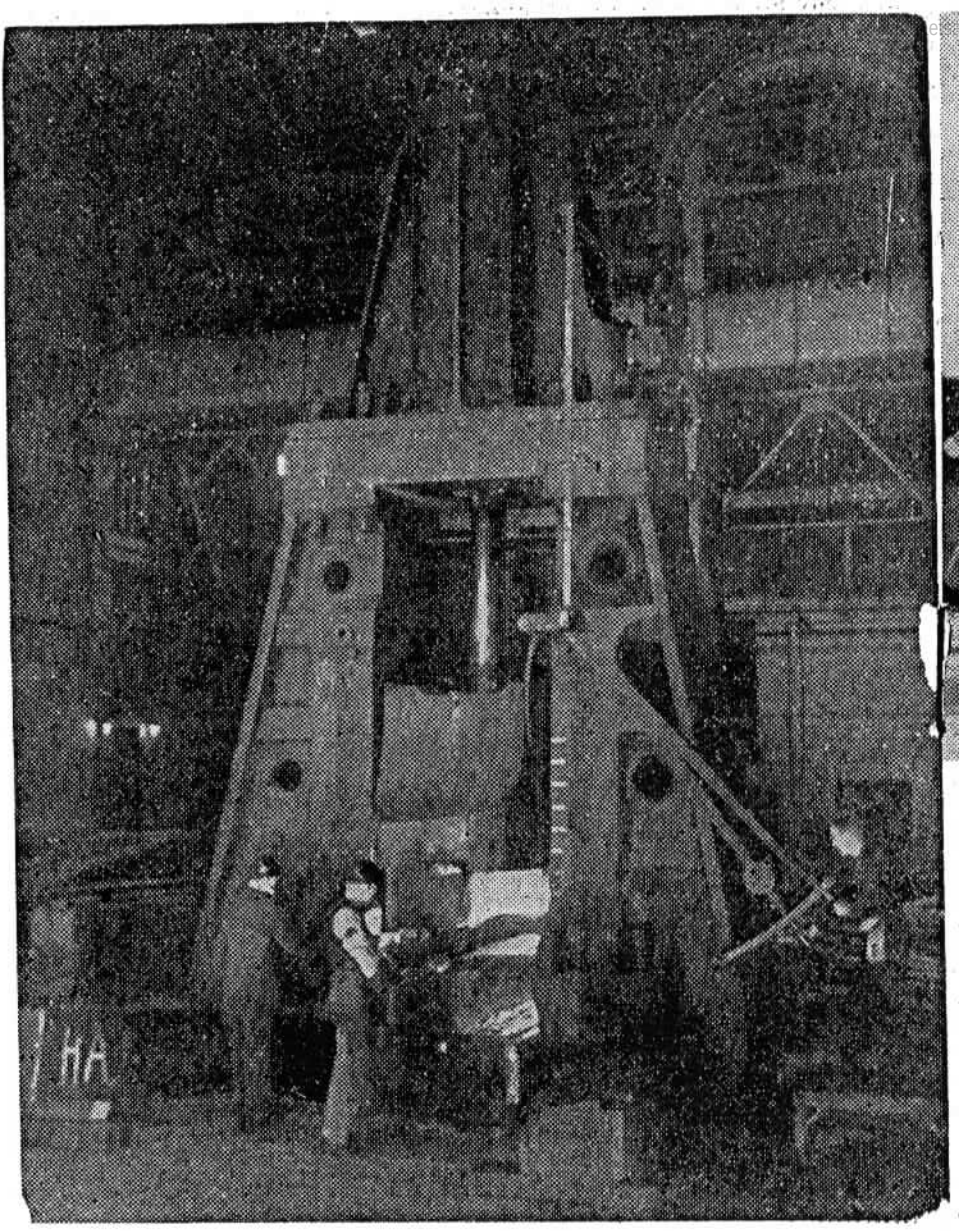
There is no doubt that to hold our own in industry and to maintain our standing and purpose in the world, we need immediate improvement in the educational system of this country, and I am convinced that industrial concerns such as our own must come forward with clear ideas of the training necessary for the young people they are taking on, and with plans for making such training available in conjunction with their local authorities.

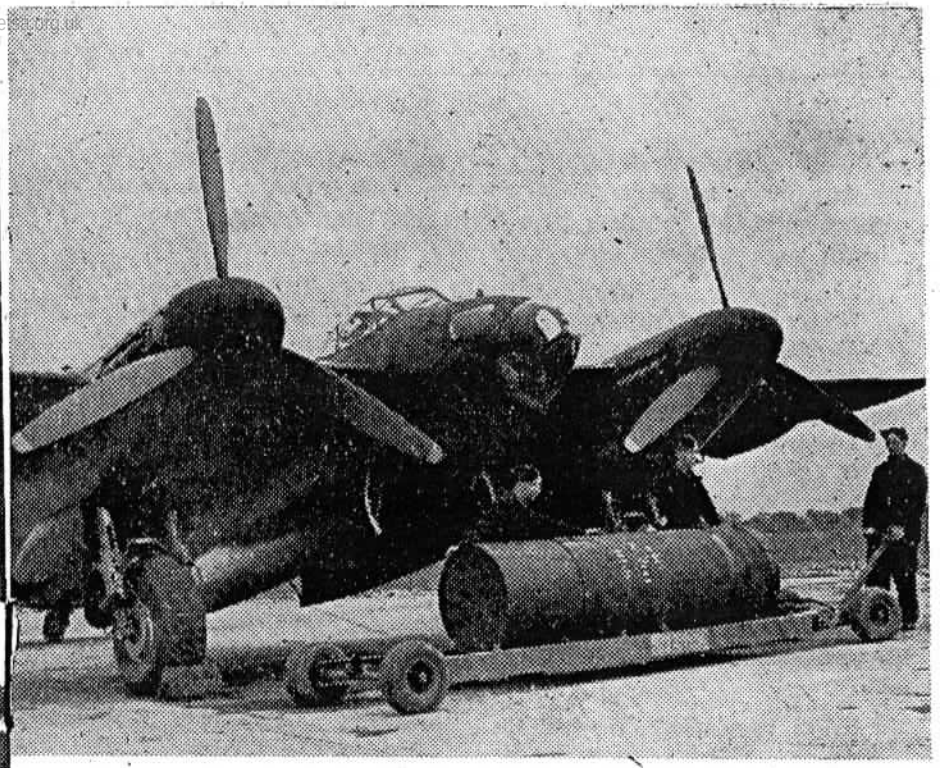
We realised the special need for technical training in our particular industry very early in this company's history, and started our own school as long ago as 1928. We have also developed a system of apprenticeship which has become merged into the organisation of the school, and there are scholarships to open the way to the full training course.

It was to examine our system (already recognised as a good one) and to plan for its future development that the Education Board was formed, and I am anxious that responsible people in the company, and especially those who have children growing up, should learn about our existing facilities and take an interest in our efforts to improve them.

After a preliminary discussion the Board appointed sub-committees to examine in detail the training needs of our

(*Continued on page* 4)





Above :

The block-buster : the most economical air weapon in the war (flying bombs notwithstanding) is this variant of the Mosquito. To carry 4,000 lb. of explosive to precise targets as far afield as Berlin it employs half the engine power of a heavy bomber and a quarter of the crew for considerably less time and with much less risk—and it is built with less than half the man-hours and mainly of wood.

Opposite :

2,000 tons at a touch : one of the hammers of The de Havilland Forge, ceaselessly serving the aircraft industry. It is forging the metal blades for de Havilland propellers, suitable for engines up to 3,000 h.p.

Aircraft, Engine and Propeller Divisions. The Hatfield sub-committee comprised Messrs. Clarkson (Chairman), Bishop, Brant and Rudge, and the Edgware committee comprised Messrs. Brodie (Chairman), H. J. Nixon and Snell.

These sub-committees went into the problem in great detail, visited and studied the schools run by other first-rate engineering concerns, looked into cost estimates, etc., and drew up their separate reports, which were then collectively discussed. Some excellent training organisations have been created by private enterprise in industrial concerns and we have been permitted to study several, including those of the British Thomson Houston Company, the Standard Telephone Co., Rolls Royce, Ltd., and Allens of Bedford. Whilst differing as between aircraft and engine-propeller requirements the sub-committees agreed as to the categories of trainee and the general outline of instruction.

On the following pages are reproduced the charts drawn up by these sub-committees to show channels of opportunity envisaged. They are not, of course, to be considered as final. The three grades of trainee to be provided for comprise the Trade Apprentice entering at about 15½ to 16½ years for a 4½ to 5 years' indenture, the Engineering Apprentice entering at about 17 years (for about 5 years' training), and the Engineering Student, coming to the firm in smaller numbers at about 21 years from Universities and lacking practical experience. For practical training both Trade and Engineering Apprentices would spend their first year in the school's own shops and the remaining years in the factory workshops. The theoretical training which is provided for all grades has been revised in the light of recent developments in the industry. For the Trade Apprentice these theoretical courses are compulsory for the first two or three years, and optional thereafter. For the Engineering Apprentice they are more comprehensive and are compulsory for the whole period of his training, with specialisation in the last two years. Selection panels drawn from the school

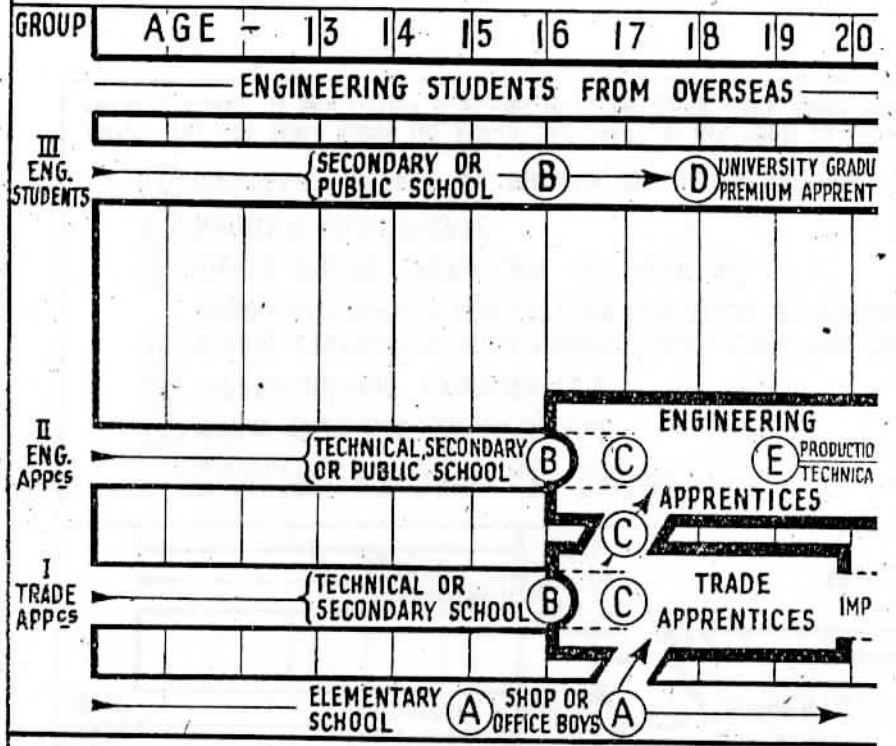
staff and the company's executives will control the intake and selection of the trainees, and in this way the departments of the company can help to frame the training methods and will be drawn into association with the work of the school.

The reports of the two sub-committees have been adopted by the Education Board as the basis for action and a small council has been elected comprising myself and Mr. Nixon, the sub-committee chairmen (Messrs. Clarkson and Brodie), and the Board Secretary (Mr. Maslin) which is to put the recommendations into effect. The first steps will be improvements in the Trade School facilities, the implementing of syllabus details, formation of the selection panels, etc Meanwhile plans are being worked out with the municipal education authorities for a closer affiliation as regards general and cultural education in the earlier years and more advanced technical school work in the later years. You may have read about plans for a technical college near Hatfield, for which Mr. Butler has offered a site.

We strongly feel that every juvenile entering the company, whether apprenticed or not, should come under the watchful eye of the company's educational staff and have the opportunities explained, and that the old practice of picking up a trade haphazard should be eliminated. There is a very big demand for entrance into de Havilland training schemes and a high standard is required at entry ; trainees going through the school at present are of better all-round calibre than ever before, and recent examination results have been very gratifying. I would also add that the general opinion of the Education Board as the outcome of its enquiries is that whilst possibilities for improvement are apparent, the present training facilities are quite good.

The Board desires that everybody should take interest in our educational activities, and I would say that suggestions are always welcome. They should be made through Mr. Maslin, Secretary to the Education Board.

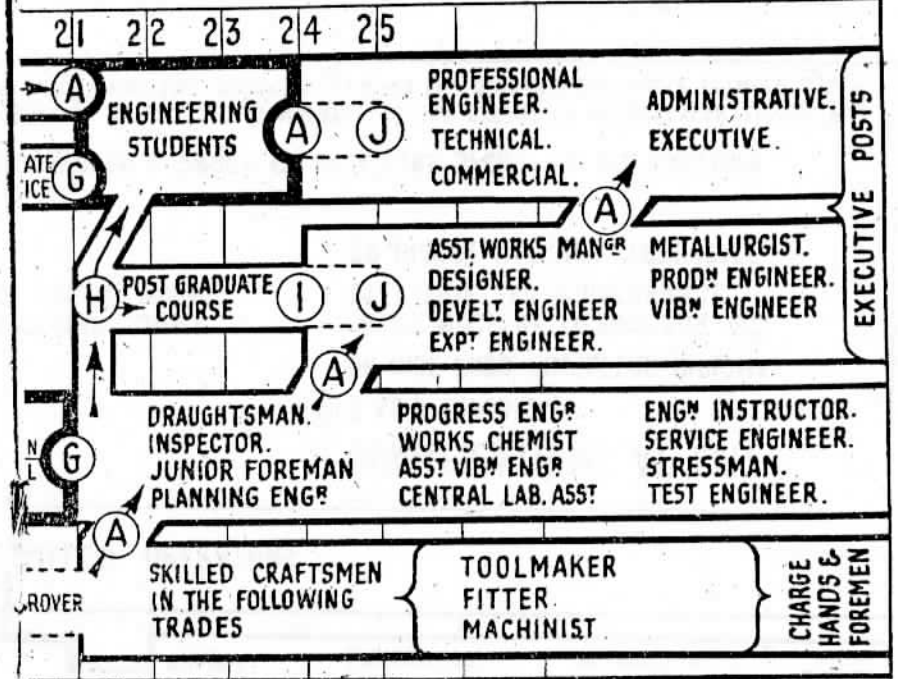
DE HAVILLAND STUDENTS & APPRENTICES



KEY TO QUALIFYING

- (A) WORKS INTERVIEW AND TEST.
- (B) SCHOOL CERTIFICATE; MATRIC; OR WORKS ENTRANCE EXAM.
- (C) TRADE & ENGR APPRENTICESHIP INDENTURE EXAM.
- (D) HIGHER CERTIFICATE OR INTER B.SC.
- (E) ENGINEERING APPRENTICE GRADING EXAM.

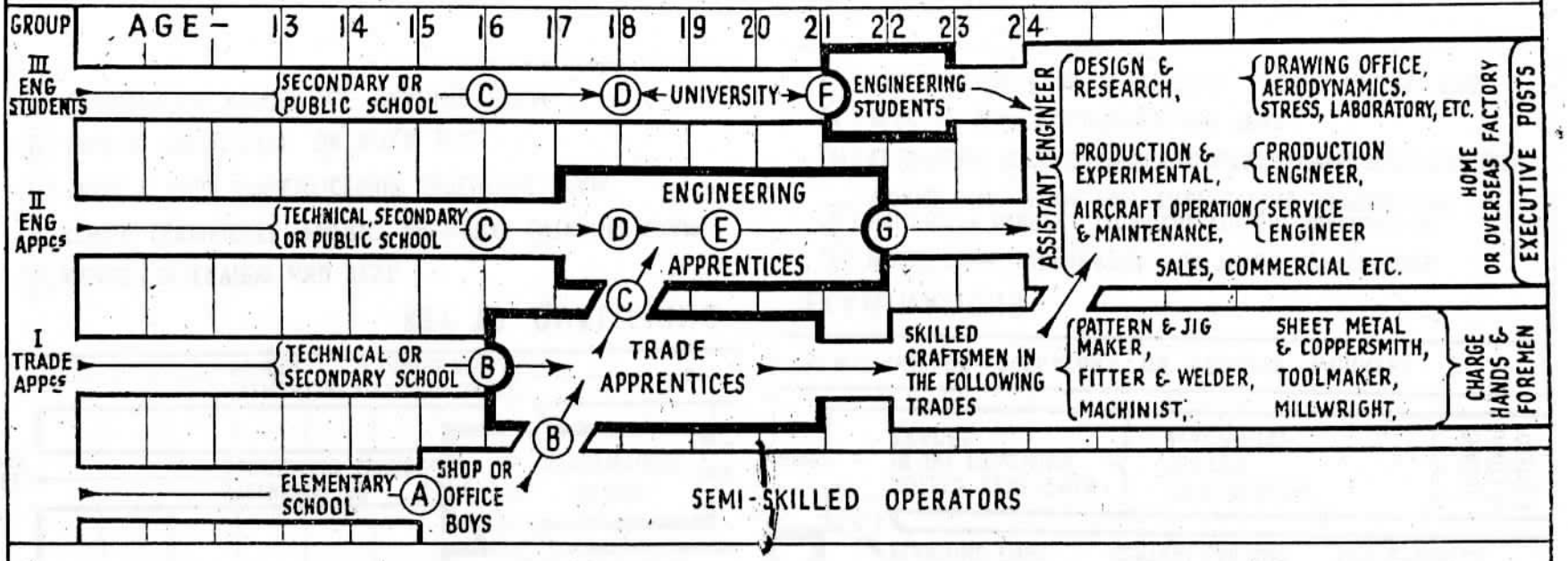
TRAINING SCHEME - Engine & Propeller Division



EXAMINATIONS

- (F) WORKS FINAL EXAMINATION FOR TRADE APPRENTICES.
- (G) UNIVERSITY DEGREE; TECHNICAL COLLEGE DIPLOMA, OR WORKS FINAL EXAM. FOR ENGINEERING APPRENTICES.
- (H) DE HAVILLAND SCHOLARSHIP OR EQUIVALENT EXTERNAL SCHOLARSHIP EXAM.
- (I) M.SC. OR WORKS INTERVIEW AND TEST.
- (J) PROFESSIONAL EXAM. A.M.I.MECH.E. A.F.R.AeS. A.M.I.P.E. ETC.

DE HAVILLAND STUDENTS & APPRENTICES TRAINING SCHEME — Aircraft Division.



QUALIFICATIONS AT ENTRY

(A) WORKS ENTRANCE EXAMINATION.

(B) APPRENTICESHIP EXAMINATION.

(C) SCHOOL CERTIFICATE WITH MATRICULATION EXEMPTION, OR 3rd YEAR JUNIOR TECHNICAL SCHOOL CERTIFICATE, OR PROMOTION EXAMINATION HELD AT WORKS.

(D) HIGHER SCHOOL CERTIFICATE OR INTER Bsc.

(E) NATIONAL CERTIFICATE.

(F) UNIVERSITY DEGREE OR DIPLOMA, OR HIGHER NATIONAL CERTIFICATE + PROOF OF VACATIONS SPENT IN D.H. FACTORY

QUALIFICATIONS AT EXIT

(G) R.Ae.S DIPLOMA,
OR INST. PROD. ENGINEERS DIPLOMA.
OR AIR MINISTRY LICENCE FOR A/C OPERATION AND MAINTENANCE,
OR HIGHER NATIONAL CERTIFICATE.

NOTE: THE AGE SCALE ALONG THE TOP OF THE CHART IS INTENDED TO REPRESENT AN AVERAGE: IT IS MOVABLE TO THE EXTENT OF ABOUT 1 YEAR EITHER WAY. ENTRY IS SUBJECT TO SATISFACTORY SELECTION BOARD INTERVIEW:— FOR TRADE APPES AT (B) FOR ENG: APPES AT (C) & FOR ENG: STUDENTS SOMEWHERE BETWEEN (D) & (F)

MOSQUITO IN PRODUCTION IN AUSTRALIA

That the Mosquito is being produced in Canada as well as England has long been known. Sir Stafford Cripps has now announced that it is also being built in Australia. This explains the claims one has frequently heard that Mosquito manufacture represents the most world-wide "dispersal system" ever achieved in the aircraft industry. It was in the summer of 1942, when the D.H.98 had been in action from British bases for about nine months, that the Australian de Havilland Company negotiated arrangements with the Australian Government to undertake this task—and quite an undertaking it was for a factory which had hitherto built only Tiger Moths and Dragons. The driving force behind the project was and is Major A. Murray Jones, A.F.C., general manager of the Australian D.H. establishment. It was he who would not take "No" for an answer when the problems of engine supplies, local manufacture of intricate parts, use of alternative materials, and so on, loomed up to obstruct the plan. It is largely to his credit that the Australian Company had made such preparations as it did before the war, for he was always keen to have young Australian engineers graduate in England at the de Havilland Aeronautical Technical School and spend time in the parent company's factories, with the aim of strengthening the technical side of the Australian industry.

This progressive spirit was seen in 1939–40 in the starting of a D.H. Propeller Division in Australia, which, with eager help from Stag Lane, has grown to be an important asset in the war against Japan. Mr. Ian Spittle, sent from here, manages it and they have long had feathering Hydromatics in full production.

Again with Stag Lane's assistance, and with the collaboration of General Motors (Holdens), Ltd., of Melbourne, the manufacture of Gipsy engines was organised in Australia in the early days of the war.

D.H. Sydney got down to the Mosquito job with characteristic Australian practicality and energy. Their Secretary, Mr. John Byrne, flew the Pacific to our Canadian Company; one of their rising technicians, Mr. John Mills, accompanied him and flew on to England, where he was well known to us, having completed his training at Hatfield before the war. We parted with one of our own valued young men, Mr. M. M. Waghorn, who went off to Sydney at short notice. Tens of thousands of drawings, and micro-film copies of them, were sent out, from our Aircraft Division, also numerous jigs and tools, component supplies, written and photographic data galore, just as when we set about to assist our Canadian Company to manufacture Mosquitoes in 1941.

The first Australian-built Mosquito flew on July 23, 1943, and how much further headway has been made in the ensuing year we are not permitted to publish. Mr. Pat Fillingham, an old Hatfield test pilot who had gone to Toronto to introduce our home technique to the Canadian test flight, travelled on to Australia to repeat the procedure there, and recently got home again flying a Mosquito from Canada.

All along the de Havilland way of doing things has been evident in the three continents, and for this we must thank not merely the personal liaison while the Mosquito job has been in hand, but the steady build-up of the overseas branches of our family from 1927 when Major de Havilland inaugurated the Australian business with a Moth which he flew from Perth to Melbourne, and 1928 when Mr. R. A. Loader went westward to found our Canadian company in Toronto.

Long range, high speed and hard hitting power are qualities Australia needs for shifting the Japs. Obviously the Mosquito fighter-bomber qualifies; it also has economy in materials and production man-hours, ease of repair, functional adaptability, even buoyancy—all useful for an island-hopping campaign.

JET ENGINES: EFFECT ON INDUSTRY.

People engaged in making aircraft propellers have been heard to speculate whether the advent of jet propulsion will throw them out of work. It is more likely to increase the scope for propeller manufacture. The public imagination has been so fired by the announcement on Jan. 6, 1944 (that jet propulsion had been achieved by means of the gas turbine) that the possibilities of the continuous-combustion turbine as an engine to drive propellers have been largely passed over in the outpourings of the excitable press.

The gas-turbine jet is relatively extravagant of fuel except at high speeds because it throws a small mass of air back at high velocity (relative to the forward speed of the aircraft) whereas the propeller thrusts against a larger column of air and, being unable to throw that back so fast, thrusts the aeroplane forward more. Augmentors (fans or other devices to increase the mass of air per second that the gas turbine can get hold of at low speeds) may be used to overcome this inefficiency at take-off and other slow-flying conditions. But the possibilities of augmentors are limited; jet propulsion is essentially suitable for very high-speed flying, and especially at high altitudes.

On the other hand, to use the gas turbine as an engine to drive a propeller, so as to thrust against a larger column of air, seems to offer great possibilities for flying at what we might call "normal" speeds and altitudes of the present time. Part of the total energy would in that case be employed as jet propulsion and part to drive the propeller, and the designer would determine these proportions according to the speed range of the class of aircraft he had under consideration.

So the gas turbine may prove a competitor more of the reciprocating engine than of the propeller—but there are ways of increasing the efficiency of the reciprocating engine quite a lot yet so that any transition is likely to be gradual.

NEW D.H. TRANSPORT AIRCRAFT PROJECT

In Parliament on May 10, when replying to questions about plans for air transport, Lord Beaverbrook announced that the de Havilland Company is designing a small feeder-line aircraft which may be flying within about a year. This news should interest D.H. members. It has long been realised that, after combat aircraft, Britain has pressing need for transports in several categories. Air strength embraces transports, as it does trainers. We may reflect for only a moment on the volume of urgent transportation that will have to be done across Europe when railways are disorganised, and again on the transport problems of prosecuting the war against Japan.

These diverse tasks will call for small aircraft as well as large. So will the establishment of peacetime civil air lines. Indeed, there must always be several branch lines for every main air route, and the vehicle which we have been asked to create doubtless ranks high among the types considered necessary by the Brabazon Committee.

Moreover, the branch-liner has always been our company's especial concern. It follows the whole of our experience. We know the branch-line operator and his needs from twenty-five years of study and service. We are well chosen to be entrusted with this design, and whilst it is not to interfere with our military projects, all of the highest priority, the new transport will now go forward steadily on our drawing boards and in our prototype shops.

'It will be an all-metal multi-engined aircraft; its power units will represent a development of the supercharged Gipsy Six engine and they will drive de Havilland variable-pitch propellers of a new model. Technical teams on each of the three main sides of our enterprise will thus be exercised in the new project.

To refer to it as "the Rapide replacement'" is erroneous. It will be a larger, faster and more expensive machine than

the Dragon Rapide. It will suit a different class of service, where traffic density, and therefore ground establishments, have developed to a degree that makes economically possible the adoption of design refinements such as superchargers, variable-pitch propellers, and retractable chassis—in other words, where there is enough traffic to pay for higher speed.

The little Rapide never attempted to compete on developed airways. On the other hand, the faster types are equally unsuited for the undeveloped "upcountry" class of service—the branch of the branch line—where small fields with primitive engineering amenities are all that a light traffic can justify and where small time cuts on the journey are not valuable. In point of fact it would appear that there is likely to be scope for the Rapide in its modest way for quite a while. It is just about the simplest half-ton truck that was ever airborne.

The new machine will benefit from the reputation established by the pre-war D.H. types, and from the experience gained with them. The fact that its engines will be a further development from the 200 h.p. Gipsy Six that has been known and serviced the world over for ten years will promote confidence. That engine now does 750 hours of flying between overhauls. Our Engine Company has already had the supercharged version flying on test for two years.

Our Propeller Division will take keen interest in getting out a new model of propeller to mount on the developed engine. We are well qualified in propeller design for relatively small engines. The 1,000-size propeller which we designed in 1935 was the first variable-pitch propeller that the world had ever seen in quantity production for engines so small as 200 h.p., and was even successfully applied to the 140 h.p. Gipsy Major II.

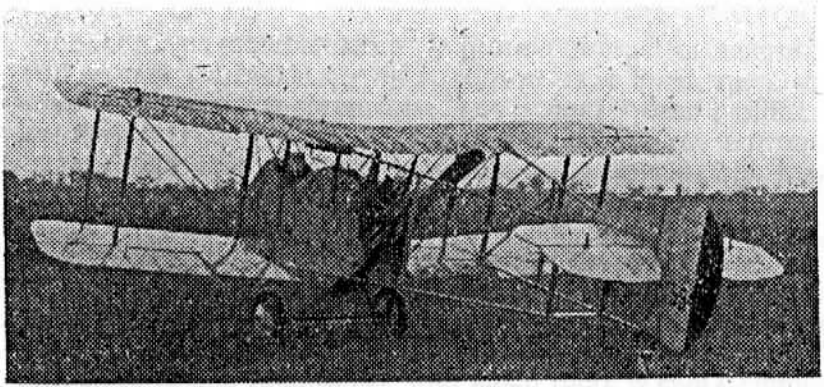
We have not yet settled upon a name for the new transport, but one feels that the word "Dragon" in some happy combination should be attached to this carrier of the branch-line tradition.

DE HAVILLAND HISTORY: The D.H.1 and 2

The D.H.1 was the first aircraft to be designed by Capt. Geoffrey de Havilland when he joined Mr. Holt Thomas's firm, The Aircraft Manufacturing Co., Ltd., at Hendon, London, early in 1914. It was a two-seat pusher fighter following in the tradition of the F.E.1, which he had developed at the Government Balloon Factory Farnborough, in 1911 by eliminating the front elevator from the pusher biplane on which he and Mr. F. T. Hearle had worked together privately in 1910.

The D.H.1, which had the 80 h.p. Renault or 90 h.p. Royal Aircraft Factory engine, first flew at Hendon aerodrome in the Spring of 1915, with Capt. de Havilland as pilot. It was noticeably a clean-looking machine compared with the Maurice Farmans that Airco were producing at the start of the 1914 war. With a span of 41 ft., wing area 410 sq. ft., all-up weight 2,044 lb., 22·8 lb./h.p., and 5.0 lb./sq. ft. wing loading, it had a top speed of 78 m.p.h. at sea level, and flew 10 ton-miles per gallon of fuel. The 120 Beardmore engine (based on the Austro-Daimler 6 cyl.

The D.H.I two-seat fighter



The D.H.2 single-seat fighter

vertical water-cooled design and giving 140 h.p.) was introduced in what was called the D.H.1A, putting the weight up to 2,502 lb. and the speed to 90 m.p.h. In both versions the pilot occupied the rear seat and the observer-gunner worked a pillar-mounted nosegun.

The D.H.1 and 1A were not made in quantity. Operational requirements quickly called for a single-seat fighter-scout and the D.H.2 was designed and flown the same year—1915—and put into production in time to figure largely in the Battle of the Somme in 1916. Like the D.H.1 in layout but smaller, and with 105 h.p. Gnome Monosoupape rotary engine, it did 100 m.p.h. at sea level, 75 m.p.h. at 10,000 ft. Its span was 28 ft. 3 in., wing area 227 sq. ft., all-up weight 1,320 lb., giving only 12.6 lb. per h.p. and 5.8 lb./sq. ft. wing loading. It had steel-tube tail booms, wood wing with fabric covering. The pilot worked a swivelling Lewis gun. The D.H.2 did a lot of useful operational work.

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Printed by Samson Clarks

DE HAVILLAND TO-DAY

September, 1944

1d.

After five years of war the de Havilland enterprise is to-day almost fully extended in its effort, though Mosquito production in Australia has yet to build up for the coming Pacific campaign, and some further surprises are being prepared for our enemies.

This booklet briefly explains the present scope of the organisation so far as the censor will allow, and includes by way of background an outline of de Havilland history.

DE HAVILLAND TO-DAY

THE DE HAVILLAND enterprise consists of a parent company and affiliated concerns in England and a group of associated companies in the Dominions. When we used to speak of "the de Havilland family" before the war we included also our many agencies in the Colonies and foreign countries (indicated by dots on the front-cover map), for close bonds united us.

Our main interest is aircraft design and manufacture. Because of the paramount importance of the power installation we developed our own engines for the small and medium-sized aircraft which were our chief concern. And when variable-pitch propellers started to become a specialised branch of the industry we pioneered their production in this country and it grew to be a major division of our business.

Before the war our Dominion companies were principally marketing and servicing organisations. Now those in Australia and Canada are builders of D.H. aircraft, in a big way, and our New Zealand company also manufactures complete machines in quantity.

Our associated undertakings in England include the Airspeed company, the de Havilland Forge, the de Havilland School of Flying, the de Havilland Aeronautical Technical School, and one or two smaller interests.

We have consistently given servicing the important place it should occupy alongside aircraft design and manufacture, so that to-day we operate and supervise

big overhaul and repair organisations for all our products, as well as for some products of other companies like Spitfire aircraft and Merlin engines.

Before the war our home establishment comprised the aircraft factory at Hatfield, the engine and propeller factories at Stag Lane, Edgware, a propeller shadow factory at Bolton, the Flying School and the Technical School. To-day, because of the suitability of all our products and our ability to expand without loss of cohesion, we find ourselves controlling nearly a hundred factories and premises, large and small, in this country alone.

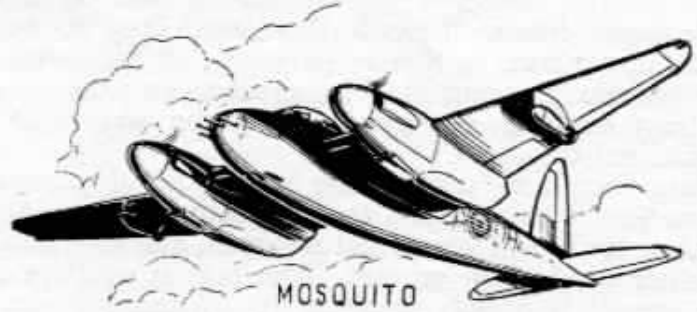
We have always been the leading builders of transport and training aircraft in the British Empire. To-day we are also in the forefront of achievement on the military side, and possess one of the most comprehensive and strongest technical organisations in the British aircraft industry. Furthermore, we are the only first-class creative enterprise that has full-scale aircraft manufacturing establishments in three continents —a world-wide dispersal system. For all that, we are still a relatively small concern with a peculiarly compact and homogeneous character, and we hope that this will help us to negotiate the difficult adjustments to post-war conditions, whatever they may be.

We will now briefly outline the enterprise as it is in 1944, without telling the enemy anything that he does not already know and without giving him anything but discomfort.

AIRCRAFT PRODUCTION

The three de Havilland aircraft types that are in full production at present are :

The Mosquito : the fastest aircraft of its day in the world, the most versatile and one of the most successful aircraft in the war, unique in being made of wood. It is built by the thousand in Britain, Canada and Australia. As everyone knows, it has Rolls-Royce engines.

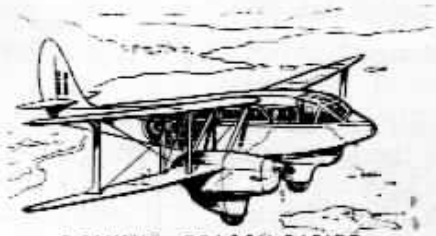


MOSQUITO

The Tiger Moth : for several years the principal basic trainer of the Royal Air Force and the Dominion and Colonial Air Forces. Practically every pilot in the British Empire has had his initial flying instruction on this machine. Its production is reckoned by the ten thousand. It has been built in Britain, Canada, Australia, New Zealand and some foreign countries and has had a long career, having been designed in 1932. It has the de Havilland Gipsy Major engine.

TIGER MOTH

The Dragon Rapide or Dominie : a light transport in world-wide use before the war, popular because of its low first cost and operating cost,



DOMINIE DRAGON RAPIDE

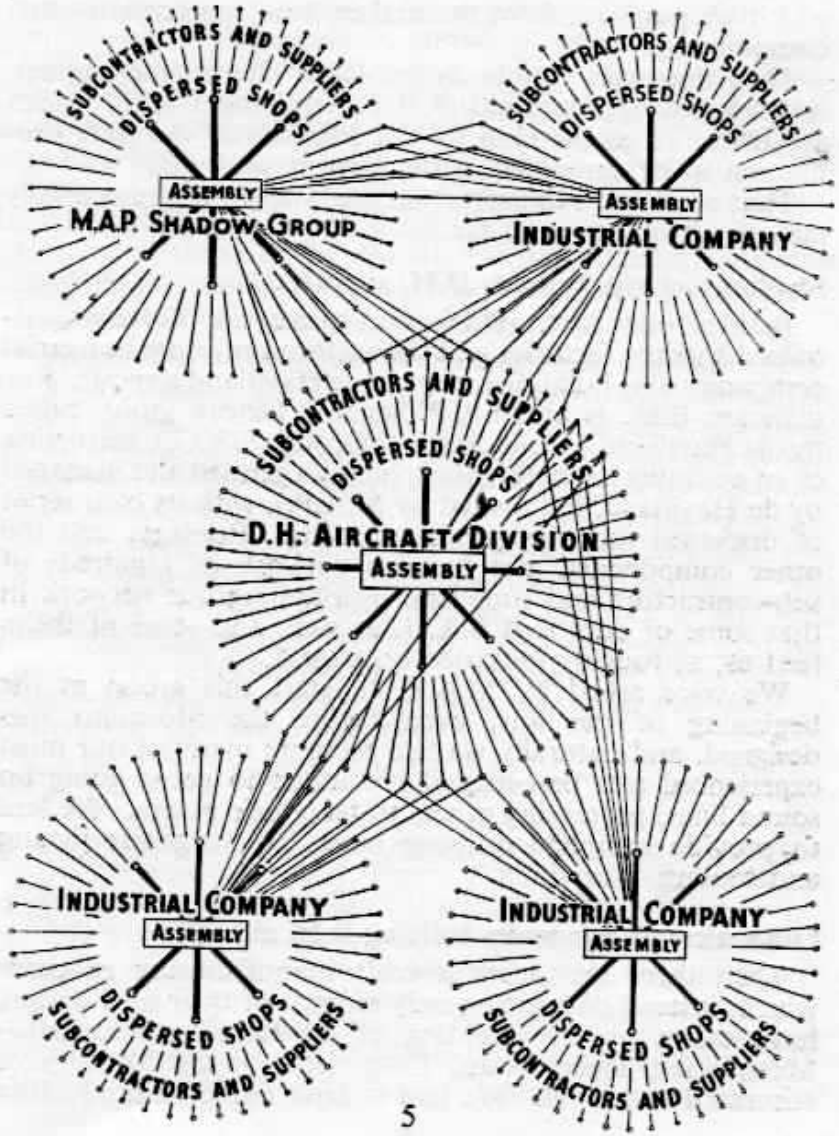
all-round practical utility and reliability and extreme ease of repair and maintenance. It has continued in production during the war (with the R.A.F. name Dominie) as a flying classroom for navigational training and as a communications vehicle. It has de Havilland Gipsy Six engines, called Gipsyqueens in R.A.F. language. It has never been built outside England but its predecessor, the Dragon, has been made in Australia during the war, also as a navigational trainer.

These aircraft are made under such widely dispersed conditions that it will be best to start with our own Aircraft Division, see how it works and is served, and then deal with the other production groups. The partial overlapping of these groups is crudely sketched out on the opposite page and will be referred to below.

The Aircraft Division :

This is a group of large and small factories and shops dispersed from 1940 onwards to reduce invasion and bombing dangers. Many parts of the aircraft we build are fabricated in these various shops, but others come from M.A.P. shadow factories, or from sub-contractors of whom we have trained over 400 to work for us under our technical guidance. The adaptability of these industrial concerns, most of them small firms with all the keen conscientiousness of private enterprise, has been an eye-opener. Little factories that made chairs and wardrobes, bicycles and window frames, learned to work to aeronautical precision and at an unaccustomed pace that often involved them in extensions and dispersals of their own.

Also, there are " bought-out " items like wheels and tyres



which we purchase from the makers who specialise in such components.

Then there are "embodiment-loan" items like engines, instruments, standardised R.A.F. equipment, etc., which are issued to us on loan by the Ministry of Aircraft Production to be embodied in the aircraft we build.

Thus parts and sub-assemblies are brought to the assembly factories from near and far.

Shadow factories building D.H. aircraft :

Besides our Aircraft Division there are Government-owned shadow factories and the factories of other industrial companies also building complete de Havilland aircraft. For instance, there is an M.A.P. shadow factory group called the de Havilland Second Aircraft Group (S.A.G.), consisting of an assembly depot (planned, built, organised and managed by de Havilland, but owned by M.A.P.), with its own series of dispersed factories producing wings, fuselages and the other components, and its own network of hundreds of sub-contractors and suppliers, overlapping our network in that some of ours feed S.A.G. as well, and some of theirs feed us, as roughly indicated on page 5.

We were asked by M.A.P. to start this group at the beginning of the war, even before the Mosquito was designed, and naturally we had to spare many of our most experienced and best-trusted executives to get it going on sound lines, promoting others to take their places. We had to provide complete drawings and data, organise jigging and tooling, everything.

Other aircraft companies building D.H. aircraft :

Then there are other aircraft manufacturing concerns which, instead of building only aircraft of their own design, have taken on the building of de Havilland aircraft—Mosquitoes, Tiger Moths, Dominies—for the Ministry of Aircraft Production. We had to lend our own production

engineers and organisers to these concerns and supply them with tens of thousands of drawings and all instructional data, and often jigs and tools as well, and generally to get them into the way of an unfamiliar job and make sure they could do it properly, and introduce them to sub-contractors and so help each of them to build up a network of satisfactory suppliers, again partly overlapping our own network. This has made a further drain on our best personnel, continuing all through the war as first one company and then another was asked by M.A.P. to take up the manufacture of the Mosquito and our other machines.

Companies in other industries building D.H. aircraft :

Furthermore, outside the aircraft industry there are motor-car manufacturers and others who with plucky adaptability have turned over to making Mosquitoes. Tiger Moths and Dominies. Their problems were rather greater for they were quite unused to aeroplanes and to the very close manufacturing limits, rigid inspection and special procedure that have necessarily become traditional in our industry. We have had to lend engineers and give very liberal guidance and continuous close liaison to such companies, and they have done remarkably well. They likewise have had to organise with our help their systems of sub-contracting companies and other suppliers.

Overseas D.H. factories building D.H. aircraft :
Canada.

Apart from foreign state factories like those in Portugal and Persia which build Tiger Moths, the only concerns overseas that are building complete aircraft of our design are de Havilland companies, though, of course, hundreds of sub-contractors supply them with parts, including large units like wings and fuselages.

The back history of our overseas companies will be touched on in a separate chapter, but the first real quantity production by de Havillands overseas was when our


CANADA

Canadian Company late in 1937 began building, to Hatfield drawings which they adapted here and there, a special "arctic" version of the Tiger Moth with coupé top, wheel brakes, and so forth. They built thousands onward into the war period and took on Ansons as well, and then in September, 1941, they turned over, lock, stock and barrel, to Mosquitoes.

The help we had to give from England can be well imagined, and many of us worked so hard on the job we have no need to call on the imagination. Complete wing and fuselage jigs, smaller jigs and fixtures, simple components and aircraft, tools, tens of thousands of drawings (all copied onto micro film), operation and materials schedules, hundreds of special photographs, supplies of the parts they could not easily get made over there, senior engineers on long-term loan—a full-size job in every way. Getting a motor-car manufacturer at home into Mosquito production really cannot be compared with it. Many a freezing-cold flight across the Atlantic at night in cramped bomber fuselage with a thermos and an oxygen mask was made by men who had reached their senior positions in twenty years of devoted "apprenticeship" to de Havilland aircraft designs and methods. Their loss in the ocean would have been serious for the industry. But we did not lose men, and we did not lose supplies or even drawings except for an occasional batch.

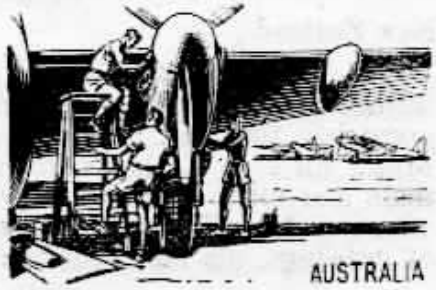
Canadian and American industrial companies showed adaptability as English firms had done. General Motors turned over from motor chassis to balsa-sandwich fuselages, Massey Harris from corn harvesters to plywood wings, Nash Kelvinator from refrigerators to variable-pitch propellers.

The American Packard Motorcar Company were already under way making the Merlin engine to Rolls-Royce design and de Havilland Toronto soon became a big "customer" of theirs.

Australia.

Our Australian Company started building Tiger Moths at the end of 1938. They had engineers training at Hatfield well before that, and directly war broke out their Tiger programme was greatly enlarged. They received the customary help from Hatfield, took thousands of drawings, hundreds of sets of parts in finished, half-finished and raw state. Some of these were sunk by submarines, but not many. Their production became more and more independent of England for supplies. They have made Tigers by the thousand.

In the first few weeks of war they arranged for the Tiger Moth engine, the de Havilland Gipsy Major, to be built in Australia by General Motors (Holdens), Ltd. All the drawings for the 700-odd components had gone out previously from Stag Lane but every measurement and tolerance had to be converted from the metric to the inch system. Engineers took out masses of technical information and production technique—much of this in their heads—and goodwill as well to lubricate the machinery. Everything was made in Australia except magnetos, carburettors and ball bearings, the first engine passed its tests in August, 1940, and soon production was in full swing.


AUSTRALIA

Then the Australian Air Force needed a navigational trainer like the Dominie but did not want to have to import the

engines. Again the home company's print room had to get to work—this time on the thousands of drawings of the Dragon, a 1932 transport design admirably suited to the job, and we sent a lot of original tools from store as well as supplies of bar, forgings, castings and tube. The Australian-built Gipsy Majors went into the machine satisfactorily and it was an all-round success.

Directly the Japs abandoned their lie and attacked Pearl Harbour on December 7, 1941, our Australian Company plumped for building Mosquitoes. From England we repeated the liaison we had organised to the Canadian Company, but at four times the distance. The Australian project started and has so far run about nine months after the Canadian. This experience, which would never have been attempted in the cautious days of peace, is having a tremendously strengthening and maturing influence upon our two main Dominion Companies.

In 1939–40, foreseeing the need, our Australian Company, with full help from Stag Lane, had started up an entirely new division for the manufacture of variable-pitch propellers. This is the only factory of its kind in the Southern Hemisphere, strategically of the utmost value in the war with Japan though initiated two years before we knew which way the Jap would jump. It has grown with all possible speed and now constitutes one of the major steps towards Australasian self-sufficiency in aircraft supply.

New Zealand :

Our New Zealand Company is the youngest of them all, formed early in 1939 when the Air Ministry was urgently preparing for war. The purpose was to build Tiger Moths for New Zealand Air Force training and to service these and other aircraft. Previously an agent had looked after our New Zealand interests. Out went the thousands of drawings, the administrative staff, the supplies, first of

parts and later just raw materials. Up went the factory and out poured the straightforawrd little Tiger Moths. That production, and other work, has continued steadily since.

India.

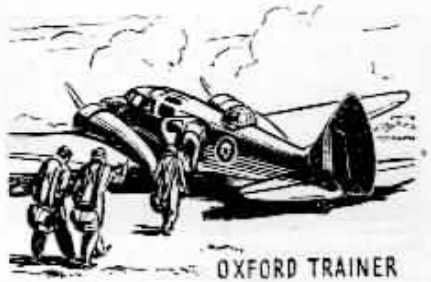
Our Indian branch does not build complete aircraft but quickly developed the making of components when the need arose and so is contributing usefully to the Indian effort. Its part will gather importance when the drive eastward begins.

Africa.

Our South African and Rhodesian companies, both engaged in aircraft servicing and flying instruction, were taken over by the authorities when the war began, ready-made units of expert men that were usefully absorbed into the air plans of these Dominions.

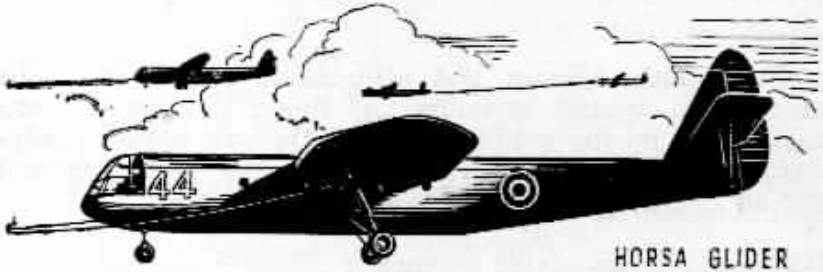
Airspeed—an associated company :

To round off the de Havilland interests in aircraft manufacture we must name Airspeed Ltd., a well-established designing and producing company with its pre-war centre at Portsmouth and wooden commercial aircraft as its main interest. It became an associated de Havilland company in 1940 and so is part of the family. The Airspeed Oxford is the principal twin-engine trainer of the British and Empire Air Forces and has been needed in far greater numbers than any one factory could produce. The Airspeed Horsa glider, designed early in the war when its use in numbers for offensive action appeared more in the nature of a dream, has proved an equally sure success. Both these craft,



OXFORD TRAINER

therefore, are made by the thousand by Airspeeds, by shadow factories and by other industrial companies, with networks of sub-contractors serving them. Our own Aircraft Division made hundreds of Airspeed Oxfords early in the war and that work (along with Tiger Moth and Dominie manufacture) was only pushed out of our shops to make room for the Mosquito.



HORSA GLIDER

AIRCRAFT REPAIR AND OVERHAUL

We have so far reviewed our aircraft production responsibilities, digressing a little onto engines and propellers only in order to complete, while we were at it, the picture of our Australian activities. We will now explain our aircraft servicing organisation (home and overseas) before dealing with our other main production and repair interests—engines and propellers.

The Air Ministry and M.A.P. have a wise system of appointing the parent company of each product to be to a large degree responsible for its servicing and repair, to work out maintenance methods and organise facilities in conjunction with the Royal Air Force.

Mosquito :

Thus it was we in the early days who weighed up the crash expectations, repair capacity and spares needs for the Mosquito in accordance with the aircraft delivery programme and operational outlook, and it was we who located premises and organised the first repair bases.

The centre of this great task, and the first of the bases, is our own Mosquito Repair Organisation. Instead of enlarging this to an unwieldy size and so having all our sitting Mosquitoes in one basket we sought out other engineering facilities, partly industrial and partly within the R.A.F., and developed a dispersed repair organisation. All seriously damaged Mosquitoes are notified to us and apportioned with our concurrence to our own or

MOSQUITO REPAIR

the other depots to repair. We guide the other depots on all repair methods and equipment. We send engineers with mobile workshops to mend aircraft where they crash. We have liaison engineers attached to the R.A.F., Dominion, American, Polish and other squadrons in the field, many at home, others overseas as far away as Burma, who look after their maintenance problems. They are kept up to date with technical bulletins and frequent visits home. We fly engineers to the squadrons to advise on servicing and repairs and to design repair schemes on the spot. We run a school to teach R.A.F. and other engineers how to maintain Mosquitoes and get the best out of them.

Our Canadian, Australian and Indian Companies assist the Service units in their own territories in similar fashion, and their effort will grow as the Pacific war warms up.

Dominie, Tiger Moth and other D.H. Types :

We have corresponding responsibilities with regard to Dominie, Tiger Moth and miscellaneous D.H. aircraft types, though they are implemented differently in different parts of the world. In the first weeks of the war we found and organised an aerodrome and then other premises (previously woollen mills and glove factories) into an Aircraft Repair Group, in Oxfordshire, which became the central repair base for all D.H. types except the Mosquito.

D.H. AIRCRAFT REPAIR

For standard machines like Tiger Moths and Dominies a lot of the actual work is done at R.A.F. Maintenance Units, and years of practice have made them a matter of routine. All the same, our Service Department exchange

visits, watch the behaviour and overhaul experience of our aircraft, send technical bulletins, analyse reports from home and overseas units, keep an eye on spares provisioning. We send out working parties for special repairs, and have flown parties as far as North Africa and Iceland on urgent assignments.

Our Canadian, Australian, New Zealand and Indian companies service the user on much the same basis, each manufacturing all or some of the parts required as spares for these unwarlike but necessary and prolific aeroplanes.

It must be remembered that commercial air transport operators in Britain, Canada, South America, free European countries, Africa, Asia and Australasia continue to need our servicing aids and spares supplies to maintain their regular flying through the war years, which in most cases is necessary to the Allied war effort, so that we still maintain some non-military contacts. Mosquito " air liners " of British Airways are a case in point, and " civilised " Dominies have been supplied to home operators, to the Middle East, to Rhodesia, even to Iceland, all for public transport.

Our New Zealand Company has made an additional speciality of servicing Airspeed Oxford trainers, and making major components for them.

Hurricane and Spitfire :

In the bad days of 1940 we and other firms were asked to help the R.A.F. to maintain fighting strength on their pitifully small stocks of aircraft. We took on the repair of Hurricanes, transferred the job later to our Oxfordshire base, developed it to considerable proportions, were asked to double the work by taking on Spitfires as well, and agreed. The

SPITFIRE REPAIR

Hurricane work naturally tailed off as the type obsolesced. The Spitfire repairs remain high in priority.

Engine and propeller servicing will be dealt with under their respective chapters.

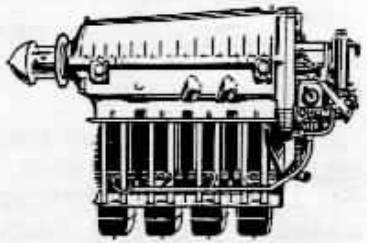
ENGINE PRODUCTION

How our Engine Division began as a small department in 1927 and steadily grew up is described in the historical chapter. We now have a separate engine company. On the production side our first responsibility, from the start of R.A.F. expansion in 1936 and earlier, has been to provide the power unit behind which every pilot in the R.A.F. learned to fly. Stag Lane tradition comes in here—that curious mixture of engineering exactitude, London pride and home-of-the-old-firm humour that clings about the portals and capstans of the historic place.

The inborn confidence of the youngsters entering the Air Force could never be truly nurtured through their training and on to the careers of combat flying in fast aircraft if they or their instructors ever harboured the slightest misgiving about the quality and reliability of the engine on which their young lives depend in these impressionable months when they are learning to fly. That being so, it is something to have gained the faith of the authorities from the earliest days of our engine business, and to have held it right through the phenomenal years when virtually the cream of British manhood has taken wings. Practically every one of these men took his lessons and flew himself off solo and did his first cross-country and his first aerobatics with one hand at the throttle of a Gipsy Major engine made by the Stag Lane team, or perhaps

GIPSY ENGINES

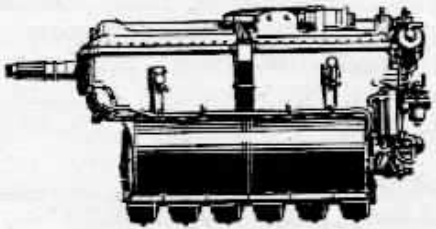
by Australian workers with a Stag Lane element among them. The affection of these legions for the Gipsy engine is unanimous to a man.



GIPSY MAJOR ENGINE

Tens of thousands of Gipsy Majors have been made. By the time this is printed their official overhaul period will probably have been extended to 1,500 hours, equivalent to six flights round the Equator.

The only other Gipsy in continuous production through the war has been the Gipsy Six or Gipsyqueen in its two main versions, for fixed-pitch and variable-pitch propellers. These are wanted for Dominies and Proctors, both navigational trainers. Gipsies of the present range are too small for operational aircraft except that the little Auster III artillery spotter purrs about the battle fronts in contented confidence powered by the Gipsy Major.



GIPSY SIX II. ENGINE

Much engine production can be accomplished by an organisation of quite moderate size, so that we have never had to develop a shadow production of Gipsies. Dispersal and the subcontracting of detail fabrication have looked after the enemy-action risk.

On the experimental and development side we have some interesting work in hand with which many members of the organisation are familiar. The new version of the supercharged Gipsyqueen, although somewhat publicised of late, is not the only novelty. The work occupies a number of designing, machining and assembling departments, ground and flight testing units and laboratories, all wisely dispersed.

ENGINE REPAIR AND OVERHAUL

Gipsy Engines :

Even at a thousand hours between overhauls (and that is what Gipsy Majors have been *averaging*) a Commonwealth Air Training Plan that runs into millions of hours calls for a broadly conceived overhaul organisation. Methods, however, must have strict uniformity, inspection standards must be universally rigid, statistics of wear and behaviour must be gathered and collated. Our Engine Service Department and Inspection Department in England already had a sound working understanding with and technical supervision of de Havilland servicing in Australia, Canada, India, South Africa and New Zealand, carefully cultivated over the peacetime years. It remained to expand the system, preserving the methods. We secured first of all the services of a number of engineering concerns in England, which with a feminine touch we have for five years been referring to as " the daughter firms." We loaned them Gipsy experts, showed them our routine, our handling gear, taught them our dimensional tolerances and condition limits, the little signs by which we know the state of a Gipsy stripped down after 120 million turns of the crankshaft.

We looked into the training programme, worked out the graph of the overhauling capacity needed, organised the parcelling out of the engines pouring in from the schools, provisioned the spares to suit, fixed up for periodical visits to and from the parent D.H. repair department. In practice the technical control has proved satisfactory and it has been achieved without so much spreading of D.H. technicians as might have been expected. This system has worked well. We are the hub of it.


GIPSY ENGINE REPAIR

Merlin Engines :

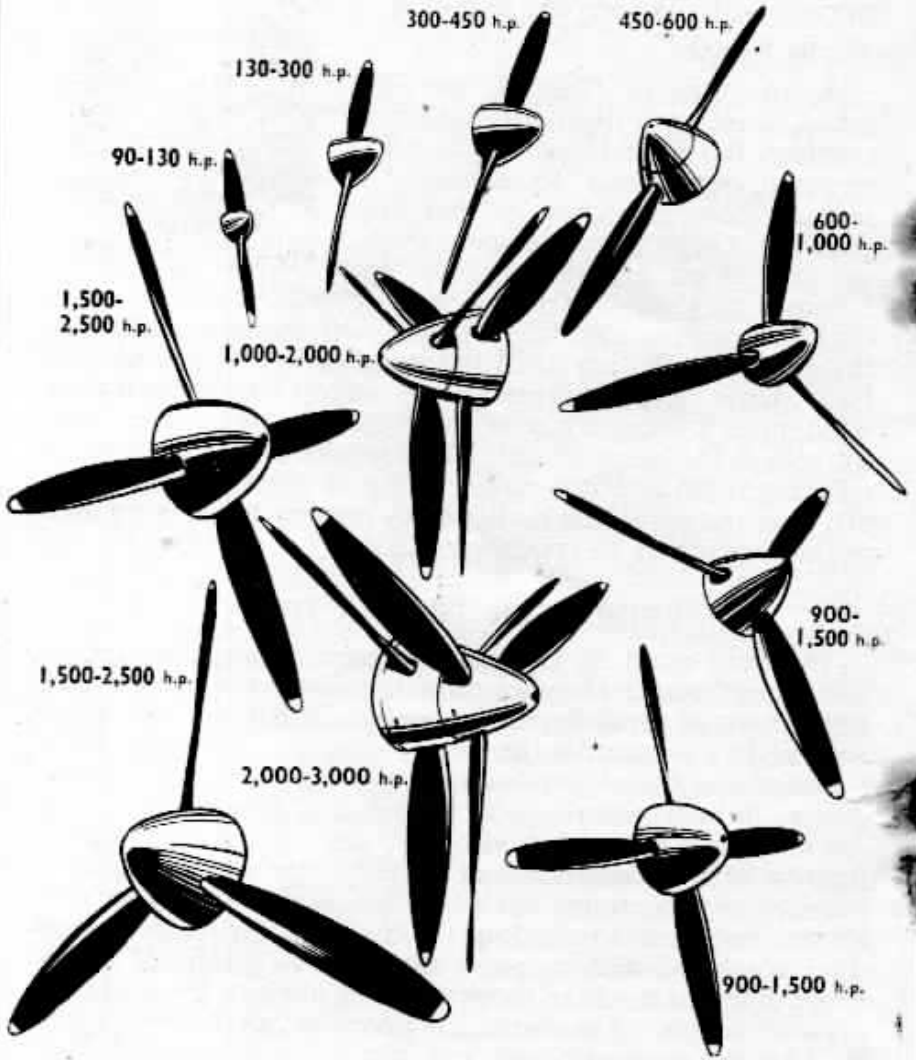

ROLLS ROYCE MERLIN REPAIR

At the time of Dunkirk we were asked to set up a depot to repair and overhaul the Rolls-Royce engines that powered our fighter squadrons. It seemed more important at that time than any Gipsy overhaul scheme and we took it on immediately. So the Summer of 1940 saw us overhauling both Hurricanes and their engines—the prime material for the defence of Britain when she stood alone. We developed this Merlin Repair Department, under the Rolls-Royce wing, until it became one of the biggest in the country, and we believe the most efficient. Its capacity has grown out of all recognition and it is now a group of dispersed premises. We have outgrown the drain of key men by training up and promoting others to take their places.

PROPELLER PRODUCTION

The third main de Havilland interest is propeller design and manufacture. How we came to pioneer the commercial production of variable-pitch propellers in Britain from 1934 onward is a matter for the history chapter. Although 1939 found us the biggest producers in the world, with a shadow factory in Lancashire built as the result of timely precaution on the part of the Air Ministry, our output was but a fraction of what was required of us for the war programme —and that programme has been increased in stages so that its first issue looks ridiculous to-day. Our early expansions were combined with war-risk dispersal. Groups of blade shops and hub machine shops took the place of the compact pre-war set-up. The Northern Propeller Division (owned by M.A.P., planned, built and run by us) expanded and

THE RANGE OF DE HAVILLAND PROPELLERS



scattered in the same way. Laundry premises, cotton mills, bedding factories were requisitioned, all turned into production shops under our own management. Spreading of the supervision staff and key craftsmen out its unavoidable strain on the whole organisation.

Later programme expansions required us to invoke the aid of other engineering concerns of high repute who were not so busy as we, and a situation arose comparable to that in Mosquito production.

This great network of roaring machine shops, blade shaping and scurfing shops, processing and assembly departments, producing tens of thousands of propellers and constant-speed units of all shapes and sizes for engines from the 200 h.p. Gipsyqueen to the 2,200 h.p. Napier Sabre, and bigger, is held in balanced output from our production control office, itself sensitive to the changing requirements which are imposed upon M.A.P. by the development race of the individual British and American aircraft constructors.

Fortunate it is that the bulk of our delivery is of the same basic design as that pouring out from the Hamilton plants in U.S.A. Indeed, there is a considerable interchangeability which permits, for instance, British blades to go into certain American hubs, and a general uniformity of maintenance routine also results.

We make something like a half of all the propellers of the R.A.F. It is nothing for three thousand de Havilland propellers to be over Germany at one time, pulling along twenty thousand tons of British bomber craft with a load of over two thousand tons of high explosive.

Our propeller design department keeps pace

with continuous improvement in the aircraft by new blade shapes, more compact hubs, by using more blades and by double propellers with counter rotation. Every new aircraft development means a new propeller installation, and it may be of small or large size, for radial or in-line engine, for fighter or bomber speed—the whole field is served. The onerous responsibility of maintaining a lead over the enemy is thus borne in part by the propeller designers of this company.

The very first constant-speed propellers to go into combat service were propellers of de Havilland make, and they took part in the earliest bombing attacks made by the Royal Air Force almost immediately war was declared in September, 1939. In the struggle for superior aircraft performance which our designers and enemy technicians have unremittingly waged the propeller has played a most important part. An outstanding problem has been that of converting efficiently into thrust the powers which the great modern engines deliver, and at the altitudes at which they are required to operate. There is cause for satisfaction in the fact that our propeller designers have kept ahead all along, not only in aerodynamic efficiency but also in mechanical serviceability and repairability. Our propellers are unsurpassed in the world of aeronautics.

The conversion of 1,050 Hurricanes and Spitfires—the main body of our home-defence squadrons—from two-pitch to constant-speed propeller actuation, which we accomplished in 52 days before the Battle of Britain, and which may well have affected its issue, is an epic that has been told elsewhere.

PROPELLER REPAIR AND OVERHAUL

The ease of repair of the ductile aluminium-alloy blade had been exploited before the war. The blades naturally take most of the shock in any crash. As they can be depended upon to bend back gracefully (incidentally acting as

skis and saving many an aircraft and crew from destruction), it follows that the strain imparted to the hub mechanism and the engine is limited. We quickly developed the technique of straightening and repolishing the blades—with heat treatment in bad cases—and this has been literally a godsend to the propeller supply situation throughout the war. Hub and constant-speed-unit overhauls and repairs became a straight routine as well.

Almost overnight in the Summer of 1940 many hundreds of propellers poured into our premises for repair, and our programme for expanding the repair capacity was at once stepped up.

It is a long and interesting story, the outcome of which is that we now operate a dispersed system of civil repair units and supervise the methods, work flow and spares provisioning of a number of other units, which together have such a huge capacity that at times the return of repaired propellers into service has exceeded the total output of new propellers.

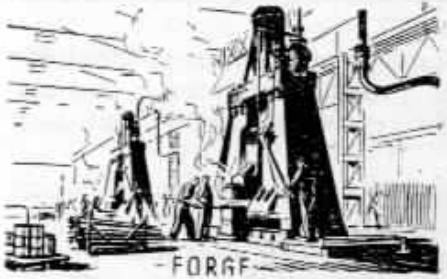
In the first two years of war it was found that 80 per cent. of the blades in damaged de Havilland propellers could be repaired; even now—despite higher landing speeds, abrasive runways and other bad influences—the proportion is 66 per cent.

Our Propeller Service Department keeps a close eye on healthy as well as injured propellers, has engineers all over the country and in France with the R.A.F. and makes periodical tours of squadrons and repair units overseas. Our installation engineers also look after the propeller problems of the aircraft and engine builders.

PROPELLER REPAIR

THE DE HAVILLAND FORGE

In February, 1942, we formed a separate company, The de Havilland Forge, Ltd., to increase the supply of light-alloy forgings for propeller blades and hubs and for other needs. Collaborating closely with the Government and with other industrialists we planned, built and organised a production unit in this heavy industry which is so different from and yet so essential to aircraft manufacture. Another drain of key executives was faced and survived, the project succeeded and now ten of thousands of propeller blade and other forgings flow to our fabricating shops from our own forge hammers.


FORGE


COMPONENT PRODUCTION

COMPONENT MANUFACTURE

Specialised demands in high-performance aeroplanes, and the convenience of directly controlling manufacture, have led our company to undertake the design and production of certain components which aircraft builders in the general way buy ready-made. For example, the undercarriage units and hydraulic jacks on the Mosquito are our own design and manufacture. The demands for special components must vary between different aircraft that we may be engaged upon but are likely to persist in one form or another, and we are for that reason associated with a company called Hearle-Whitley Engineering, Ltd., which concentrates on component manufacture.

RESEARCH

A separate mention must be made of research work that is undertaken by de Havilland laboratories extending beyond the normal scope of our developments in aircraft and propulsion-unit design. Here we are in a little difficulty to be explicit on account of the censor but a passing reference may be made to the search for new materials and structure forms, and we can be a trifle less secretive about our advanced technique in the electro-dynamical measurement of vibration, which has served the aircraft industry in general and other industries as well, so that the work has taken on a national significance and application. It was because propellers were sometimes blamed for aircraft vibrations which arose from resonance and could be prevented elsewhere in the airframe that this exact technique was evolved, entailing the deliberate excitation of vibrations to desired frequencies and the photographic recording of local and general vibrations, not only of structures and mechanisms on the ground but even of aircraft in flight, trains at speed, power stations, ships at sea, and so forth. The de Havilland research unit has contributed usefully to the whole study.


ELECTRO-DYNAMICAL RESEARCH

FLYING TRAINING

Besides all our main activities on the manufacturing side we have always been closely concerned in flying training, regarding not only the design of trainer aircraft but also the fine points of training technique as our very special interest. We started the first school of flying for the R.A.F. Reserve at Stag Lane in 1923. With the expansion in 1936 onward we opened a second school at Maidenhead, later

taken over for another purpose. Hundreds of schools were later opened by the authorities to meet the Empire programme, with the Tiger Moth as their primary aircraft, but to this day the original school, No. 1 Elementary Flying Training School of the R.A.F., is operated by the de Havilland Company, a military establishment under civil administration.

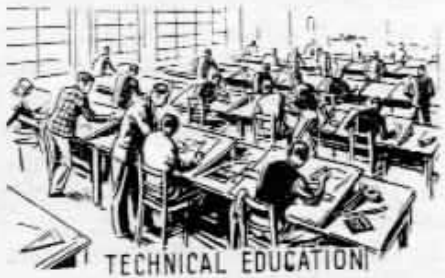
Our overseas companies likewise have always been close to the trianing side, in some cases running their own schools, in others associated with local schools, but always maintaining the recognised British standards in method and equipment. This is perhaps the prime reason why it is generally felt that de Havillands of all aircraft firms in the world should be able to create the next generation of trainer aeroplanes when the Tiger Moth is honourably pensioned off.

FLYING TRAINING

TECHNICAL EDUCATION

The national and governmental consciousness is awakening to the fact that technical education in our industry must be developed if the British are to hold a high place in world trade and culture after the present trouble is over. This new public tendency supports an opinion to which we gave voice in 1928 when we inaugurated the de Havilland Aeronautical Training School. A scheme of apprenticeship also was started in those early years. Both have developed and latterly they have become merged, with a system of scholarships that seeks to open the way for any young D.H. employee to receive the full technical education necessary to qualify him as an aeronautical engineer, specialising in

one branch or the other according to his aptitude. To provide the opportunity to learn is, we feel, the way to produce strength, leadership and a satisfying sense of participation in this industry of ours that has to play such a big part in the relationships of the world from now onward. It is a policy that takes patient and detailed working to fulfil, but we have given ourselves a good start and our principles and groundwork are all well established.



TECHNICAL EDUCATION

The organisation of the training scheme has been given detailed attention in other literature and more will be heard of it.

* * *

In addition to all the projects and activities outlined in this little book much that is of great interest and significance has been left unmentioned for reasons of secrecy. Our policy has been to further the main cause to the limit of our capacity, regardless of every other consideration. The expansion which this has brought about has been rendered possible by the experience and character of the supervision staff and by the ability and conscientiousness forthcoming from among our people in all the numerous branches of our Empire-wide enterprise.

THE BACKGROUND

The de Havilland Aircraft Co., Ltd., came into being on September 25, 1920. Fourteen men and one woman still with us in 1944 were among the fifty or sixty individuals who 24 years previously moved into a couple of sheds and a wooden office hut which formed the original home of the company on Stag Lane Aerodrome. Edgware. That old hut, brought from Stag Lane a few years ago, is still in use as an office building in the Aircraft Division.

The men who got the company going in a humble way in 1920 have guided its development throughout the subsequent years and are its active leaders to-day. They are Sir Geoffrey de Havilland, Mr. F. T. Hearle, Mr. C. C. Walker, Mr. W. E. Nixon and Mr. F. E. N. St. Barbe. Mr. A. S. Butler, a keen airman, joined the company as a director in 1921, and has been Chairman since 1922.

At the end of each year since our twentieth birthday in 1940 a gathering has been held of those who have served the company for an unbroken spell of twenty years. Many of these veterans had been working together before 1920 at the Hendon factory of the Aircraft Manufacturing Co., Ltd., of which Sir Geoffrey (then Captain de Havilland) was Chief Designer during the last war. In all we have with us to-day 32 twenty-year employees who were previously at "Airco."

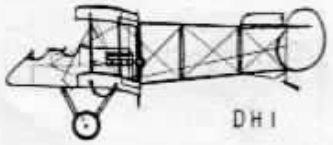
Mr. Hearle joined the Captain very much earlier still, in 1908, and helped to build his first aeroplane. This historic machine had a four-cylinder, horizontally-opposed, water-cooled engine of de Havilland's own design, driving through bevel gearing two propellers of which the aluminium blades were

STAG LANE 1920

THE FIRST MACHINE

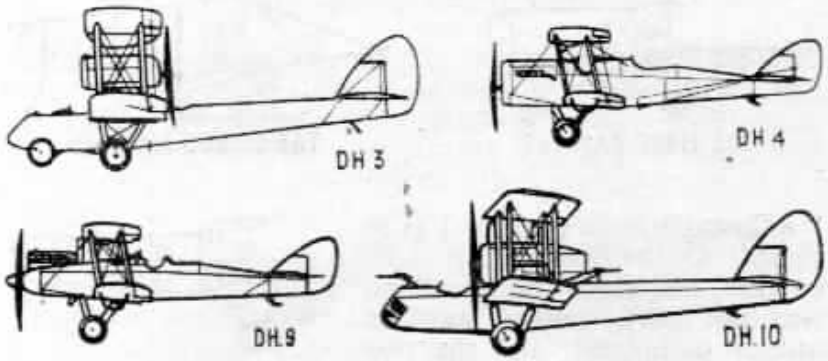
THE SECOND MACHINE

" adjustable as to pitch and as to twist." On its first flight it came to grief, but luckily de Havilland was not hurt, neither was his ardour dampened, and the two men at once set about constructing an improved aeroplane on which de Havilland successfully taught himself to fly.



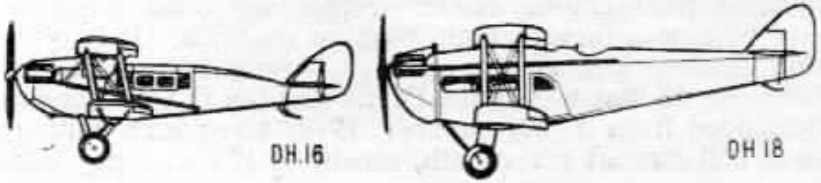
DH I

When their little money was nearly all gone and it looked like a return to motor-car engineering, they both were offered positions at the Government Balloon Factory at Farnborough, and the " de Havilland No. 2 " was purchased as well. That was in 1910. At Farnborough de Havilland was mainly responsible for the design of a military canard-type pusher biplane, and of the better-known B.E. series of tractor biplanes for the Army. Early in 1914 he joined Mr. Holt Thomas's firm, the Aircraft Manufacturing Co., Ltd., at Hendon, as Chief Designer. Before war broke out with Germany in August that year he was well on with the design of the D.H.1 two-seat pusher biplane fighter, and he followed it with the single-seat D.H.2, a twin-engined D.H.3 bomber prototype and, in August, 1916, the tractor biplane (D.H.4) which, first appearing as a bomber with fighter performance (as did the Mosquito 24 years later), was developed also for fighting, photographic reconnaissance and other functions and became a famous multi-purpose machine. It is often said that no aircraft did so much towards the defeat of Germany in that war as the D.H.4 and the D.H.9 that was developed from it. By October, 1918, Airco were building over 250 aircraft per month, mostly D.H.9's. They were



just going on to the D.H.10, developed from the D.H.3 for the purpose of bombing German industries, when the war came to an end. A third of the total Allied air forces (and 95 per cent. of all the American production for that war) were aircraft of de Havilland design.

Official cross-Channel air services, and later public air lines, were run with D.H.4's and 4A's and 16's (adaptations of the war-time D.H.4's and 9's) but they were lean times for aviation and in 1920 when Capt. de Havilland and Mr. Walker were designing the D.H.18, an 8-seater cabin machine which was the first proper attempt at a transport aeroplane, the Airco concern decided to close down their Aviation Department. Unable to believe that there could be no future in civil flying, Capt. de Havilland and his colleagues managed to form a little company on their own, again with Mr. Holt Thomas's help, and from that our world-wide organisation has grown.



In the office hut at Stag Lane the " Design Department " (comprising Capt. de Havilland and Mr. Walker) occupied a small room on the left of the entrance. On the right was a little office from which Mr. Hearle controlled production —though the only job on hand at first was an order from the Ministry to finish off a couple of D.H.18's that had been started by Airco. Next to Mr. Hearle's office was a small room which Mr. St. Barbe, the Business Manager, shared with Mr. Nixon, the Secretary.

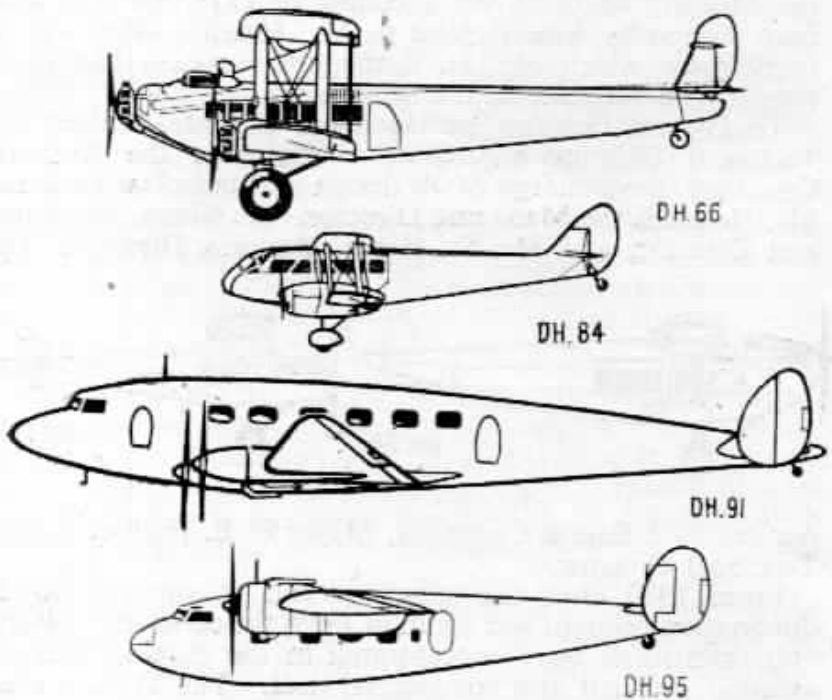
To-day, Sir Geoffrey de Havilland and Mr. Walker, as Technical Director and Chief Engineer of the Aircraft Company, have charge of all design and technical matters, Mr. Hearle is the Managing Director, Mr. Nixon, Secretary and Director, and Mr. St. Barbe, Business Director. Of

our separate Engine Company, Major F. B. Halford is the Technical Director.

From 1920 until Germany's second attempt at world domination brought war again in 1939, the company's effort and enthusiasm were concentrated in the development of aviation for civil and commercial uses. The D.H.18 was followed by a long cavalcade of transports through the nineteen-twenties and thirties, notably the D.H.34 for the cross-Channel services of 1922, the H.D.50 of two years later, famed for its transport service in Australia, the three-engined Hercules (D.H.66) of 1926 for Imperial Airways, the economical Dragon series starting with the D.H.84 in 1932, the modern 22-passenger four-engined Albatross (D.H.91) of 1938, and the all-metal 12—20-passenger

Flamingo (D.H.95), which was ready for world markets when the war put a stop to its career.

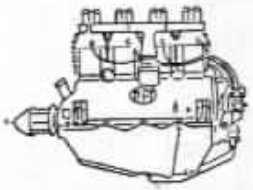
The other strong line of D.H. development was in training and touring aeroplanes. From the early nineteen-twenties our company pioneered the development of reliable, safe



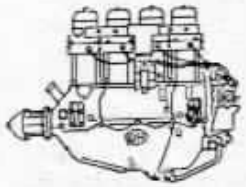
trainers whose design, as it were, crystallised in 1925 in the Moth. The name "Moth" became a household word throughout the world and many variations of the Moth theme (some trainers, others cabin touring types) were built in small and large numbers. The Tiger Moth, now numbered by the ten thousand, has been the most famous, so far.

The first Moths had Cirrus engines, designed by Major Frank Halford in collaboration with Capt. de Havilland, and in 1927, partly owing to the difficulty of getting deliveries, we began to feel that we should develop our own range of engines. The association with Major Halford was then established on a more serious footing and he created the 100 h.p. four-cylinder Gipsy One, the prototype of which, developing 120 h.p., created a stir by establishing a world speed record for light aeroplanes (187 m.p.h.) in the little Tiger Moth racing monoplane (D.H.71, not to be confused with the D.H.82 trainer) piloted by Hubert Broad. One of the early Gipsy Ones did 600 hours' flying in a Moth under Air Ministry seal. When overhauled it called for only £7 2s. 11d. worth of replacements. Durability and reliability were thus the essence of the Gipsy designs from the outset. The Gipsy One started its career with an overhaul period of no less than 450 hours. From 1927 onward (and earlier if we include the Cirrus) Major Halford has designed every de Havilland engine, our largest in the series so far being the 525 h.p. Gipsy Twelve. Tens of thousands of Gipsies have been made and used the world over. They are noted for long life and reliability without equal in the world of aeronautics. Our engine business was budded off as a separate company in February, 1944.

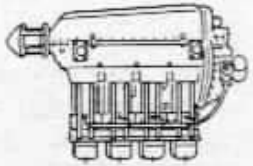
Another landmark in our history was the England–Australia race of 1934. The British Government policy throughout the inter-war period was one of disarmament and appeasement, and partly for this reason artificial aids and subsidies to civil aviation (which might be suspected of concealed militarism) were kept to the minimum, so that our Empire did not boast any fast transport aircraft at the time when this race was announced. It looked as if the honours would go to America, but de Havillands, feeling that some financial risk in producing a special British racer



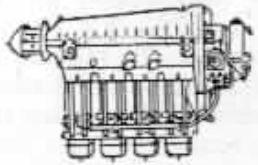
GIPSY ONE
1927



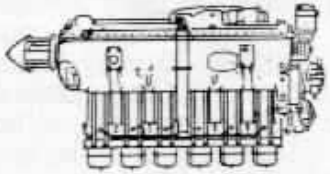
GIPSY TWO
1929



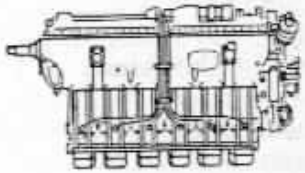
GIPSY THREE
1930



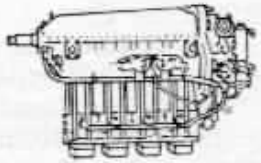
GIPSY MAJOR
1932



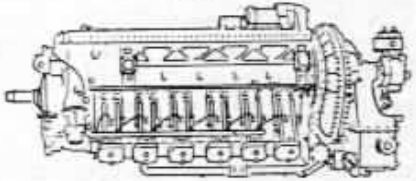
GIPSY SIX
1934



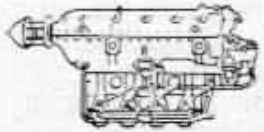
GIPSY SIX II
1935



GIPSY MAJOR II
1936



GIPSY TWELVE
1937



GIPSY MINOR
1938

for this event was justifiable, created the Comet (D.H.88) with two Gipsy Six 200 h.p. engines and a speed of about 225 m.p.h. By flying from England to Australia in 71 hours this graceful two-seat monoplane won the race against big American liners traversing their regular route in comfort with full navigational aids.

The Comet was the first British aeroplane designed around the combination of variable-pitch propellers, wing flaps and retractable undercarriage, and it was in designing it that we became convinced of the enormous future for variable-pitch propellers. Mr. Hearle went to America and at once secured for us the licence for the British Empire for the only tried and successful v.p. propeller then in existence, namely, the Hamilton. It is a significant memory that there was thought to be "no military use" for variable-pitch propellers at that time ! Despite such opinions they soon became standard equipment for almost all aeroplanes except little trainers and touring machines, and, thanks to this foresight, Britain entered the war five years later with a range of thoroughly sound variable-pitch propellers already in enormous production. Indeed, de Havillands had by then become the biggest manufacturers of v.p. propellers in the world, a very fortunate thing for democracy.

An outstanding aspect of D.H. history has been our development of overseas trade and manufacture. In 1927 we formed a small branch company in Australia, now a large manufacturing concern building our Mosquito and other aircraft and our propellers for the war with Japan. In 1928 we started a company in Canada, now a great establishment devoted to the production of Mosquitoes. In 1929 our branch in India was opened ; a small establishment in pre-war days, it is now enlarged and is engaged in overhaul and repair work and component manufacture. In 1930 and

DH.88

1935 we inaugurated de Havilland companies in South Africa and Rhodesia; mainly distributing and servicing concerns, they have been taken over by the authorities to serve the war effort. Early in 1939, specifically to serve the Empire Air Training Scheme, we put up a branch factory in New Zealand to build Tiger Moths.

From the earliest years of our company we have also taken care to appoint good agents for distributing and servicing our products everywhere they were marketed—and that has meant most countries. We became very proud of our world-wide servicing and representation, which was certainly the first organisation of its kind in aviation history. All this overseas development, and particularly our chain of Dominion companies, which provided a strategically dispersed world production system in readiness to put at the disposal of the Empire when war came, was due largely to the foresight and energy of Mr. St. Barbe.

* * *

It is difficult to imagine with any feeling of sureness what sort of England and what sort of world we shall have when the German and Japanese desires for domination have been quenched. We know that the British Empire and Commonwealth will stand in great need of air communications. And we know that in order to maintain and improve our standards of living Great Britain must cultivate new exports because many of the manufactures which we used to market abroad will henceforth be made in the consuming countries.

In de Havillands we have to follow our calling with all diligence and vision, relying upon the enthusiasm that has always been a feature of private enterprise, and knowing that no industry has a more responsible part to play than our own in the shaping of the future.

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SOME FACTS AND FIGURES CONCERNING THE BRITISH WAR EFFORT

MOST of us who have ever taken part in athletic sports will remember that one of the earliest bits of advice we had was that we should never look back until the race is won. As, at the time these notes are being written, the war with Germany is not yet over it may seem to be out of keeping with that advice to spend any time in contemplating past achievements. But there is this justification in that the events of Industrial life, unlike those at a well-managed sports meeting, have a way of overlapping; and we generally find ourselves struggling with the early difficulties of new tasks before we have quite overcome those of the last.

These notes, therefore, are intended as a reminder as to the part our Country has played throughout the War and are recalled not in any vainglorious spirit but rather that, having triumphed over grave dangers in the past years, we may as a Nation look forward with sober confidence to overcoming with equal determination whatsoever difficulties may confront us in the future.

POINT ONE. The leaders of the German people have been obligingly frank about their ambition to subjugate the whole world and impose on it the perpetual rule of a German "master-race"; but they never designed to fight all who opposed them at the

same time. What they hoped was that they might conquer one country after another adding to their strength and resources from every fresh country overrun until the time arrived when no country or combination of countries was left strong enough to withstand their accumulated might. If every country had awaited its turn to be attacked without any effort to go to the aid of others there is much in what has since happened to suggest that Germany might have been successful in her ambitions.

We may, therefore, recall with just pride that the only countries now allied who entered the war in any effective sense without first waiting to be attacked were the British Empire and France.

POINT TWO. At the time of the downfall of France in June, 1940, and the entry into the war of Italy the odds against us were roughly comparable to the population figures of the respective contestants which were (to the nearest million) as follows :—

Germany and Austria	77	millions
Italy	45	,,
Total	122	,,
Great Britain and Northern Ireland	48	millions
Self-Governing Dominions	22	,,
Total	70	,,

At that time Russia had a treaty of non-aggression with Germany. The United States were willing to

supply armaments to us on a cash and carry basis, but the rate of sinkings in the Atlantic was high, and we might have been excused for thinking that the Dominions of the British Empire were a long way off.

Germany and Italy had been preparing for war for years and had lately acquired control of the agricultural and industrial resources of Czechoslovakia, Poland, Denmark, Norway, Holland, Belgium and France, and they had the friendly support of Hungary and Rumania.

We had lost a large part of our limited armaments in France when the British Army had the experience of a whole country surrendering on each of its flanks.

At this grim stage in our Island history, under the imminent threat of invasion, the decision was made to send to Egypt most of our remaining tank and armoured car strength and large reinforcements for the Navy, Army and Air Force.

In view of the importance, in World strategy, of the control of Egypt and the Suez Canal and the fact that the aid thus sent was barely enough to hold the enemy's attack we have some excuse for believing that the decision to reinforce the British Forces in Egypt was one of the most far-sighted and courageous ever made either in this war or any other.

POINT THREE. The exploits of the British Army should need little advertisement but, as memories are short, let us make sure we do not forget that the advance of the Eighth Army from El Alemein to Tripoli remains, as regards time and distance, a World's Record (1,400 miles in 81 days). In the

course of this advance the Eighth Army inflicted 75,000 casualties on the enemy.

Among a host of other things which we should not forget is that the Battle for Caen and the Falaise Pocket, fought by British and Canadian troops, might with reason be regarded as the Decisive Battle of the War.

POINT FOUR. As some measure of the armed might of the main enemy against which the British Army had to take the field in various parts of the world it is interesting to take as a basis for comparison the experience of our Allies the Russians. The Russian soldier has always been known to fight with devotion and gallantry and competent judges consider Russian generalship to be resourceful and courageous. The standard, therefore, is a high one.

In assessing " form " the respective figures of populations can again be taken as a rough guide and these are :—

Russia	170 millions
Germany and Austria.....	77 millions

Germany was at the time of her onslaught on Russia also at war with the British Empire and had to guard all the occupied territory of Western and Southern Europe against possible attack. Russia had no other enemy of comparable importance. On the face of it it would seem that Russia had rather better than the " even chance " which was the most the British Army ever dared hope for in the early days of the war.

Nevertheless the strength of the German thrust drove the Russians back over territory roughly 700,000 square miles in extent, or more than seven times the size of Great Britain.

POINT FIVE. Throughout the war we have heard much of the shortcomings of the British Armament Industries but not so much of their relative efficiency. Precise comparisons are difficult to compute, particularly so in wartime, but there is reason to believe and, indeed, it has been stated by a high authority that the output per person employed is higher in Great Britain than in any other country at war on either side. As some commentary on this belief here is an extract from " Engineering " of 8th September, 1944 :

> " A survey, recently carried out by the United States Department of Labour, showed, it is officially announced, that the output of British shipyard workers is 25 per cent. greater than that of American shipyard workers. Vessels of the ' Liberty ' type totalling 272, were delivered, at an average of 437,000 manhours per vessel. The equivalent figure in a British shipyard would be 340,000 manhours, and they would cover certain work which is, in the United States, sub-contracted. The average cost of American - built ' Liberty ' ships is £39 a ton deadweight—80 per cent. higher than that of an equivalent British vessel."

This illustration is chosen because it is supplied by an authority which has no reason to be biassed in our favour and deals with a British industry which has

received scant mention from the ordinary Press of this country in marked contrast to the limelight cast on the more spectacular methods used in America.

In this highly mechanised age output efficiency is the result of a joint effort for which, as well as the man on the machine, the planning engineer, the draughtsman, the progress clerk, the typist, the stores labourer, and a thousand other workers all should have their share of credit.

POINT SIX. No great national effort is ever likely to be successful unless it is shared by all parties and all classes, and unless the greatest sacrifices are made by those best able to bear them. In Britain the tax on big incomes is higher than in any other country either of our Allies or our enemise. It would be too much to say, even now, that the incomes of all British citizens after deduction of tax are ideally in accordance with either their worth or their needs ; but in so far as the equalisation of incomes is a step towards greater national unity and social justice the British taxation system has gone further than that of any other country. If the result is still bad it is, at any rate, the best in the world.

The effects of the present rates of taxation are not very widely appreciated so there is set out below a table of incomes ranging from a labourer's level to that of a multi-millionaire. Against each rate of income there is shown the amount the recipient has left to spend after tax has been deducted. In every case the rates of tax have been calculated as for a married man without dependents :—

Annual Income (Gross) £	Nett Amount Left after Deduction of Tax
250 a year	£ 222 7 6 a year
500 ,,	£ 373 17 6 ,,
1,000 ,,	£ 648 17 6 ,,
5,000 ,,	£2,192 12 6 ,,
10,000 ,,	£3,167 12 6 ,,
20,000 ,,	£3,855 2 6 ,,
50,000 ,,	£4,605 2 6 ,,
100,000 ,,	£5,855 2 6 ,,

The higher incomes, as can be noticed, are taxed at the rate of 19/6 in the £.

There has not been a corresponding increase in the rate of Death Duties during the war ; but this form of taxation has been steadily growing in severity since Death Duties were first instituted a little over fifty years ago and the higher the amount the bigger the rate of tax. At the present time the State takes away from fortunes left to the deceased person's wife, children or others the sums which are shown in the following table :—

Gross Value of Estate £	Amount of Death Duty £	Amount left for inheritors after deduction of Death Duties £
1,000	30	970
10,000	600	9,400
50,000	9,750	40,250
100,000	26,000	74,000
1,000,000	520,000	480,000
2,000,000	1,300,000	700,000

If deaths happen in quick succession in any chain of inheritance a large fortune quickly dwindles away.

POINT SEVEN. Another financial sacrifice made by Great Britain in waging both this war and the last has taken the form of selling the bulk of our Overseas investments to enable us to buy munitions and other necessary supplies from abroad. No other country has willingly made a comparable sacrifice.

It is not always understood how this country came to possess such large investments abroad ; but, in the main, it is due to the fact that Great Britain was the first country to adopt on a large scale those modern methods of manufacture which have enabled us and, later, other countries to raise the general standard of living in such a marked degree. At the end of the Napoleonic Wars in 1815 this country settled down to a manufacturing effort of such a phenomenal extent that we were able not only to support at home a quickly growing population on a gradually improving standard of living but also to send abroad to the new countries which were then being settled the equipment they needed to transform the land from a wilderness to a thriving centre of population. Throughout the Empire and all over the Continent of America, including the United States, there were, and still remain, railways, tramways, dock installations, bridges and manufacturing plants made in the workshops of Britain. In addition, we sent abroad huge exports by way of coal, cotton goods and innumerable other commodities and undertook the greater part of the world's shipping traffic. The value of this effort to the

receiving countries is beyond argument and the signs of it are still there to be seen by those who travel abroad. There is hardly any country in the world where British products cannot be found and the Dominions of the British Empire could not have grown so quickly to nationhood if it had not been for the manufacturing resources of the Old Country.

For nearly a century the value of these goods and services rendered was so much greater in extent than the value of the commodities we received in exchange that it became possible and, indeed, necessary to leave the balance abroad in the forms of loans or investments. We may note in passing that this is the first record in history, in the case of anything remotely resembling an " Empire," where the balance of benefits has moved outwards from the centre instead of inwards.

Authorities differ as to the total value of overseas investments made and even as to the value remaining at the beginning of the last war after a considerable amount of bad debts had been written off. But it is generally agreed that there was £500,000,000 worth of British capital invested in the Argentine Republic alone and £1,000,000,000 in the whole of South America ; so the aggregate figure must, in any case, be of a size that the ordinary citizen cannot easily deal with in imagination.

What would have been the eventual fate of this accumulated wealth if peaceful conditions had prevailed it is impossible to say. All we know is that much of it has been destroyed by enemy action and

that most of the very large remainder has been spent in two wars waged against the enemies of civilization.

It is, perhaps, fortunate for civilization that we had it to spend.

POINT EIGHT. Finally, a few words as to our chronic state of unpreparedness for war whenever we are not actually fighting one.

If ever a Nation had a chance of world domination Britain had it in the Nineteenth Century as our manufacturing resources and Overseas connections were vastly superior to those of any other country. But it happened that world domination was about the last ambition likely to appeal to the National temperament. On the contrary, it was under the friendly protection of Britain that so many countries threw off the yoke of foreign domination or imperialistic exploitation. Italy was one such country who took advantage of our friendship and who has returned the favour in the present struggle by taking up arms against us. Admiral Mahan, the great American Naval Historian, reminded his countrymen long ago that the American "Monroe Doctrine" (which aimed at protecting any country in the American continent from domination by European or other Powers) was only effective because of the existence and the strength of the Royal Navy.

For the greater part of the Century Britain preached and practised a doctrine of Free Trade in goods and free movement both for funds and for populations. In remote parts of the world isolated colonies grew

up to be self-governing Nations. South and Central American countries threw off the yoke of Spain and countries under the British Flag on achieving nationhood remained within the Empire solely because they wanted so to do.

It was one of the most peaceful centuries we had ever known. The Royal Navy was, indeed, much bigger than that of any other country but for ninety-nine years its most extensive operations lay in the suppression of the Arab slave trade.

The British Army, however (and it is only by means of an army that any effective domination of a hostile country can be accomplished) rarely exceeded 250,000 men and so little thought was given to its equipment that troops in the Crimean War were armed very much after the fashion of the Napoleonic Wars in spite of forty years of intensive scientific and mechanical development in Industry.

Until 1914 a fashion of thought had grown in England that an army was analagous to a Police Force, necessary for the protection of citizens proceeding about the world on their lawful occasions against the attacks of frontier bandits and lawless tribesmen, but otherwise rather an expensive nuisance. We grew out of the habit of thinking that civilised nations could seriously contemplate waging war, and use all the resources of modern civilisation in doing so, against other civilised nations. It is true that there were several reminders to the contrary effect. Germany attacked three countries within four years from 1866 to 1870 and about the same time the United States had one

of the bloodiest civil wars in history. But the hope persisted in this country that other countries would grow up and shed these atavistic tendencies; and it would seem that we are still hoping.

It is not a national characteristic we need be ashamed of that Englishmen are always apt to believe, on the slightest excuse, that the World is a very friendly and peaceful sort of place. But the truth should at last be clear that the forces of evil are very powerful and if they are not to triumph they must be fought.

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