

The de Havilland Aeronautical Technical School at Stag Lane and Kingsbury

The de Havilland Aeronautical Technical School was established in 1928. Although overall management of the School and the training of aircraft students was transferred to Hatfield in 1934, engine and propeller students continued to be trained at Stag Lane. During the Second World War the training workshops were moved to Kingsbury Works, where Vanden Plas were engaged in building Tiger Moths and Mosquito wings.

Over the years a number of former students have written their recollections of training. They are presented in this compilation, both as a permanent record and, it is hoped, as a stimulus for others to add their own reminiscences. Some have appeared before, in Pylon or in a Newsletter, and others are new.

The captioned photograph below, looking approximately south-easterly, has been contributed by Geoff Callow. It appeared in the 21st Birthday Issue of Pylon in June 1949 and is reproduced here by kind permission of BAE Systems. The picture on page 3, taken five years later, shows that although much new factory building had taken place, housing was encroaching...



Stag Lane Aerodrome in 1928, the year the School was formed. The Moth had made its first flight three years before, and the foundations of de Havilland's future prosperity were laid.

This compilation is by Roger de Mercado, who hopes to improve upon it and add to it as new contributions are received or old items discovered. Issue 2 has new pages 17 & 18, which include a contribution by Louis Dightmaker, reference to a website with articles by Alan Mann, a photograph of the main gates at Stag Lane taken by John Clemmens and a copy of the WW2 bomb distribution map from Martin Sharp's History of de Havilland. See also our separate article 'Photographs in The Aeroplane magazine June 1947', which has pictures of students.

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Stag Lane Aerodrome

This map of the area, dated 1932 illustrates the location of the Aerodrome. Kingsbury Works was at Kingsbury Green, in the lower right-hand corner of the map. The photograph on the following page was taken approximately in the direction of the arrow. The tip of the arrow is more or less between the present Mollison Way and De Havilland Avenue (yes, spelt with a capital D!) at $51^{\circ}35'54''\text{N}$, $0^{\circ}16'30''\text{W}$, OS map ref TQ195902. Google Earth viewers can find it at post code HA8 5QP.



An Extremely Brief History of Stag Lane and the Association with Kingsbury Works

Based on extracts from various sources, supplemented by extracts from *Sky Fever*, by Sir Geoffrey de Havilland.

The de Havilland Aircraft Company was registered on September 25th 1920. Operations were set up at Stag Lane Aerodrome at Edgware, a wartime training airfield occupying 76 acres. At this time there was just one small house near the aerodrome. Leased initially, the site was bought the following year with the substantial help of Alan Butler, who became chairman of the company in 1924. The de Havilland Aeronautical Technical School was opened in 1928, by which time the Company was employing some 1,500 people. By 1932 houses had been built all round and it became clear that a less congested site was needed. All but 14 acres of the Stag Lane site, now substantially increased in value, were sold to builders and a new factory was opened at Hatfield. Manufacture of engines and propellers continued at Stag Lane. During the Second World War other factories in the area, notably in Kingsbury Green and in Carlisle Road and Honeypot Lane, were requisitioned. The Stag Lane works site was sold in 1969 to Brixton Estate and is now all housing.

Kingsbury Works, south of Kingsbury Road, was built for the Kingsbury Aviation Co., which was formed in 1917 as a subsidiary to Barningham Ltd., machine tool engineers, to make aeroplanes and motor-cars. The works occupied 109 acres, including an airfield stretching from Church Lane across Jubilee Park, and in 1918 it employed 800 people building aero engines. As Kingsbury Engineering Co., it tried to transfer to motor-car manufacture after the war but went into liquidation in 1921. The works remained empty until 1924, when several firms were attracted by the improvements to Kingsbury Road which linked the site with Edgware Road. The main hangar was taken over by Vanden Plas (England) 1923 Ltd., which had been formed after the failure of Vanden Plas (England) 1917 Ltd., the firm at Colindale formed out of Airco. The new firm built up a reputation for high quality motor-car bodies and gradually extended its site, purchasing Kingsbury House in 1926. Bodies were made for Bentley, Alvis, Daimler, Armstrong-Siddeley, Lagonda and even Rolls-Royce. It built Tiger Moths and Mosquito wings for de Havilland during the Second World War and reverted to motor cars in 1946, when it became a subsidiary of the Austin (later British) Motor Co.



Stag Lane Aerodrome in March 1933, looking east towards Stag Lane with Edgware Road across the top of the picture. As can clearly be seen, housing was already encroaching. This photograph is DH3685F, reproduced here by kind permission of BAE Systems.

Some History of DHAeTS

From a 1929 issue of the de Havilland Gazette, written by the School's first Principal, Colonel Alan Eadon:

Just over a year ago, the de Havilland Aircraft Company Limited clearly foresaw that the general development of aircraft warranted the establishment of a separate department to deal with the problem of education. At this time, the Company was offering facilities for premium and trade apprentices, but both of these schemes gave rather limited experience and did not provide to the full the training necessary to conform with the requirements both of the Air Ministry and of the industry. A series of lectures was organised for apprentices and ground engineers who were considering taking their licences at the Air Ministry, and considerable success was obtained in the number of licences granted in this initial period.

Theoretical training facilities exist, of course, at certain Institutes in London, but it was found, in most cases, to be impracticable for apprentices in the Stag Lane works, on account of distance and consequent late hours, the later impairing the benefit of workshop knowledge gained during the day. The Company, therefore, decided to form students, apprentices and any employee desiring training into an evening school in which theoretical and technical instruction of all kinds should be provided. During the working out of the scheme a happy idea occurred that perhaps government support could be obtained; the Middlesex Education Committee, approached through the Board of Education, at once responded by giving the necessary support to this undertaking. With the knowledge that the Technical School, the first of its kind in the aeronautical world, is viewed with favour by the Government, the Company will have no hesitation in expanding its efforts on the educational side of the industry, as opportunity and necessity dictate.

This transcription by Stuart McKay first appeared in "The Moth" August 2008 and is reproduced with his kind permission.

The first part of a history of DHAeTS by Squadron Leader O. W. Clapp, published in Pylon magazine, Spring 1946. S/L Clapp was succeeded in 1940 by Squadron Leader R W Reeve. [S/L Clapp was promoted to Wing Commander (temp.) in the General Duties Branch of the RAF Reserve in September 1942.]

The de Havilland Aeronautical Technical School dates from the year 1928 and was the logical outcome of the existing apprenticeship scheme of training, which was of course too limited in scope to deal with the training of Aeronautical Engineers.

The School at its inception was directed by Captain A. T. Eadon, FRAeS, who continued as the Principal until the middle of 1932. It was the first school to undertake the training of ground engineers, and as the GE licence had become an essential requirement for the repair and maintenance of civil aircraft, it follows that the Company was faced with the problem of how to give instruction and maintenance experience to the many eager applicants for Ground Engineers' Licences.

In those early days the country was undergoing the slump in trade which was part of the aftermath and legacy of the 1914-18 war. The aircraft industry was at a low ebb and it was a hand-to-mouth struggle to keep going. By 1933, however, the industrial tide had turned, and during this particular year the de Havilland Aircraft Co. Ltd. turned out more aircraft than the whole USA production – an inspiring record!

With the growth of the aircraft industry the School had to be expanded to meet the increased demand. By 1930 the School was well established and perhaps a hundred ground engineers, draughtsmen, and aircraft executives had passed through the school and were beginning to spread themselves around the earth, wherever the ubiquitous "Moth" was to be found. Naturally, the de Havilland Company was quick to offer posts to these young men, who, although they lacked experience, were white-hot with enthusiasm and enterprise. The school as primarily envisaged was meant to supply the Company with trained staff, but so great was the enthusiasm of its ex-students in spreading the news that a successful school was in being that hundreds of young men applied for admission. Unless the school was expanded beyond its original conception it could not accept these applicants. However, a new and progressive policy was laid down. The school premises were enlarged, more instructors were engaged, and the new policy was launched by Captain Eadon, the first Principal of the school.

By the middle of 1932 the school had 80 full-time students, most of whom were training to be ground engineers, under their Chief Instructor, Mr A. W. Seeley. A small but active Drawing Office was started by Mr Marcus Langley, under whose subsequent guidance the first two student-built aircraft were designed. At this time, June 1932, Captain Eadon accepted the post of Director of Civil Aviation (India), and the school was taken over by Squadron-Leader O. W. Clapp, MIMechE, AFRAeS.

This is really the beginning of the second epoch. The Company's business was now expanding rapidly, new designs were produced, and so great was the volume of business that it was foreseen that the Stag Lane premises would be inadequate to handle it. Further, the general building programme of the LCC had surrounded the aerodrome with building estates, and flying from the aerodrome with faster and heavier aircraft was incurring a risk that decided the Directors to enlarge the Hatfield site.

The new aircraft factory was built at Hatfield and the Technical School was transferred there in January, 1934. The engine factory still remained at Stag Lane, as did the propellor factory which had been started in a small way in 1935. So it can be seen that the training of students would suffer a division, part of the training at Hatfield and part at Stag Lane.

* * * * *

Training Schemes

This section has been written following the suggestion by Peter Stokes that the chart below be included.

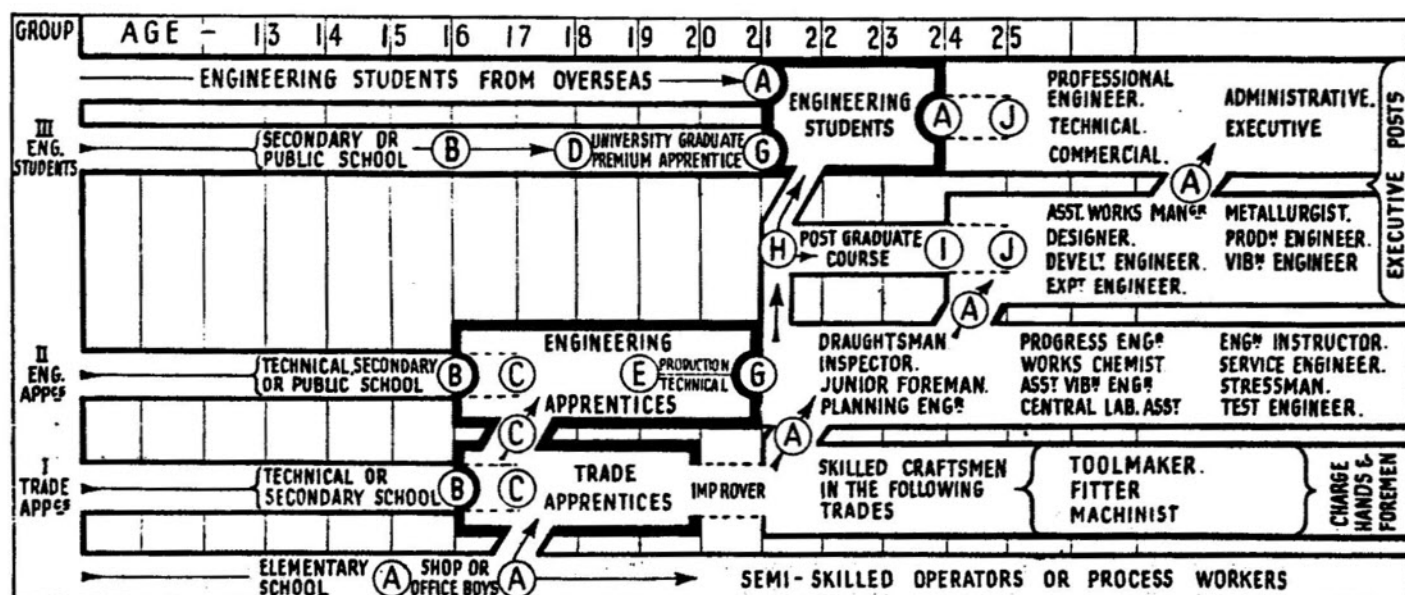
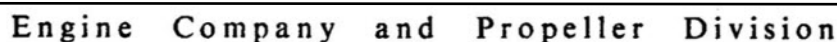
The pattern of training evolved over the years from the formation of the School in 1928 to that illustrated below, taken from the Prospectus of 1945. In the early days students had to be at least 18, preferably were educated to School Certificate standard and courses ran for either two or three years. By 1937 a four-year course had been introduced and the starting age had been lowered to 17. Students, or more likely their parents, paid fees of, in 1937 for example, 300 guineas (£315) for a four-year course. Courses covered theory and workshop experience. They prepared students for the qualifying examinations of the Institution of Aeronautical Engineers, the Royal Aeronautical Society and the Institution of Production Engineers, also for Air Ministry ground engineering licences. The theory comprised mathematics, mechanics, materials, metallurgy, structures, design, stressing, aerodynamics, and production and ground engineering subjects. Workshop experience included all the stages of aircraft production: fitting, panel, erecting, fabric, dope and paint, wood detail and wood mill, engine and propeller departments. Many learned to fly 'on the premises,' but the School itself did not set out to provide commercial pilot and navigational training.

Meanwhile trade apprenticeship, to produce all-round craftsmen rather than allow boys to ‘pick up’ a trade, developed separately, with a system of formal indentures and a trade school which came under the control of the principal of the Technical School. Apprentices were paid wages rather than having to pay fees to the Company. Much practical training was, of course, common to both students and apprentices, but it was not until the industry grew to the sizable dimensions of the late 1930s that de Havilland really began to understand the need for a close welding of the two schools into a unified scheme of education.

During the 1940s a system of scholarships was instituted so that suitably-qualified entrants could be taken on as engineering apprentices without having to pay fees - they were even paid a small wage. Promising trade apprentices could be upgraded to engineering apprentices under the scholarship scheme. Engineering apprentices without suitable qualifications were sometimes taken on, in which case fees were required; they were known as premium apprentices. Post graduate training was offered, either as a scholarship or on payment of fees.

The chart below shows the several training schemes available to Engine and Propeller students and apprentices in 1945. Overleaf are charts given in the 1949 Prospectus showing theoretical and practical training. It seems that it was when Astwick Manor was opened in 1949 that the term 'student' was replaced by 'engineering apprentice'. The Editorial (signed J. M. Ramsden and C. J. Newman) of the 21st Birthday Issue of Pylon, June 1949, includes **"We understand that, in this age of uniformity, Students are now to be known as Engineering Apprentices. This is a waste of valuable space as well as of breath, and as far as Pylon is concerned Students are still Students."**

More detail of the training schemes of different eras can be read in '1937 Prospectus' and in 'Astwick Manor Brochure 1949' on our website at www.dhaetsa.org.uk



KEY TO QUALIFYING EXAMINATIONS

- (A) Works Interview and Test.
(B) School Certificate ; Matric ; or Works Entrance Exam.
(C) Trade and Engr. Apprenticeship Indenture Exam
(D) Higher Certificate or Inter B.Sc.
(E) Engineering Apprenticeship Grading Exam.
(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.Ae.S., A.M.I.P.E., etc.

Engine and Propeller Company Training Schemes, 1949

From the 1949 Astwick Manor Prospectus

THEORETICAL TRAINING

16 Years	Pre-training for apprentices in all divisions of the Enterprise.	English, English Literature, Industrial History, Commercial Geography, Mathematics, Engineering Science, Engineering Drawing, Workshop Practice, Physical Training.	
17 Years	Mathematics, Engineering Science, Engineering Drawing, Jig and Tool Drawing.		
18 Years	Mathematics, Applied Mechanics, Heat Engines, Metallurgy, Jig & Tool Design.		
National Certificate Examination			
	<i>Design and Stress (Piston and Turbine Engine)</i>	<i>Design and Stress (Propeller)</i>	<i>Production and Maintenance (Engine and Propeller)</i>
19 Years	Mathematics, Theory of I.C. Engines (piston and turbine), Theory of Machines and Hydraulics, Metallurgy, Factory Organisation, Materials (Fuels, Plastics, Rubber, Timber, Dopes, etc.).	Mathematics, Theory of I.C. Engines (piston and turbine), Theory of Machines and Hydraulics, Metallurgy, Factory Organisation, Aerodynamics.	Mathematics, Factory Organisation, Theory of Machines and Hydraulics, Jig and Tool Design, Metallurgy.
20 Years	Mathematics, Theory of Machines, Strength of Materials, Theory of Structures, Piston and Turbine Engine Design, Materials Laboratory.	Mathematics, Theory of Machines, Strength of Materials, Theory of Structures, Materials Laboratory, Aerodynamics.	Commercial Practice, Workshop Technology, Materials Laboratory.
21 Years	Higher National Certificate Examination, Associate Membership Examination of the Institution of Mechanical Engineers, and Associate Fellowship Examination of the Royal Aeronautical Society		Graduate Examination of the Institution of Production Engineers

Note.—Under the National Service conditions prevailing in 1947 the training outlined above is condensed into about four years, ending at the age of twenty-one.

Figure Three

PRACTICAL TRAINING

1st Year in D.H. School Workshops	Basic use of tools in each of the following sections :— Fitting, Machining, Drawing, Internal-combustion Engines.		The first half-year is a probationary period.
2nd Year in D.H. Factories	Treatments, Fitting, Machining, Tool Room.		
	<i>Piston and Turbine Engine Design.</i>	<i>Propeller Design.</i>	<i>Engine and Propeller Production and Maintenance.</i>
3rd Year in D.H. Factories	Engine Assembly, Propeller Course, Engine Test, Engine Repair, Laboratory, Magneto and Carburettor Overhaul and Test, Inspection.	Propeller Course, Engine Assembly, Propeller Test, Propeller Repair, Inspection, Laboratory.	Production Machining, Engine and Propeller Assembly, Engine and Propeller Test, Plant Maintenance, Inspection, Stores.
4th and 5th Years in D.H. Factories	Engine Development, Drawing Office, Vibration Test.	Propeller Development, Vibration Test, Drawing Office.	Methods and Rate Fixing, Planning, Jig and Tool Drawing Office.

Note.—Under the National Service conditions prevailing in 1947 the training outlined above is condensed into about four years, ending at the age of twenty-one.

Figure Five

W P C (Phil) Hagger (1932-1934)**The Magic Box****Some random memories of the Technical School 1932-1934**

This article was published in the Summer 1957 edition of 'The Stag', the then newsletter of the Old Boys' Association.

Whenever there's a job to be done around the house I find myself thinking of my days in the Technical School. Any job, that is, that needs the use of a screwdriver, a saw, hack or tenon, a hammer, ball pein, a chisel, pliers, spanners or any other of the aids to my clumsy bare fingers. All these are kept in that masterpiece of craftsmanship, the tool-box I made, as so many of you have made, as a limbering up exercise on first joining the school.

There it stands, my name stencilled in large white letters on its black, now somewhat battered exterior, a monument to my skill and to the enthusiasm with which I attacked the odd sized bits of timber which were handed out to me with my new gleaming tools by dear old Mr Cobb at Stag Lane in the late summer of 1932.

Let's take a closer look at this masterpiece of the carpenter's art. Yes, I know it's somewhat narrower and maybe a bit lower than it should be. That, I fear, was due to a little difficulty I had in dovetailing the top, bottom and sides together for despite all Mr Cobb's patient watchfulness there were times when he had to move swiftly to the side of some other ham-fisted student to prevent a crime such as bashing the handle of a wood chisel with a hammer or filling a wrongly started sawcut with an all concealing mixture of sawdust and casein glue.

In these periods of freedom from his all seeing eye it was for me but the work of a moment to saw or chisel just that little extra bit that turns a neat and snug dovetailed joint into something that sounded like the efforts of an over enthusiastic tap-dancer as the long suffering instructor rattled it in his hands, shook his head sadly and said "Cut 'em off and start again. We can save it this time but it won't stand another go". So off I went, sadly cutting off, re-marking and, with breath tightly held, re-making the dovetails. I was beginning to panic at the thought that my box would end as a miserable receptacle only large enough to house perhaps a 2BA spanner and a handful of gimp pins. However, by the grace of Cobb I completed the outer case and cut and fitted the lid without further trouble. Without further trouble that is until I came to the drawers. The top one's all right and provided that one pulls or pushes on each handle alternately with a sort of rocking, jerking motion it opens and closes perfectly. What's more it's the full depth of the box unlike the lower one which opens and closes freely, too freely some might say, as, if not held fairly central, there is a tendency to run off the rails. During the making of this drawer, however, I lost an inch or so on the side pieces. An inch on one side only that is for I was in complete control of the situation as I sawed off the other side to suit. Nevertheless, I wish it had the capacity of the top drawer.

Can you wonder then that the sight of this box never fails to trigger off some memory or other of those two years I spent at Stag Lane, years which I remember as

two of the best of my life and during which I came to know some grand characters some of whom I still see at the Old Boys functions or when visiting aircraft firms. Of these, alas, some we shall never see again – Geoffrey de Havilland Jnr who taught us to fly the 60G Moths which we built ourselves. All of us who learned to fly them are proud to say "Geoffrey taught me". Gone also are Dick Pearce who acted as a temporary flying instructor, Dick Wrightson, James Buchanan, Neville Dubash, 'Lofty' Beale and, I fear, there may be more but I hope not. Others, however, are about somewhere in England or in other parts of the world. Pretty good jobs have now I expect! Some we see often and one who comes immediately to mind is one who, in those years and for many years after taught so many of us the ways of aircraft and who made certain that, when the time came to sit for our Ground Engineer's licences, we passed! Bill Seeley was the very first person I saw when I came to the school for my interview with Squadron Leader Clapp, the Principal at that time. I remember how, late one summer afternoon, I came into the old wooden hut where the school was housed. It was deserted and, although I was quaking at the thought of the coming interview, I soon became absorbed in looking at the various intriguing things I could see – partly finished wing ribs, a spar or two and, best of all, an almost completed Moth fuselage standing on trestles in the midst of everything.

As I gazed at all this, sniffing in the heady smell of dope and sawdust, I became suddenly aware of a tall lean figure by my side. A long ginger shot out and tapped me on the chest. "And what", said Bill, "are you doing here?" I gulped hard and explained who I was and why I was there. From then on until the time for the interview I was told fact after fact about the School and about various things lying around. The fuselage it seemed was that of the third Moth to be built by the students, G-ACAM. Little did I think at that moment that it would be the first aircraft that I should be trusted to fly solo a few months later. The two other Moths G-ABXT and G-ABTS were already hard at work teaching students to fly. The facts I learned that first evening from Bill Seeley were but the first of many others which I absorbed from him and other instructors during the next two years. As with him so the others were always ready with advice, help and friendliness in workshops and lecture room, - Marcus Langley, Dodds, Glennie, Honeywood, Cobb, Petts and, of course, Jack Ballard who maintained the Moths and who told us just what he thought of some of the assistance we tried to give him from time to time on the aerodrome.

Where are some of the students of this era I wonder? Percy Wright I think is in South Africa. He, I shall always remember, was the mighty chap who, during my first few months at Stag Lane, I used to view with awe.

He was putting in hours for his Pilot's 'B' Licence and had done nearly a hundred solo! One morning he came into the school with a black eye and sticking plaster over his nose. The controls had jammed in –TS due to a slide-rule finding its way into the control box. I wonder if anyone ever claimed that slide-rule! –TS spun in on to a housetop in Burnt Oak, and Percy climbed from the wreckage little the worse. A press photograph I have shows a much bent Moth lying in the front garden of a semi-detached house literally in a bed of roses. In the next garden there can be seen one of those smug looking little cherub statues obviously very pleased with the whole affair. I remember I was picked as one of the party to help carry in the wreckage when it arrived back at Stag Lane. Quite honoured I felt!

Charlie Madge, another of that era, I believe, returned to Chile where his early youth was spent. When he left the School he joined Imperial Airways and became a 'C' Class Flying Boat Skipper. How many of you remember the famous duel between him and Johnnie Hogarth when each started jabbing at each others tool boxes with the tangs of files, gently at first

and then more and more fiercely as each saw the damage the other was doing. It all ended in a terrific fight amidst the splintered remains of their boxes!

Johnnie must be, by now, a very high ranking Air Force Officer and has probably forgotten the day he moved his old Gwynne 'Eight' car close to the hangar doors while they were being painted. That bright green re-spray cost him five bob only I believe.

And what of all the others of that time, 'Hazel' Neave, Cruikshank, Northcote, Fisher, Turnbull, Le Poer trench, Benachi, Fox Wright, Grey and many more whose names I can't recall just now. If any of them should read this I hope they'll write and tell us all about what they've been doing since they left the Technical School and even if they have nothing to do with aircraft any more we'll understand!

Now back to that job I promised my wife I'd do today. That's strange – I've never noticed the 'L' carved on the handle of this screwdriver before. Have any of you '32 to '34 characters got a screwdriver with an 'H' on the handle? If so, I'd like it back.

Many years previously, Phil Hagger wrote the following piece for Pylon January-March 1934

Good-bye, Stag Lane!

The time has come to bid farewell to Stag Lane, one of England's best-known aerodromes. How many pilots, some now famous, and new machines have taken off from its surface? All those people who have been connected with it – even those pilots who curse the dip which has given them fresh ideas upon the art of landing, must surely feel a pang of sorrow when they realise that, before many more weeks have passed, dwellings, similar to those which press round the outskirts today, will rise upon the very surface of the aerodrome. The sound of aircraft engines will soon be stilled, and in its place will be heard the noise made by hundreds of wireless sets, all badly tuned to different stations.

It is now, I think, the time to recall the Stag Lane of yesterday. In 1915 it formed part of a farm belonging to Mr Warren, who let it out as an aerodrome to a pilot named Smyles. Up to the end of the War many pilots were trained here by the London and Provincial Flying School, this concern having moved over from Hendon, which was at the period suffering from overcrowding. Warren and Smyles then decided to drop flying, and they started a furniture factory. From furniture Smyles turned his attention to the manufacture of chocolate (strange mixture – aircraft, furniture, chocolate!). It is interesting to note that the chocolate factory flourished where the Gipsy engine shop now stands.

An important year in Stag Lane's history is 1921, for it marks the arrival of the de Havilland Aircraft Co. at the aerodrome. From this date, up to the present day, many notable machines have been produced by the company at Stag Lane. Amongst the early productions was the D.H.34, a machine which was largely used by Daimler Airways Ltd., and later by Imperial Airways Ltd. Another famous machine was the D.H.50, which Sir (then Mr.) Alan Cobham used on his first flight to

Australia and back. This type was also used extensively by many air lines. Then, in 1925, was produced that most successful light aeroplane, the Moth.

Stag Lane has witnessed the start of many record-breaking flights. Amongst these was that of Captain Broad in the little D.H. Tiger Moth (a rather different machine from the one which now bears the name), who, in 1927, captured the world's speed record for light aeroplanes with a speed of 186.47 m.p.h. Incidentally, this amazing little machine is ending its days usefully by standing, as an advertisement, outside the de Havilland Aerodrome at Hatfield.

We must now return to the Stag Lane of today, an oasis in a desert of bricks, so soon to end its flying days. In years to come, as we fly above the mass of roads which rise over what was once the haven of many a homing 'plane, we may wonder if the people who now inhabit it ever hear, at dead of night, the sound of phantom machines returning to the aerodrome. Well, I hope it keeps them awake!

11292	
HAGGER, William Philip Clifford Moleside, East Molesey Park, Surrey	
Born 9th June 1911	at London
Nationality British	
Rank, Regiment, Profession Aeronautical Student	
Certificate taken on D.H. 60 Moth Gipsy I	
At D.H. Technical School, Stag Lane	
Date 2nd August 1933.	

Royal Aero Club record card, W P C Hagger

From Pylon magazine Spring 1946, reproduced in the Pylon 70th Anniversary Issue in 1998 and again here in its original format.

STAG LANE MEMORIES

by R. A. P. MISRA

Mr Misra is an old student, until recently with us as an instructor in Aircraft Materials. He came from India thirteen years ago, and gives below his reminiscences of the early days of his apprenticeship.

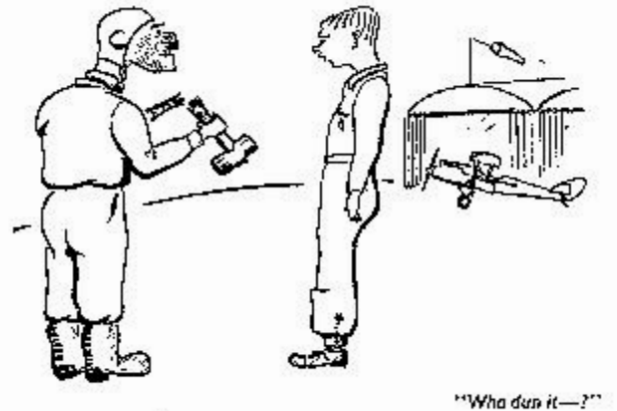
One of the outstanding features of the de Havilland Technical School has always been the cosmopolitan element among its students. Young men from India, Egypt, South Africa, South America, Turkey, China, and many other parts of the world have come here to work and live together and to go through identical training, always in a harmony and good fellowship which seems to be one of the best signs for the future of the world.

I come from India. I arrived at Newhaven in July 1933, expecting to find England a land of rain, cold fogs, and only rare and half-hearted sunshine, and as my train drew in to London with that first dawn, the roofs were indeed dismally wet and grey. I was met at Victoria by a friend, who took me to see some of the sights of London, and still remember my surprise at finding Whitehall so black and grimy, with not a single "white" building in it. A different surprise came in the afternoon when the rain ceased and the sun came out, shining with incredible brilliance, and so hot that I felt more uncomfortable than I had been in Bombay a fortnight earlier. England, after all, was not perpetually enshrouded in mist!

The entire school at that time was at Stag Lane, and on my first visit the Principal, Captain Clapp (now Wing-Commander Clapp) showed me round the works in his shirt sleeves. He was friendly and encouraging and I was very much impressed with all I saw. I asked if the Company had its own wind tunnel, and was a trifle dashed to find they had not. I have found since that the mere possession of a wind tunnel will not give an aircraft manufacturer fast and dynamically clean aircraft. It is tradition and inborn skill in design that does that, and the craftsman's "feel" for a good-looking job. In fact, there is a lot of truth in the old saying that if a thing looks right it probably is right – especially in aircraft design.

I duly joined the School and became an indentured apprentice, and then another new experience befell me – my first English winter. The draughty old shed which served as the Technical School building was none too warm, and on specially cold mornings when the frost was on the ground the students would be joined by the Instructors and the Principal in tossing a heavy bag of sand from one to the other.

I was told that this was one of the good old English ways of getting warm, the others being impracticable owing to the need for sobriety during working hours. It



certainly was effective. The exercise warmed us up, and we started our work with a glow. Whether the glow lasted or not depended on how much energy we put into our subsequent tasks.

In those days the Technical School were already building their own machines, and flying them. It was a worrying job for any ground engineer to be responsible for all the actions of the students carrying out maintenance on the machines, and it speaks very highly for the efficiency of the personnel concerned to say that there were no serious crashes, although once or twice it was a near thing.

One day, soon after a Moth had taken off, a student who had been working on it found a blank space in his tool box. The hammer was missing. This gave him one of the most miserable hours of his existence, as he had been working on the control box of the aircraft, and although the missing hammer *might* have been mislaid in some harmless spot, it might not.

The machine did eventually make a safe landing, but the pilot reported that he had felt an obstruction in the controls. He had pulled the stick hard, and that had freed them. Examination showed a wooden hammer shaft, broken in two. What advice the pilot gave to that young aspirant has never been recorded – but it has never been forgotten.

The moral of this story, for this year and any other year students, is that the control box of an aeroplane is not a proper resting place for tools, even momentarily. It also marks the excellence of a control-box design which could withstand such a serious overload and which has, deservedly, remained basically unchanged on all Moths for over eighteen years.

Pylon Summer 1951 reported that he was in Bombay, a director of the Indian Wild Barfield Co. Ltd. [They made industrial furnaces.]

John Conway (1942-1947)

First part of article in Spring 2010 Newsletter

It was 1942 and there was a war on. I was sixteen years old and had just left school with my GCE and realized that I had to look for a job. I expected to be called up for service as soon as I was eighteen and I had no skills that I could sell in the meantime. I was keen to join the air force as I had been interested in flying for some time and had made a number of models, generally flying models, but some solid ones as well. I had been in the Air Cadets at school since they were started, so I had a little background.

While still at school we had talked about the de Havilland Aircraft Company as being a place to work, which would be interesting; the only thing that I really knew about them was that they made the Mosquito aircraft, which was very much in the news. Anyway, I thought that it was a place to start, so on a Monday morning I went out to Stag Lane where DH were located and was met by a large gentleman at the gate who asked what I was there for. I told him that I wanted a job, and then found out that there was more to it than that. After a trip to the Hendon Labour Exchange I returned to DH and was escorted to see Mr. Seeley, the apprentice supervisor, whose office was on a mezzanine above a very noisy assembly shop. With great straining of ears I got through an interview and had to complete a form. One of the questions on the form asked what position I was looking for, so I wrote in – aeroplane designer. Mr. Seeley crossed that out and filled in – engine fitter! He then asked when I wanted to start, so I said how about tomorrow. That seemed OK and I had a job.

The next morning I turned up at the Technical School, which was at Kingsbury and was immediately greeted with the question “Do you want to take the exam for Willesden Tech?” Without having any idea of what this meant, I said “yes” and was bundled into a van with a number of other apprentices and taken to what had obviously been a shop with steel shutters in front. Inside were rows of desks and about thirty of us were given examination papers to complete. The questions were varied and very straight-forward to me, but I later found out that a number of the other apprentices had left school at fourteen (which was quite normal then) and had found some questions heavy going. I subsequently found out that the test was to determine whether I would be included in a new programme which was being started, whereby some apprentices would spend time during working hours at Willesden Technical College, working towards getting a National Certificate in Mechanical Engineering, which was awarded by the Institution of Mechanical Engineers. It would be many years later before I realized how important this step was to become. Our group of about thirty apprentices started at

Willesden not long after. We attended for two days every week, which included half a day of sports. The subjects in that first year were very similar to my last year at high school and were generally aimed at those people who had left school early.

Back at Kingsbury I was allocated to start in the stores as a familiarization process and ran through all the requests for left-handed spanners, centre lines and buckets of sparks, but it was useful training. From there I went to the engine group where I was required to completely strip a Gipsy Queen, draw the lubrication system and then completely reassemble the engine. After this the same process had to be repeated for a Gipsy Major. Generally we were getting a number of Majors that had been damaged in minor accidents, particularly nose-overs on landing; they were much in use in Tiger Moths at the EFTS establishments. We would strip them and replace the damaged parts and do other work as needed. I often wondered if they were used again or whether was just part of our training.

After three months on engines, I was moved to the fitting section, where my first exercise was to make a perfectly square hole in steel plate and then made a square to fit the hole. This sounds fairly straightforward until you realize the square must fit in any position. I managed to produce a lot of scrap metal before the instructor was satisfied. There were a number of other exercises to follow. My next move was to the machine section. We were very fortunate in having some excellent heavy machine equipment, metal turning lathes, milling machines, shapers, etc. I found that I enjoyed this area most and I learned to work to fine limits. I also wrecked a large milling cutter when I was machining a hub for a propeller. I found out that the fine dust from a shaper would rust into your clothes if you cycle home in the rain. I remember that all our machinery was driven by an overhead belt system that would not usually be seen now.

By the end of May 1943, I had completed all the sections at Kingsbury and was called for an interview with Mr. Seeley to determine which factory centre I would be working in. Stag Lane was the propeller centre and there was also the engine centre at Leavesden, as well as the engine research centre, where the H1 jet engine was being developed. I suggested that I was more interested in the aircraft side, which was at Hatfield, feeling that I would get the most experience there. Mr. Seely agreed with this, but told me that I would have to spend some time at Salisbury Hall before going to Hatfield.

The article continued to relate his later experiences.

“The Old Boys’ Association”

The de Havilland Aeronautical Technical School Old Boys’ Association was inaugurated at a meeting at Hatfield on 3rd March 1951. Mr F T Hearle and S/Ldr R W Reeve were invited to be the President and Vice-President respectively. Mr F T Meacock was elected Chairman. Present were Company Directors Sir Geoffrey de Havilland, Mr W E Nixon and Mr J L P Brodie, in addition to a large number of former students. Sixty years on, having long since dropped the ‘Old Boys’ part of the name, DHAeTSA is still going strong.

Alan Mann (1943-1948) [See also item on p. 17, added in Issue 2]*Based on letter in Autumn 2008 Newsletter, with later additions and amendments*

On the 17th September 1941, aged 14, I joined the RAF at Kidbrooke (the No.1 Aircraft and Balloon Maintenance Unit) as a trade apprentice. Having repeatedly complained about the repetitive nature of the work I was doing the Commanding Officer, Wing Commander Clapp, agreed that I could transfer my apprenticeship to an Aircraft Company, if any would have me! (Incidentally Wng Cdr Clapp was considered an expert on vibrations and I came across one of his books whilst serving in the DH Vibration Department.) I wrote to de Havilland and they accepted me in June 1943. Throughout my apprenticeship, which took place initially at Vanden Plas, then Stag Lane, ending up at Hatfield, I travelled daily from my home in Lewisham, South London. The head at Vanden Plas was Mr Honeywood and

the apprenticeship supervisor was Mr Watford. I remember three of the names of my fellow apprentices: Jim Gearing, Ron Bainbridge and Peter Hazlegrove. I did my basic training in the fitting, machine and assembly shops, probably about four months in each. I spent time with the three instructors, Fairburn, Bannister and lastly with George Dawes in the engine section, where we worked on Gipsy Major and Gipsy Six engines, before joining the engine division at Stag Lane.

In 1948, whilst at Stag Lane, I was promoted to a student and then joined George Brown's team in the new propeller building at Hatfield. I completed my apprenticeship on 16th June 1948 and commenced employment as a junior draughtsman within the propeller section.

John Shackell (1943-1949)*Letter in Spring 2009 Newsletter*

I was an Engine Company apprentice, although I had Aircraft Company indentures signed on their behalf by Frank Hearle. I started at the Kingsbury Tech. School (of which more later) straight from school in late August 1943. In common with most Engine Company lads I started as a Trade Apprentice 'Aero Engine Fitter and Tester', but after a couple of years, having survived a year or two of National Certificate courses, I was 'promoted' to Engineering Apprentice, being interviewed for such by Jock Brodie in his office. This was in the requisitioned Car Mart premises in Edgware Road near Staples Corner and Kemps requisitioned biscuit factory just round the corner on the North Circular Road, where we assembled Gipsy engines amongst other things.

At the end of my apprenticeship I was inexplicably put up as Engine Company entrant for the John de Havilland prize, but predictably it went to an Aircraft Company student. But they never gave up and I was then, to my amazement, put up for an SBAC scholarship at Imperial College, but it went to Handley Page's that year, much to the annoyance of the Great and Good of the Tech. School (Messrs. Watford, Squadron Leader Reeve and Saul Brown) so as compensation I was packed off to the Motor Industry Research Association labs (in those far-off days in Brentford) for a six month highly enjoyable sabbatical. I then went into the Engine DO at Stag Lane for a few years before seeking pastures new.

One could write an entertaining book on an apprentice's life in those far off wartime days in the various shadow factories around NW London requisitioned by de Havillands.

Now about the Tech. School. Although the school was indeed next door to Vanden Plas it was actually, we were told, in premises owned by a Mr. Elliott whose son was an apprentice there at my time. [The son was Wally Elliott, whose father ran Elliott Windscreens in premises rented from Vanden Plas - see Alex Swales article on page 8.] Vanden Plas at that time made wooden mainspars for Mosquitos which were then transported

down the Kingsbury Road to the Victoria Hall where further wing bits were added and the whole affair then sent on to Leavesden for incorporation into finished aircraft.

In my father's day this was all on the site of the old Kingsbury airfield. Also, to the left of the roadway leading down to Vanden Plas and the Tech. School was the dreaded 'Fireproof Tanks', a factory staffed by aggressive and rather rude young ladies. Any apprentice who was foolhardy enough to venture up that road alone at lunch time was likely to suffer unmentionable embarrassments at the hands of these females and more than one pair of trousers ended up on the grass bank on the other side of Kingsbury Road.

In my day Mr Honeywood was in charge with Mr Watford, his boss, back at 'the Lane'. Mr Bannister, a doughty Yorkshireman, ran the machine section, Mr Fairburn, the fitting section and George Dawes presided over the engine section. Old Mitch (an ex pattern maker) ran the drawing section up on the balcony for those who had not done machine drawing at school. Old Jack made the tea and a delightful young lady who bravely resisted our schoolboy pranks (and other approaches), whose name I can't remember, was Honeywood's secretary. The school week was interspersed with days at Willesden Tech. for our National Cert. courses. The school was, on reflection, an ideal way of leading us young lads, some like me straight from the hallowed environments of posh Grammar Schools, into the rougher life of wartime factories – which I recall we actually enjoyed immensely.

After the Tech. School it was usually off to the propeller heat treatment or the plating shop, both were unpleasant places at Stag Lane and a rough introduction to the real world. It could only get better after then.

They were really great days for a young apprentice with the great diversity of places to work in those wartime years. (Kemps biscuits; Collar's laundry at North Wembley; Carlisle Road and Finchley Road, both Merlin overhaul centres; the Stag Lane test beds; the Merlin test beds on the Watford bypass; Stonegrove; Car Mart at Staples Corner and of course several other Stag Lane departments).

Alex Swales (1945-1950)

Previously unpublished

Mr Honeywood was the Apprentice Supervisor on site. Mr Seeley was the overall boss at Stag Lane. I went, carrying my Kiel Kraft flying model and not much else, for an interview with him. QED. Curiously Mr Seeley was the invigilator when years later I sat the flight engineers O license exam at the Ministry of Transport & Civil Aviation. He didn't remember me and I didn't remind him.

The college was started in 1928 at the airfield and located later at the Kingsbury end of Stag Lane. The airfield, where Amy Johnson among many others learned to fly, and the factory were located at the Edgware/Burnt Oak end. Perhaps college is a rather high sounding name for what was a workshop equipped with benches and machinery. It occupied the premises of the Vanden Plas works. Elliott Windscreens, Wally Elliott's father's business, was next door.

The disciplines and facilities covered were: engine assembly, DO, magneto and carburettor lecture area, fitting benches with vices and drilling machines, and a long steel surface table which doubled as a table tennis table, a woodworking section and a machine shop.

The mag & carb course was the province of a Mr Rolphe. We learned of the intricacies of a device which provided a spark and another which controlled the supply of fuel to the cylinders. The mag sported a vernier coupling, which allowed fine adjustment of the timing and acted as a shock absorber. It was a bit close to the spraying booth and Chris Rogers was a bit worried about his lungs; there were noises about TB at the time. So we went to Mill Hill for an X-ray. Chris was giggling and spoiled the plate. He had to go back for another take which was a tad worrying, especially for Chris, who usually wore a long face anyway, but all was well.

Mr Dawes ran the engine assembly shop which boasted Gipsy Queen Sixes and Gipsy Majors and Minors. It is a matter of some consequence that only a little over a decade after the Wright Brothers, de Havilland produced this range of Gipsy engines which were light (air cooled) and that the four cylinders produced over 100bhp in the 1920s. Especially since the design and build of successful aero engines, begun in the 19th century, was only coming to fruition with the Wright's engine (1906), the French Antoinette (1906) and others, notably Otto & Daimler in Germany, and later in the 14/18 war the RR Eagle VIII 12 cylinder 360HP, the American Liberty and the 8 cylinder 240HP Mercedes. The de Havilland engines and the Moth aircraft were very reliable and carried Amy Johnson to Australia so wonderfully well.

Stripping and reassembling engines was the order of the day, but the real business was to arrange engines in their stands with the cylinders uppermost, then fit sparking plugs on one side and tapered wooden blanking plugs in the other. Then by spinning the engine the wooden plugs would eject and rifle with some force at an appropriate target. The magnetos were wired up to the box of spare nuts/bolts etc., and again, with a spin of the

engine, an unsuspecting new boy would receive a bit of a surprise. Sea battles, with the engines doubling as galleons, firing wooden cannon balls at each other were a feature of break time.

Messrs. Pasco and Fairburn instructed in the fitting section where one learned the arts of hack-sawing, filing, drilling and sundry similar skills. There was an exercise of drilling a number of holes within a space, which meant that the walls of a hole were only 10 thou. from its neighbours. Another was fitting a square within a square by filing – quite tricky. Soldering, hardening and tempering were also practised.

One particular exercise, by a chap who shall be nameless (it rhymed with Dixon) was to find out what would happen when a 0.303 bullet was heated in the forge. Suitably positioned, the business bit hit the ceiling of the m/c section to ricochet around the section. Luckily no one was hit – mad b....! 0.303s were also hammered into gateposts with predictable results.

Woodworking was supervised by Mr Mitchell (Mitch), a venerable, white haired, older gentleman who wore a homberg and pinstripes. He was an ex pattern maker and a nice old boy. When using the circular saw it was quite common for a piece of wood to fly past his ear in the direction of the m/c section. Woodturning was taught and of course planing, chiselling and making joints. A project ongoing from one intake to the next was the build of a fire engine with a wooden (yes wooden!) superstructure. Mitch had some fingers or bits of fingers missing and would show a hole in his forearm which, when he flexed his muscle, would form into a whirlpool shape.

The machining section was the charge of Mr Bannister (no relation to Roger as far as we knew and any likelihood of him running a mile, let alone in four minutes, was very remote indeed.). He was always asking if anyone who had committed some sin "wanted to go 'ome". A favourite trick of some of the apprentices was to turn the flushing pipe in the urinal to direct the water jet outwards. The flushing was not automatic but instigated by a pull chain to a cistern above the urinal. Anyone doing so would then, of course, receive a douche at about the midriff. Predictably Mr Bannister was caught and was seen to burst from the toilet chanting his mantra: "oo wants etc."

The author strung himself up on one occasion. The caretaker had the job of pulling large wooden blackout shutters across the windows (northern lights) in the roof. He would then stow the cord by winding it around a peg in the wall. When the bell went at 5 o'clock we usually raced for the exit. The author was just passing the caretaker when he fumbled the stowing of the cord, which swung away from him and looped under the chin of said author who was swung from his feet into the air. The experience was somewhat chastening.

Another incident involving the author was when a doodle bug (V1) cut out as it passed overhead. It was heading toward my parents' house in Stanmore. I broke the world cycling speed record (as recounted later) in

getting to the devastated site; it struck not far from my parents (1/2-3/4ml.) but too near for comfort!

The time spent at Kingsbury was only the start of the Apprenticeship, which was a five-year term. Included was time in a number of departments at Stag Lane and elsewhere, as described below, this being the major part of the Apprenticeship.

Propeller assembly including torque loading of hub assembly and static balance of complete propeller.

Gipsy engine assembly at Kemps (biscuits) dispersal factory on the North Circular Rd. and other dispersal factories. The shop steward was a chap called Evans. He parted his hair diagonally across his head for some unfathomable reason. He had made himself a rapier and spoke of dying on the green sward with a rose blossoming on his white shirt! He demonstrated his fencing prowess one day by lunging at the door of his locker. The point and half the bade disappeared and in pulling back to free it, the door opened to display his hat impaled on the point. One of the fitters had an unfortunate balance problem and every so often would he would stagger backwards away from his engine stand. A nearby fitter would quickly move to intercept him and guide him back to his stand. The author was a bit of a menace in the fitting business and having broken the carbon brush in the tube from the magneto to the distributor, not once but twice and after several other gaffes was informed by the fitter: "every one has their off days but you seem to have more than others".

Gipsy engine test beds for running in, horsepower measurements by dynamometer, fuel flow, temperature monitoring etc – a noisy business! Experimental engines were also built at Stag Lane.

Goblin engine assembly was at Stonegrove in a building parallel to the machine shop where impellers were machined. The blades were excited by a violin bow to establish their natural frequency and tune them so that there was no interference with their rotational speed. Leavesden was the primary repair base and ex-RAF engines were refurbished for India there. Ghost engines were produced at Lostock.

Jet engine test beds at Hatfield for Ghosts (Comet, Venom and SAAB 29 aircraft) and Gobblins (Vampire and SAAB 29). Also a noisy business.

Design & Planning Depts. Gipsy, Goblin & Ghost engine design work – largely modifications. Planning – workshop machine tooling etc.

Engine Co. Service Dept at Leavesden Technical and modification news sheets and handbook amendments and distribution. Support to Field Service Engineers.

Machine shop – gear cutting and grinding, capstan lathes and milling machines.

Cylinder head volumetric adjustment by scurfing, using kerosene in a measuring device to measure volume.

Inspection view room and salvage section. The author was working in this section and happened to be fiddling with a duralumin push rod tube and finding that a crankcase dowel was a nice sliding fit in the tube, realised it would make a good 'peashooter' but since there was a handy airline, better still an air gun. The ingredients for a tragedy were in place (dramatic stuff!). Geoff Callow was in the view room at the time and there was a hatch between

the view room and the salvage section to pass bits from one to t'other. The now lethal air gun was surreptitiously aimed upwards through the hatch for what was hoped to be a suitable ballistic trajectory. Instead the dowel flew without much deviation, if any, and hit one of the large green and white over-head hanging lights with a resounding clang. In fact the light, which looked quite heavy, swung slowly backwards and forwards showering dust down into the view room. Everyone looked up to 'view' this phenomenon. The tube and air-line were of course put out of sight and a suitably innocent expression assumed. To this day only Geoff and I know of the mysterious incident of the swinging green lamp. (Title for an Agatha Christie Poirot story?) The result had there been no offset ballistic trajectory, doesn't bear contemplating.

Those I knew well or got to know later did not in fact put the undoubtedly useful skills gained at the college to much use. Wally Elliott, Pat Emmett, Gerry Groves, Don Hunt and self did a spell in the Engine Company Service Dept at Leavesden before taking off for pastures new. In charge of the Field Service Dept. was Charles Blanchard (Charlie). He had a sliding window in one wall of his office (rather like a serving hatch). It would periodically be flung open and the cry "Emmett!" was heard. It was usually Emmett who had sinned and was duly roasted. The author received one of them!

Those and others had good jobs. Geoff Callow became a lecturer. Jim Chaney took a Land Rover across Africa down to Johannesburg. Wally Elliott opened an art gallery in Ilfracombe stocked mostly with his own paintings; there's one on my wall. Pat Emmett was a rep. for Sir George Godfrey & Ptnrs. He incidentally was a useful fast bowler and bowled Dennis Compton when he went to Regent St. Poly for an exhibition match. Emmett had the ball mounted on a plinth with a suitable inscription. He also organised an apprentice side for the interdepartmental matches. Practice was in a recreation ground in Stag Lane and on one occasion he put a threepenny bit on the bails and invited all comers to knock it off and so keep it. Chris Rogers, a very good miler, but no cricketer, stepped up and sent down a very high full toss. Emmett took an enormous swipe at it and missed. You can guess where it landed much to the amusement of the outfield. Gerry Groves ran his own company selling office equipment.

Don Hunt became MD of a company in Andover. *From Don: one incident springs to mind. I was in the cutter grinder shop at Collars Laundry (another dispersal factory, where Constant Speed Units were made, built and tested) when I walked Apprentice Westacott (a reptile fanatic) and as he did so he pulled open his shirt and a snake tried to jump out. The girl on the grinder promptly fainted and the chargehand said, "Christ! Here comes the foreman." So those present helped to push the unconscious girl under a bench. The foreman did not see her and she soon recovered.*

Peter Stokes (1945-1950)

From his article in the 75th Anniversary issue of Pylon

My specific recall concerns my own 'time', and particular regard for Bill Watford, our Apprentice Supervisor in the Engine Company at Stag Lane, Stonegrove, Hatfield, and Leavesden.

I appeared at Stag Lane for interview as a Trade Apprentice by a panel including Squadron Ldr. Reeve, Mr. Saul-Brown, and Mr. Watford. I (with my mother in attendance – a quaint remembrance for a 16-year-old) was certainly impressed by the panel and, having been found acceptable, I reported to the Kingsbury and Carlisle Road complex in September 1945 (Carlisle Road at that time housed the DO under the revered Ned Mitchell.)

Bill Watford, whilst Mr. in address, was an urbane personality as a 'Bill' with a genius for a never-failing instant recall of name and the goings-on of all and sundry. Whilst the rather colder Mr. Honeywood dealt effectually with the school aspects, contact with Bill Watford continued whilst you were about the works and offices, with placements happily biased in social communion with the ladies of the office, Mrs. Patterson and the young and effervescent Poppy. Bill Watford joined W.H. Allen at Bedford in 1925, a company famed for its power machinery for the RN, and its training reputation. Initially a draughtsman, he joined the Training and Welfare Department, and a copy of their training routes diagram suggests a read-across with DH practice at that date. He was involved in national committee work throughout his career and the 'Association for

Education in Industry and Commerce' embraced W.H. Allen as one of the ten leading industrial affiliates. Coincident with the forming of the DHAeTS Education Board in 1943, Bill was recruited to the company as Apprentice Supervisor at Stag Lane, paralleling W. Blackburn at Hatfield. The Chief Instructor and six instructors reported to him, and 160 apprentices were dispersed about the 16 premises that had sprung up. Post-war, with the formation of the new Engine and Propeller Companies, jet engine work, and the Korean war, numbers rapidly rose to 450 and then beyond. Bill enjoyed the real support of the Directors in his role, the company continued paternalistic, and the school did enthusiastic work. This included the 'Wright' and 'DH Iris' replicas and the stillborn 'Beardmore', overtaken by Bristolisation. He served on the Education Committee of the SBAC and continued as its Chairman until he retired. When at the end of 1959 Hawker Siddeley came into the picture, the DH Engine Co. and the Tech. School cruised on and the activity was only incorporated into Bristol Siddeley in August 1962. With Bill Watford's standing and affiliation with the SBAC he continued in wisdom and acceptance with George Sterling at Bristol and George Phillips at Coventry with their teams. The Apprentice Association continued the ethos of the DHAeTS and permeated the Bristol Siddeley Group training activities.

Mick Goode (1945-1949)

Letter in Summer 1997 Newsletter plus added comment from Phil Meier

I started work in August 1945, a couple of weeks after leaving school, as an office boy in the Planning and Estimating Office at Leavesden, on the balcony at L2 overlooking the Mosquito Assembly lines. The next Monday was a public holiday: VJ Day, and the final end to the war.

At the end of the year, I was accepted as an apprentice, when Bill Watford had his office in Stag Lane, but the school was dispersed around the Kingsbury Green area: the Fitting section at Carlisle Road, the Drawing Office in a shop there, and Engines, Machine Section and more bench fitting in half of Broadwoods' piano factory on the KG factory estate: Len Rolt presided over bench fitting, Ernie Fresher machines, George Dawes and Bill Young the Engines (all Gipsies of course!)

Honeywood was Chief Instructor and Ned Mitchell was – sometimes – in charge of the DO. During 1946, the school was all moved into Stag Lane to the area which later became the Canteen. The canteen itself was at that time in a hangar-like building outside the main gate. *(Phil Meier says there was a bar and snooker tables, also a boxing ring that was erected when required and was used for local Amateur Boxing Association bouts.)* A new section, Jet Engines, was added at that time to the school, with Len Rolt in charge. I was in the first group to go on it. We spent our time sectioning, entirely with hand tools, a Goblin Engine.

Enduring memories of Kingsbury days: the coke-fired Tortoise stoves which heated (?) the workshop. With the damper pulled out and the bottom flap open, the first six feet of the iron flue pipe would glow red hot and reverberate like an afterburner. The free cocoa at morning break, which the Janitor made – seemingly from powdered milk and brick-dust

– and rock-hard crusty rolls at 1½d each and great chunks of bread pudding from the Van den Plas coachworks canteen next door. We would lust after the glorious sports cars being de-mothballed and put back on the road at that time: Aston Martins, Frazer Nashes, Bentleys and Alfas – and they were just the common ones!

We were working in pairs on the Engine Section: there were 'x' number of Gipsy Major crankcases, '2x' apprentices and 'x-1' sets of components: one had to appropriate the parts from the other pairs while your mate stood guard, with a hide mallet, over your engine, rather in the manner of rooks, in a rookery, building a nest!

Later, after the move to Stag Lane, I worked in the Experimental Assembly Shop on the first Ghost 50 engines for the Comet with fitters Tom Ingledew and Charlie Young under the beady eye of foreman Joe Charles. Joe was never seen without his cap, even though he effected a quick change from his off-duty wear to his working wear. We argued about the colour of his hair; some said he was bald while others maintained he was ginger-headed: no familiarity with the boss in those days!

Other memories of Stag Lane: the racket of the Gipsy Test Beds, the howling draught from the cooling air fans, and the reek of the 100 octane fuel for the Queen 70s. My main memory of L1 was the Gipsy Production line under the redoubtable Harry Home, whose name shall be ranked alongside Ghengis Khan! *(Bruce Bosher remembers him rather well too, especially when he found him decoking his AJS cylinder head among the Gipsy heads)*

Phil Meier (1952-1957)

Previously unpublished

I was born in 1935 and raised at West Wickham in Kent, only a few miles from both Biggin Hill and Croydon aerodromes. The proximity of such strategic sites only being some 15 miles from central London ensured much bombing and general devastation during the War. Thus I saw at first hand many badly damaged houses, buses, trams, cars and aircraft. This I think led to general curiosity as to how things worked. Having survived the War I went to Bromley Grammar School for Boys and scraped through six years almost untouched by 'academia'. The school did have a stripped Boulton Paul Defiant behind the dining hall so it was not a complete waste of time!

In June 1952 with the need to find employment I applied to de Havillands for apprenticeship details. I got an interview at Stag Lane with Messrs. Watford, Honeywood and Reeve. I attended with my father and model Keil Kraft Chipmunk. They queried my knowledge of model aircraft build techniques, things mechanical and engines. Luckily I had materially assisted my father and a neighbour in removing the engine from the family car (a Standard 9 side valve 1048cc engine). The car had been put up on blocks for the duration of the War, but nobody turned the engine over and it was seized. This condition was common in September 1945 and the waiting time for an overhaul was six to nine months. However, if the stripped engine could be delivered to the local borers six weeks' turnaround was possible. This was done with the block being transported in a wheelbarrow! I remember much 'Plus Gas E' (the WD40 of the day) being used. My part was labelling and grouping similar nuts on string.

At this point the panel warned me of the long travel arrangements and explained their schooling requirements. The then current Day Release system was not working, producing few Higher National Certificate successes and taking five years. de Havillands at Stag Lane were initiating a Sandwich system comprising 32 weeks of schooling per year. This involved two eight-week periods of full-time education at Hendon Technical College plus two eight-week periods of night school at the same venue at two hours a night on two evenings a week. DHs intended to set this system up with two groups of students. Group A were ex technical or secondary modern school, whereas my Group B were ex grammar or public school. This system obtained HNC in four years.

Anyway, they let me in and I started work in September 1952. The Stag Lane Technical School certainly had some characters. In Mr Watford's office was the delightful Poppy and even the instructors were memorable: Mr Hughes (fitting), Mr Mitchell (DO) and Mr Rolfe (jet engines). The latter was highly thought of due to his ability to weld/repair cracked aluminium crankcases and chaincases from 'dropped' motorbikes.

As forecast by the interview panel my travel arrangements proved difficult but possible. The DH School and Hendon both starting at 9am necessitated catching a train around 7.30am from West Wickham to Charing Cross. A gallop down the emergency stairs got me onto the Northern Line Tube to Burnt Oak. Another run from Burnt Oak to Stag Lane got me clocking in with 5 or 10 minutes to spare! Works hours were very different with the need to catch the 6.02am from West Wickham. When in the Works and during night

school I frequently was not home until 10.45 or 11pm. The night school periods left me needing sustenance after work and before night school. Mr Watford negotiated leaving around 5pm, but most cafes were not serving anything substantial at that time and there were not the fast food outlets of today. Again Mr Watford intervened and arrangements were made for the Canteen to serve the two long-distance apprentices at 5.15pm. I shall never forget the two options: braised lamb chops and chips or liver & bacon and chips. All was well on the food front!

Another pleasant memory of Stag Lane was the regular Friday blast back to collect our pay. I was usually pillion on a Model 88 or 99 Norton. Along the Burroughs, right on to Watford Way, left down Colin Deep Lane and back to SL via the Edgware Road.

I was upgraded from Aero Engine Fitter & Tester to Engineering Apprentice in 1954, which enabled me to have some say in selecting future Departments.

It was very noticeable once in the Works that there were no longer relatively polite instructors, but real men watching and telling you what to do – often firmly and in the vernacular!

At the time the progression through Finished Parts Stores, Goods Inwards and Experimental Inspection seemed haphazard. In retrospect it gave individual parts provenance – vital in aircraft engines for safe use. In the Machine Shop I spent some time on a Gleason Gear Cutter, an internal and external spliner and a multi-head Cincinnati Vertical Mill producing titanium Gyron Senior compressor blades from solid using a 10:1 larger wooden specimen and a pantograph reduction system. Subsequently when working in the laboratories it seemed more civilised, also the hours were shorter.

I went through the Non-destructive Test, Metallurgy and Material Testing labs. In the latter I did a lot of low-temperature (-85°C) testing of Redux bonded glass fibre samples.

In my last year at Hendon Technical College and in conjunction with the Metallurgy lab I did some photo-elastic modelling (stress visualisation technique) on arrester hook cracking. I believe early Sea Vixen carrier landings showed up some problems.

Finally for my last four months as an apprentice I joined the Piston Engine Development Office (PEDO) under Harry Bickerton (of folding cycle fame). As the office junior I looked after one of the single cylinder test units, read Service Dept reports and generally helped and assisted the other three development engineers. Seeing engines running at full throttle conditions hour after hour was very impressive. Once a fully sanctioned Development Engineer, carrying out acceleration tests on the uprated Gipsy Queen 70 – tickover to full power in less than two seconds – was fantastic.

Thank you de Havilland Engines for providing me with an excellent apprenticeship, giving me great confidence in my judgement on things mechanical.

Phil is now writing an account of his time in PEDO.

Reg Glading (1954-1959)

This is a combination of Reg's letter in the Spring 2004 Newsletter and his 'Engine Race' item in Pylon 80. He reminded us that he was 'the chap who had the old Douglas, OK Supreme, Lighthouse & the ASP'.

Like so many of us, I have many memories of the Stag Lane Training School. When I see Poppy Penn at reunions I am of course reminded of the trio of lovely girls (Snap, Crackle & Pop) who us spotty lads used to find excuses to visit in their office - I don't think Poppy has changed.

We 'Sumpies' (as I understand we were called by Aircraft Division lads) went through the various departments before being introduced to the 'real world' in the factory.

The usual route through the Tech. School was fitting, (hand tool work, supervised by Messrs. Hughes & Sheather), machine shop (mainly on rather tired Myford 'M' lathes; I can't remember the instructors), jet engines (this involved learning the intricacies of the Goblin engine and helping to build a sectioned example supervised by Mr. Rolph. He had a pre-war Triumph Speed Twin motorcycle he had bought new. The department on the ground floor was Machine Tools; lads showing the aptitude graduated here, large lathes, milling machines and grinding machines (activities here were supervised by Mr. Fresher). An incident I still vividly recall concerns the big 'Snow surface grinder' in the Machine Tools section, run by Ernie Thresher. During tea breaks the instructors disappeared into their staff room, the lads all stopped working and sat on the benches 'enjoying' Fred's tea (1d per cup). One or two of the lads would use this time to attend to essential maintenance of the amazing array of motorcycles & ancient cars in order to prepare them for the trip home.

During one of the tea breaks Jim Gough, who was never idle (the most ingenious and capable engineer I have ever met), was working on one of his many projects and decided to use the Snow. At that stage we had not been shown how to use this machine. Anyway, Jim set up his lump of steel on the magnetic chuck and must have accidentally engaged the hydraulic traverse. The wheel, about 12 inches diameter by 2 inches wide crashed into the work-piece and shattered – a piece, roughly half the wheel, exploded out of the machine and impacted a vertical RSJ at head height between Lionel Lockwood and Lou Dight (BEA lads on detachment) who were sitting on the bench drinking tea. [See Louis Dightman's comments on next page!] It all went quiet, the instructors suddenly materialised, thereafter machines were not to be used in tea breaks; no wonder Ernie lost his hair; how did we survive?

In addition to many projects including a pulse jet, a 50cc OHC racing engine, etc., Jim built a 12 inch long model of his 1928 350cc Sunbeam motorcycle. The amazing thing about this was that it actually ran. He had even made press tools for the links of the chains. This model was awarded top prize at the National Model Engineering exhibition. I saw it listed recently in a Sotheby's auction catalogue.

On the first floor was the Drawing Office (the instructor was Mr. Mitchell). Apart from a couple of lecture rooms the rest of this floor was devoted to piston engines and accessories such as magnetos. The main activity was dismantling and re-assembling Gipsy Six engines. Fortunately these were not 'flight' engines but examples that had no doubt finished their working life and could almost take themselves apart. These engines were mounted on turning frames and had work benches alongside with racks designed to hold the component parts such as cylinders, pistons, heads, pushrods etc.

I can't remember the name of the instructor, but he was a formidable man, who was reputed to have worked with W. O. Bentley on racing engines. I didn't ever refer to timing gears as 'cogs' after being forcibly advised "Son, there are no cogs in de Havilland engines, they are gears". Apprentices worked in pairs dismantling Gipsy Sixes, polishing and burnishing most of the already gleaming parts. When the instructor was satisfied that we were ready, we were told to re-build and time the engine. I was paired with Tom Whyatt (a lad from Tonbridge, who had a new Triumph Tiger 110, of which I think the instructor was jealous). Working on the engine beside us were George Rance (from Radlett) and Slim (Colin) Melville. We decided to have a race to see who could get their engine built first. So we really went for it, working through tea breaks, etc. It was a close-run thing. When Tom and I were at the adjusting the tappets stage on our engine we could see that George and Slim were ahead of us.

Tom whispered to me, "they've forgotten to put the pistons in," and sure enough there were the six gleaming pistons sitting in the rack next to their almost 'built' engine. The instructor and the rest of the lads in the department realised what was going on and there was much laughter. We were pleased to come in second. Good job we weren't let loose on flight engines at that stage of our training.

Motorbikes and cars were of course were big things in our lives, I remember one chap (BOAC lad I think) had an OHC Morris Minor: each day it would arrive with water dribbling from a few new places in the radiator: he sussed out that hexagonal pencils just fitted in the honeycomb, so he went round scrounging them pushing them in the rad and snapping them off, eventually the rad. looked as if it was made of wood, tending to overheat due to loss of efficiency!

Happy days... but can there be as much fun for today's apprentices - if there are such anymore? I think we were very lucky.

*We were indeed very lucky!
More reminiscences, PLEASE!*

Louis Dightmaker (1955 -1956)

BEA apprentice

In December 2012 Louis, who was a BEA apprentice on detachment to Stag Lane for basic training, happened upon our website and was amazed to read Reg Glading's account on the previous page:

The wheel, about 12 inches diameter by 2 inches wide crashed into the work-piece and shattered – a piece, roughly half the wheel, exploded out of the machine and impacted a vertical RSJ at head height between Lionel Lockwood and Lou Dight (BEA lads on detachment) who were sitting on the bench drinking tea.

Louis now adds:

Well, it happened too quickly to react in any way until a short while later when a change of underwear was found to be advisable. I do remember that Lionel Lockwood turned very pale but that may have been the result of Fred's awful tea - unfortunately, Fred was discovered peeing in the sink - mugs still in there - and was never seen again as he was transferred out soon after.

I was known as Dight in those days as my father reckoned that as I hadn't made anything significant, I wasn't entitled to be Dightmaker. That's Dutch and sort of translates as "one who makes or mends things."

Another and somewhat similar memory to the Snow grinder:

The large (probably about 5 inches diameter x 1.5 thick) main shaft ballrace bearing from the Goblin - or was it the Ghost? - presented some of us experimental and inquisitive types with an instant challenge. How fast could we spin one up using a standard airline with the trigger thingy on it? Lunchbreak fun again. These bearing assemblies were heavy, very free-running and with the air pressure turned to max, and the nozzle at 45° to the side, it would accelerate up to around 3000 rpm and HOWL beyond audible range. Whoever was holding it would then lower it on to the workshop floor where it seemed to hesitate before starting off, straight as an arrow, leaving a 3-foot plume of sparks as it accelerated and hurtled towards the fibreboard wall some 30 feet away between the shop and the boss's office. The flimsy wall was not built to resist such projectiles at such speed, nor was the outer wall (similar construction) so the big bearing slammed through both and ended up outside in the yard.

Of course, us lads had dispersed and were all looking innocent when Mr Honeywood (I think) came out, newspaper trailing, to enquire "what the ***** was that ? Why are there holes in my office walls"?

Nobody knew.

There was a South African lad in the TS during 54/55 - Pat Diamond. Seemed to be wealthy as he owned a gorgeous shiny new black Triumph TR2. I had just bought my first car, a very sad looking 1934 Austin 7 and I would NOT have swapped it for Pat's TR2 and it may well have survived till now but the TR2 most certainly wouldn't.

Apart from Poppy, there were a couple of lovely girls in the office - one named Pam Wild, but my old brain can't recall the other.

Very intense days, but so good and so very useful.

Alan Mann (1943-1948)

Alan has submitted several collections of reminiscences about the war and about his training to the website **www.memoriesofwar.org.uk** which is described as "an attempt to articulate some of the hundreds of memories that people have shared with us in a more public arena." Type his name in the search box in the header; alternatively a direct link to Alan's page is [here](#)



John Clemmens (1951-1956)

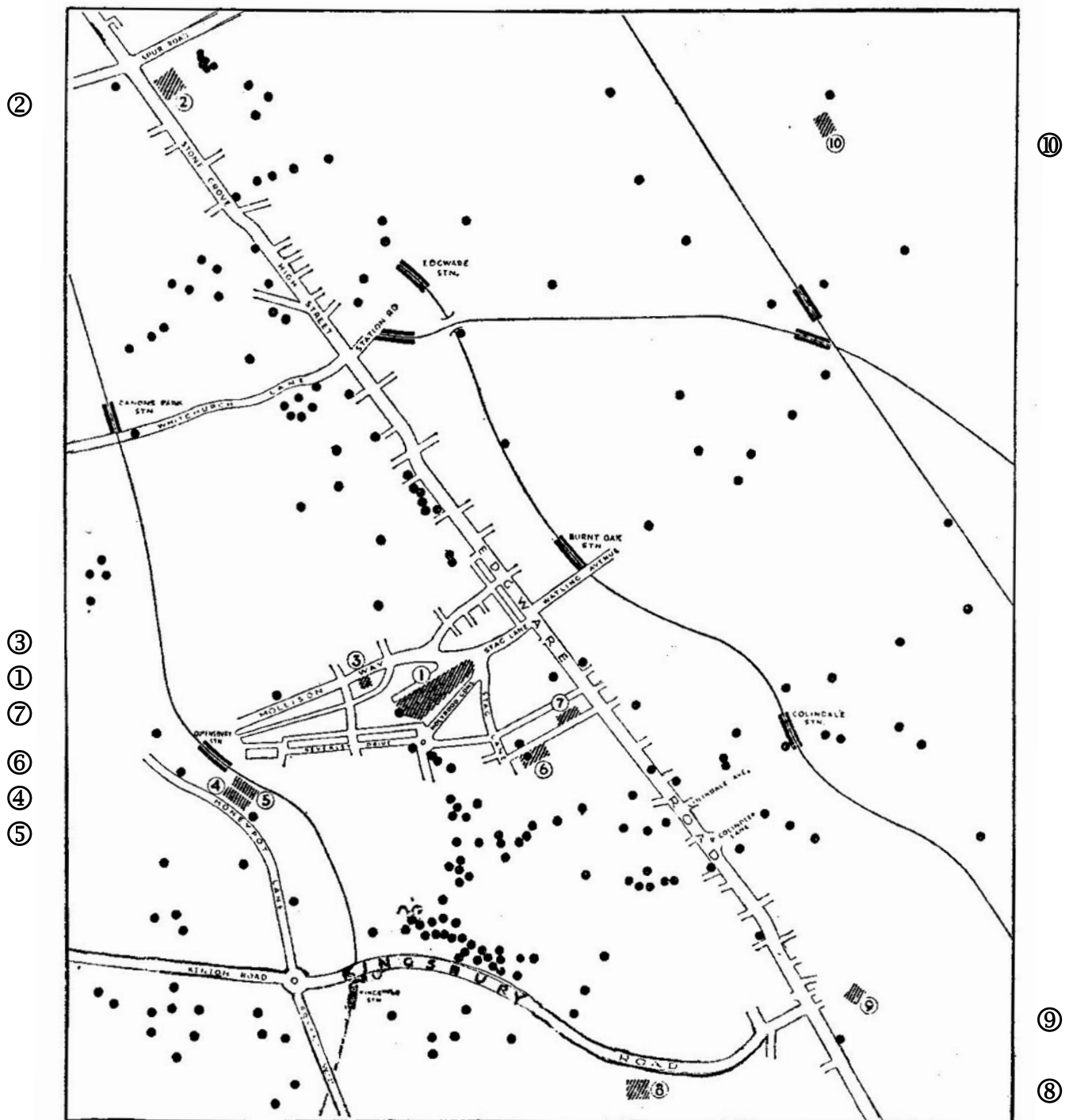


Stag Lane Main Entrance

Taken by John on the last day of his apprenticeship, 3rd September 1956, with his Voigtlander Bessa at 1/250th, f4, using Ilford HP3 film. We used to record such details then; now we just point and shoot with our digital devices.

The Bombs That Missed Stag Lane

This is a copy of a page in the definitive History of de Havilland by C. Martin Sharp. The original is indistinct so numerals have been added in the margins to help in locating the numbered buildings.



The bombs that missed us : This sketch map covers the area, roughly 2½ miles square, surrounding the original Stag Lane factory and nine local dispersals, and shows the 'bombing incidents' during the Second Great War. An incident (a black dot) might be a rocket, a flying-bomb, a gravity bomb or a shower of incendiaries. In these factories, none of which, curiously, suffered a direct hit, 10,000 Gipsy engines were made and 3,800 were overhauled, more than 9,000 Merlin engines were overhauled, 23,000 propellers were made, Goblin production was initiated. Key:—(1) Stag Lane: Gipsy and propeller production, Gipsy overhaul. (2) Stonegrove: Goblin turbine production. (3) Mollison Way: Tech. School classroom. (4) Restulux works: propeller blade shaping. (5) Convenient Bag works: Merlin engine store. (6) Kay Sports works: Merlin repair (bombed before we moved in). (7) Bamford springs works: Merlin repair. (8) Kingsbury Road: Tech. School shops. (9) Nufix works: storage. (10) Carlise House: Administration offices of vibration department.