
# The Auster Story

The former Auster Aircraft Company of Rearsby was taken over by the Pressed Steel Company of Cowley in November 1960 to form part of British Executive and General Aviation Limited. The Rearsby factory is now the main production plant of Beagle Aircraft Limited. During the 25 years that light aircraft have been built at Rearsby, many thousands of various versions of the familiar Auster's were built and subsequently found homes in many corners of the World. Large numbers of these aircraft are still in operation and the Beagle Service and Spares Departments will continue to assist in keeping these aircraft operational wherever possible. Many recipients of the 'News' will have been associated with Auster's at some time or other and ice thought this might be an opportune time to include in our magazine something of the history and achievements of that Company. The following article is the first in a series by Norman Ellison

# Contents



## Taylorcraft U.S.A. and the County Flying Club

Auster and Rearsby — throughout the Aviation World these two names are known as the name and home of the most famous British light aircraft produced since the Second World War. To most people the single engine high wing light aircraft seen on nearly every civil aerodrome are just "Auster's", probably due to the fact that they all look somewhat alike, and only the enthusiast would appreciate the subtle differences of the individual types. However, as with a great many other aircraft manufacturers only a small proportion of the original designs ever reached the production line, and those that were produced in quantity were all developments of the original product. The object of this narrative therefore is to give a brief history of the Company, with a note on the subsequent events at Rearsby, and to give an account of all the designs produced by the Design Office.

The history of Auster Aircraft begins not in England, but in the United States as far back as 1928 when C. G. Taylor, an Englishman from Nottingham, opened a factory at Bradford, Pennsylvania to manufacture aircraft of his own design. One of the directors of the board of the Taylor Brothers Aircraft Corporation was William T. Piper, who later became treasurer of the company when it was re-organised after the American depression as the Taylor Aircraft Company.

In 1930 C. G. Taylor designed the Cub and this was produced in various forms up to and through-out the war, and became the design upon which most of the pre- and post-war Piper high wing aircraft were based. In 1936 C. G. Taylor sold his share of the company to W. T. Piper, and he moved to Alliance, Ohio where he founded the Taylor-Young Airplane Corporation, and the Taylor Aircraft Company, the original firm, changed its name to the Piper Aircraft Corporation.


Taylor's next design was the Taylorcraft Model A, a two seat side by side aircraft, a layout which he had first tried in 1929 but which had to be abandoned due to the depression. This new aircraft was a success and was produced in large numbers, some of which found their way to England. One of these Model A aircraft was bought in 1938 by the County Flying Club at Rearsby, Leicestershire. It is here that the connection between Rearsby and Taylorcraft — later Auster's commences, but a note here about this club is appropriate.

The County Flying Club was formed as the Flying Pou Club in 1935 at the height of the Flying Flea craze in this country. The initial moves were made at the beginning of October with the announcement in the 'Leicester Evening Mail' on October 3rd that an enthusiast would like to form a club to build a Flying Flea. A meeting was subsequently held at the former 'Stag & Pheasant" Hotel in Leicester on the 24th October and 40 founder members were enrolled. Construction of the Flea started immediately in a local tannery on Frog Island, Leicester, and a flying ground was found near the Craven Lodge, Melton Mowbray.

After the general Flying Flea ban was imposed the club sought new equipment, and the use of a Kronfield Drone and Kronfield Trainer was acquired but this necessitated a larger airfield. The well-known Leicestershire aviator Mr. (late Sir) Lindsay Everard came to their aid and in 1937 gave them the use of some of his land on the Gaddesby Lane just outside Rearsby. The club then changed its name to the County Flying Club, and Lindsay Everard was later appointed President of the club. He was also President of the Leicestershire Aero Club and the Member of Parliament for the Melton Division of Leicestershire.

The County Flying Club initially moved to Ratcliffe whilst work was put in hand to make the Rearsby airfield ready for use by 1938. The hangar from Melton was brought over and erected and a small shed built for use as a clubhouse. The Flying Flea, being of no further use, was ceremonially burnt as the centre piece of the club's 1937 Guy Fawkes celebrations. The new airfield was levelled and drained by Messrs. En-Tout-Cas Ltd. of Syston, to give an area of 96 acres of "beautiful level flying ground". This quotation is taken from the publicity booklet issued by the Club for the 1938 season, and although by 1937 standards it probably was excellent compared with most airfields, it is presumed that the now well-known hollow on the airfield developed one dark foggy night during the war after the airfield was extended.

The booklet also announced that a well-appointed clubhouse was to be built and this was finished in time for the official opening of Rearsby Aerodrome. The Walker Brothers of Sileby, with the help of the members, built this clubhouse, and is still in use today as the main canteen of Beagle Aircraft Ltd. The whole aerodrome was completed at a cost of about £1,000 which shows the enthusiasm there must have been amongst the club members. There was also a town clubhouse at 4 New Bond Street, Leicester, and the aircraft fleet owned by the Club was increased by the purchase of three American Taylor Cubs.

The official opening of Rearsby aerodrome took place on Saturday the 23rd July 1938, and was followed by an air display, which was so successful that it was repeated the following day. Amongst those taking part in the display were Alex Henshaw, that year's winner of the Kings Cup, and Baron de le Grange, President of the French Aero Club, who had flown over for the occasion in his Farman aircraft. Air Commodore J. A. Chamier carried out the opening ceremony and it was announced that a new Government scheme was to be set up to train pilots. This scheme was called the Civil Air Guard and its object was to prepare an Air Force reserve for use in an emergency. It enabled people to fly at the low cost of two shillings and sixpence an hour, and the flying club to which these pilots belonged earned a subsidy of £30 to £50 for each pilot completing his training.

The County Flying Club took part in this scheme from October and this enabled the Club to purchase additional aircraft. Initially an American Taylorcraft Model A was bought and later the locally produced Taylorcraft Model C's. However all club flying ceased upon the outbreak of war and the Civil Air Guard scheme was disbanded. All the club's aircraft were then stored in the garage of Crawford, Prince & Johnson Ltd. on the Melton Road in Queniborough.

After the war the County Flying Club amalgamated with the Leicestershire Aero Club.

## The Formation of Taylorcraft Aeroplanes (England) Limited

As mentioned in the previous chapter, the first American Taylorcraft arrived at Rearsby in the latter half of 1938 and this created a great deal of interest amongst the club members. One, Mr. A. L. Wykes who had been a pilot in the First World War, was so impressed by the Taylorcraft that he decided to see if he could arrange to manufacture these aircraft in England. For this he was fortunately placed as he was already Managing Director of Crowthers Ltd., Thurmaston, Leicester, a company, which he had started in 1919 with Mr. F. Bates for the manufacture of textile machinery.

The decision to enter the World of aircraft was a sudden inspiration of A. L. Wykes, and after preliminary arrangements by cable with the American company the firm of Taylorcraft Aeroplanes (England) Ltd. was registered as a private company on the 21st November 1938. The nominal capital of the new company was £15,000, and the entire production and selling rights were obtained for the British Empire and Europe from the Taylor-Young Airplane Corporation, Alliance, Ohio and the Fairchild Aviation Inc., New York. The two directors of Crowthers, together with Mr. P. Wykes — uncle of A. L. Wykes, became directors of the new company, with the Registered Office at Britannia Works, Thurmaston, Leicester.

Mr. A. L. Wykes, known to all as "A. L.", went to America to finalise the licence agreement, study the methods of production, and generally to get to know the aircraft they had decided to build. Whilst he was over there he purchased 50 engines, a main fuselage jig, and he obtained drawings and full details of materials required. These were all sent back to his uncle who purchased all the materials. These together with the jig from America were placed in some spare buildings at the rear of Britannia Works which became the centre of Taylorcraft's activity.

A. L. also purchased one of the American firms' new aircraft, the Taylorcraft Model B, or Taylorcraft 50 as it was generally known, and it was decided to make this new version in England rather than the Model A.

Manufacture started at Thurmaston at the end of February 1939 with hardly anyone on the firm having had previous aircraft experience, but A. L. on his return from America brought with him an engineer from Taylorcraft and together they gradually sorted out the production line. The first aircraft was completed on the 24th April and was taken by road to Sir Lindsay Everard's aerodrome at Ratcliffe where, after assembly, it made its first flight on the 3rd May with Mr. G. Wynne-Eaton at the controls. A. L. then took his uncle up for a flight and promptly looped it. It was later delivered to the County Flying Club at Rearsby.

As many refinements and alterations were incorporated in the new British aircraft, including the

use of 45 ton steel tubing in place of the American 22 ton standard, and the use of wing spars "twice the thickness of the American spars", it was decided to call the new aircraft the Model C, and the word "Plus" was added for good measure. The purchase price of the Taylorcraft Plus Model C was £500.

After the first flight of the prototype, production was built up to about one aircraft per week from the small works. The test flying was carried out at Ratcliffe by the test pilot Albert Coltman and the ground engineer Albert Codling*, with deliveries of the aircraft undertaken by A. L., and later Miss Toni Strodl. Ratcliffe was used for test flying until the move to Rearsby in 1940

0.23 Civil Plus C's were built before the type went out of production in August 1939. Six were delivered to private owners and the remainder were sold to flying clubs, namely the County, West Suffolk, Coventry, Luton, Romford, Derby, and the West Mailing clubs, and the Wiltshire School of Flying. The 11th aircraft built was modified to have a 90 h.p. Blackburn Cirrus Minor I engine and was supplied to the R.A.F. for trials, as T 9120.

The R.A.F. had in 1939 carried out trials at Larkhill, the School of Artillery, to test modern methods of Artillery Observation. The idea of a Gunner piloting himself in a light aircraft whilst observing the fire of guns under his command originated amongst members of the Royal Artillery Flying Club. This Club consisted of Gunner officers who had learnt to fly on light aircraft and autogiros at their own expense.

The Club was formed in November 1934 and the President was Brigadier H. R. S. Massey, who was Brigadier, Royal Artillery, Southern Command, and the secretary was Captain H. C. Bazeley R.A. These two officers were largely responsible for formulating the plan of using unarmed light aircraft for A.O.P. purposes. One large problem was under whose control would the A.O.P. aircraft operate? Should they be Gunners seconded to the R.A.F., or should they be formed into an "Army Air Arm"? On two points they were certain, that the pilots must be trained gunners who would know the capabilities of their own guns, and also be completely up to date with the current tactical situation, and secondly, that the aircraft must be able to take off from unprepared ground with a short take off and landing run.

As a result of these plans being submitted to the War Office by the General Officer Commander-in-Chief, Southern Command, the War Office asked the Air Ministry for trials to test these theories. In December 1938 Captain Bazeley and two other Gunners were seconded to the R.A.F. and in February 1939 trials were carried out with Audax and Lysander aircraft. These aircraft were found to be too fast and too heavy for A.O.P. work and further trials were carried out during the summer of 1939 with lighter aircraft and autogiros. The Taylorcraft seemed to show the most promise of the aircraft tested but its main drawbacks were the fact that it was not fitted with flaps, the vision was poor in the upwards direction and virtually nil in the rearwards

direction.

Meanwhile Taylorcraft followed up T 9120 by producing the Plus Model D, which was virtually the same as the Model C, but it was fitted with the Blackburn Cirrus Minor engine. The first aircraft was granted its certificate of Airworthiness four days before the outbreak of war, and so the Plus Model D as a type never had a pre-War life.

Albert Codling, previous to his joining Taylorcraft, was the ground engineer for Sir Lindsay Everard and was loaned to the County Flying Club. He became the Chief Inspector at Rearsby of Beagle Aircraft Ltd., and thus has a longer association with Rearsby than anyone else. Two other employees who joined Taylorcraft in 1939 and are still employed at Rearsby are Herbert Thompson, now Chief Development Planning Engineer, and L. (Gus) Morris, now Tool Controller and part-time test pilot.

## Army Trials

On the outbreak of the war on the 3rd September 1939 the Government stopped all private and club flying, and the manufacture of civil aircraft officially came to a halt. This left Taylorcraft with nothing to do. Eventually, after some weeks had elapsed, the firm obtained a contract from the Standard Motor Co. for the manufacture of seats for Airspeed Oxford trainers and another contract was later received

for the manufacture of fins for the Hawker Hurricane.

Meanwhile the Army had been pressing the Air Ministry for further trials of light aircraft and these were scheduled to take place at Larkhill in December. Taylorcraft were asked to supply more aircraft for these tests, and they managed to build these from parts, which had been nearly completed at the outbreak of the war. Altogether six PLUS D aircraft, complete with Army radio sets, were supplied for test and acceptance trials.

The French Air Ministry were also interested in the Taylorcraft, and a Count, representing the French Government, came over to see the aircraft. The day before he arrived Ratcliffe was covered with the deepest snow of the winter, and A. L. who was in London, was informed that take-off would be impossible. He then asked for skis to be fitted and by the time he reached the aerodrome the following day they had been designed, made, and the MODEL C was ready to fly. This was the first time a Taylorcraft had flown on skis in England, and the information gained from this experiment came in very useful later in the war. Although the French Government was very impressed with the aircraft, France capitulated before any order could have been received, and so Taylorcraft still awaited the large demand for the aircraft which they felt must come at any time.

In the summer of 1940 the firm was asked if it had any room to undertake the repair of aircraft parts. After agreeing to do this new line of work Taylorcraft became a Civilian Repair Unit, repairing Tiger Moth aircraft at Thurmaston and in a barn at Syston. This was empty at the time and was taken over to provide extra space. The first Tiger Moth was completed and dispatched to the R.A.F. in October 1940. Crowthers' main factory now became No. 1 Works and was also the main machine shop, No. 2 Works were the buildings at the rear of Crowthers and these were used for the assembly of the repaired Tiger Moths. No. 3 Works, to-day a woodworking machine tool manufacturer's factory, became the welding and detail fitting shop.

Towards the end of 1 940 Taylorcraft were asked, by telephone, if they would undertake the repair of Hurricanes. Not having had any previous experience with stressed skin, light-alloy aircraft they asked the authorities to spare them a crashed Hurricane to study. Two complete damaged aircraft arrived by road the following morning! The firm agreed to repair the Hurricanes, but additional floor space was required for this work. As a result they were granted the use of a factory in Mountsorrel as a sheet-metal shop, the workshops of En-Tout-Cas Ltd. at Syston, and Rearsby Aerodrome. Ratcliffe aerodrome was by this time used by the A.T.A. as a Ferry Station. Mountsorrel became No. 4 Works, En-Tout-Cas Ltd. No. 5 Works and Rearsby No. 6 Works, where a new hangar, to day the main assembly hangar, was planned and built

.

This was used for the repair of the Hurricanes and the airfield was extended towards Gaddesby to cater for the longer take-off run required by these aircraft. The first Hurricane was delivered to the R.A.F. in February 1 941. At the same time all the tools and jigs for the MODEL 0 aircraft were brought up to Rearsby from Thurmaston and laid out in the old County Flying Club hangar.

This last operation paid dividends a few months later when an official from the Air Ministry came to Taylorcraft to see if they had any civil aircraft in store to impress into the R.A.F. for communication duties etc. At this time many pre-war light aircraft were taken into the R.A.F. for general duties, the R.A.F. having no light aircraft at all at that time. The official was only mildly interested in the PLUS C aircraft until he was shown all the jigs and tools in store. When it was realised that spares could be provided for the aircraft, the firm was asked to obtain from all over the country as many PLUS C's as they could, service and repaint them, and deliver them to the R.A.F. All except one of the PLUS C aircraft were found and impressed, apart from two, which had been destroyed. Taylorcraft were then given a contract to convert most of the MODEL C's to MODEL 0 standard, complete with radio sets, and the last aircraft so converted was handed over to the R.A.F. on the 11th October 1 941.

Meanwhile, in February 1940, 'D' flight, Air Observation Post at the School of Army Co-operation at Old Sarum, was formed following the successful tests of the Taylorcraft aircraft in December, and the Flight was flown to France on the 19th April 1940 and based at Mailly. Trials were to be carried out against a real enemy. On the 9th May Captain Bazely and Major A. G. Matthew flew up to the Saar to do preliminary reconnaissance,

but in the early hours of the 10th May the German offensive started. This upset all the plans of the trials, and the Flight was finally withdrawn on the 20th May and flown back to Old Sarum.

However, the idea of using light aircraft for A.O.P. work was not dropped and after considerable discussion at high levels, and also the study of similar work taking place in America, it was decided to go ahead. A contract was placed with Taylorcraft for 100 aircraft, and they were asked to think of a better name for the aircraft, as 'PLUS MODEL D' was not suitable for military use. A. L. suggested 'Icarus' after the early mythological aviator and son of Daedalus, but the Ministry pointed out that he had flown too high and too near the sun and his wings had melted and fallen off. They suggested 'AUSTER', the name given in Roman times to a warm dry south-westerly wind, and so the name AUSTER became associated with Rearsby.

The AUSTER Mk. 1 was not considered to be the ideal aircraft for A.O.P. work, for reasons stated before, and so the Ministry for a better aircraft undertook a search. The American A.O.P. aircraft the Stinson Vigilant was considered by some to be more suitable as it had many high-lift devices and a very good slow-speed performance, but it was large and complicated. However, a large number were ordered and the first batch was shipped over to England. They were stowed beneath a load of cheese and, as a result of a rough crossing, they were found on unloading to have been flattened! The few that survived this ordeal were assembled and flown against the AUSTER in trials but although they were good aircraft to fly they were too big for the Army's requirements. The AUSTER therefore was accepted as the A.O.P. aircraft for the Royal Air Force.

## Wartime expansion

In order to produce the


AUSTER Mk. 1, Taylorcraft required further factory space, as the existing space was already full catering for Hurricane and Tiger Moth repairs. A 'boot and shoe' factory was therefore taken over, in Broad St. Syston, and all the jigs and fixtures were taken out of the old hangar at Rearsby and transferred on February 22nd 1942 to the new factory, which was named No. 7 Works. The first aircraft left this new production line on the 29th April, and was test flown at Rearsby on the 7th May.

The new factory was not set up easily however and in the rush of wartime the initial temporary production layout created a few major problems. About four weeks after production had started at No. 7 Works a complaint from a lady, whose house was next door to the factory, was brought to Mr. K. Sharp, the Manager at No. 7 and later a Director of Taylor-craft. The lady said she realised that they were very busy making aeroplanes for the war effort, but her chickens in her back yard had turned green! Upon investigation it was found that her whole garden was bright green, due to the fact that the extractor fans from the priming paint booths took all the excess paint straight into her garden. In the rush to get the factory working someone had forgotten to find out what was on the other side of the wall when the spray booth fans had been fitted! In spite of all the difficulties however, the production rate increased and the last AUSTER Mk. 1 was completed in December 1942.

The North African campaign opened at Casablanca with Operation 'Torch' on the 8th November 1942, and on the 12th the follow-up convoy reached Algiers. On board was a section of No. 651 A.O.P. Squadron under the command of Major Bazeley. It was here in North Africa that all the A.O.P. theories and exercises that had been worked out in England over the past few years were tried out and either proved or modified in the light of experience until an effective A.O.P. system was in operation. AUSTER'S then became essential items on every front in the war and served in many parts of the world. Apart from doing the ordinary job as Air Observation Posts, AUSTER'S did many other jobs such as communications, message dropping, cable laying, and V.V.I.P. transport when H.M. King George VI was flown from Radda to Sienna in Italy in July 1944.

At the same time that the A.O.P. Squadrons were improving their techniques Taylorcraft were endeavouring to improve the AUSTER, which, as mentioned before, had many snags for A.O.P. work. Two alternative engines of greater power were considered for the AUSTER, the American Lycoming 0-290

, and the D.H. Gipsy Major, both of 130 h.p.


These two AUSTER versions were known as the MODEL F, or AUSTER Mk. 2, and the MODEL E AUSTER Mk. III.

The Gipsy Major version was completed first and flew for the first time on 28th September 1942, and the Lycoming version flew later in the year on the 30th December. Both machines were evaluated by A.A.& E.E. at Boscombe Down but the Lycoming engines, being of American manufacture, were in rather short supply due to the efforts of the U-Boats in the Atlantic. It was decided to go ahead with the AUSTER Mk. III, which was immediately put into full-scale production. Split-flaps and a cabin heater were introduced and the rearward view was improved by the introduction of larger perspex windows behind the pilot, although, as a first step, a blister was fitted on the starboard side of the cabin roof. This was fitted to an AUSTER Mk. 1 but was not considered to give enough vision.

The first production AUSTER Mk. III flew in January 1943 and production continued throughout 1943 until December, when a total of 469 aircraft had been completed, but the AUSTER Mk. III was not considered an ideal A.O.P. aircraft, as the rearward view was still poor. In February 1943 Taylorcraft were again requested to look into the possibilities of improving this matter, and a radical redesign of the cockpit area took place. The 'mock-up' produced was accepted by the Ministry and a request was received for a flying version. This was completed, together with the fitting of a 130 h.p. Lycoming engine — these were now coming into England readily — and this aircraft became known as the MODEL G, or AUSTER Mk. IV, with markings MT 454. It flew for the first time on May 3rd 1 943, and production of the AUSTER

Mk. IV commenced in December.

Other Taylorcraft events in 1 943 were the decision on the 16th June to proceed with the MODEL H, but in May the first repaired Hawker Typhoon was delivered to the R.A.F., and these gradually replaced the Hurricanes in No. 6 Works, the last Hurricane being delivered in October. The MODEL H was an assault training glider version of the AUSTER Mk. III in which the engine was replaced by a glazed front portion with a seat for one person in front of the two main seats. This glider was first tested at Rearsby on the 6th July. It was very similar to the American Taylorcraft TG-6 and was built as a private venture, but it was never put into production as Ministry requirements had changed even before it had been evaluated.

1944 saw AUSTER'S in operation on all battlefronts. After the battlefields of North Africa had been cleared up, the A.O.P. squadrons moved over to Sicily and Italy. Two days after 'D Day' on the 6th June, 662 Squadron A.O.P. landed in France. 656 Squadron had left England in September 1943 for India and went into action, in Burma, for the first time on 28th January 1944. Operating AUSTER'S in the severe hot climate of the jungle posed many problems that had not been met before. Cold climates did not seem to affect AUSTER'S very much — apart from the fact that any slight draught in the cockpit felt about ten times colder than it really was, but in hot tropical climates the AUSTER'S suffered worse than the pilots. In 1944 the fabric lasted about four months in the jungle before it rotted through. The wooden propellers and the cabin perspex needed replacement after the same amount of time, and the wooden wing spars had to be watched continuously. In some instances if the aircraft had been delayed en route by sea the fabric and the spars had begun to rot even before the aircraft reached the front line. However, new aircraft dope was introduced and this solved many, but not all, of the problems.

In all there were twelve A.O.P. Squadrons and they served in France, North

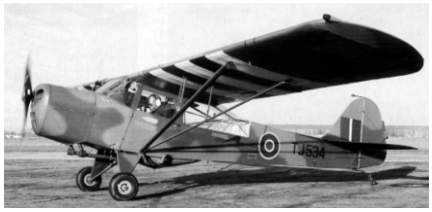
Africa, Sicily, Italy, Austria, Belgium, Holland, Germany, India, Burma, Malaya and Java. 594 officers were trained as A.O.P. pilots up to V.J. Day, and only 61 were killed whilst flying, 24 of these being non-operational casualties. 118 officers received awards for bravery.*

In March 1944 the last repaired Tiger Moth was delivered to the R.A.F., and the repair department at Rearsby was then fully occupied with the repair of Typhoon aircraft. The AUSTER Mk. IV continued in production until the beginning of May 1944 when 245 had been built. The AUSTER that replaced it on the production lines at Syston was probably the most important AUSTER ever produced.

## The Auster Mk V

The Auster V, known also as the Taylorcraft Model J, was developed directly from its predecessor the Auster 4. It was practically the same as the Auster IV but a blind flying panel was fitted to enable it to be officially used as a communications aircraft. The trimmer was also moved from its position underneath the tailplane and introduced as a trim tab on the port elevator. Production commenced in May 1 944 and built up to an average of about 14 aircraft a week.



The new type of aircraft had only just started to come off the production line when a great tragedy struck the firm. On May 14 a military display was held in the Abbey Park, Leicester, as a part of Leicester's 'Salute the Soldier Week', one of the many wartime propaganda campaigns held to help the National Savings Movement. One of the items in this display was a competition between the Pioneer Corps and the Home Guard on an assault course, and during this two Auster's flew over and gave a demonstration of Army Co-operation flying and general aerobatics. A. L. Wykes and Jeff Edwards, who was Taylorcraft's Chief Test Pilot, flew them. During the aerobatics A.L. made a series of steep turns but then, from onlookers' reports, it appears that he completely stalled at the top of a turn but there was not sufficient height to recover. The aircraft dived into the ground at the back of the railway embankment and A.L. was killed instantly.

Production of the Auster V continued throughout the remainder of 1 944, and in July, after the initial snags had been cleared up, a mobile assembly line was introduced for fuselage assembly. The speed of the line, which was electrically powered, was adjusted to a speed that produced four fuselages a day and it had its first production run on July 14. This was probably the first and only time that light aircraft in this country had ever been built on a basis resembling car mass production. More Auster V aircraft were produced than any other single type of Auster, and the Auster V thus became the standard airframe from which the post-war aircraft were developed — except the Auster A2/45, Auster 9 and the Agricola.

Another event, which occurred in 1944, was the introduction of the ambulance version of the Auster and this modification was later carried out on many Auster IV and V aircraft as and when it was required. The first aircraft so modified was tried out on June 16 at Rearsby before representatives of the M.A.P. Carrying a crew of two and a 6 ft. 2 in. man on a stretcher the aircraft took off in 60 yards. The time for loading was 7.5 seconds and unloading 9.5 seconds.

Later on in the year another drastic modification took place on the basic aircraft. An Auster 5, TJ 207, was fitted with a pair of floats. The idea behind the floatplane conversion was that it might be of use in the Far Eastern area of operations. In the Experimental Department of No 7 Works the aircraft was fitted with a set of floats taken from a DH Queen Bee aircraft. It was then taken to an NFS static water tank in Rearsby for floatation tests, and on November 17 it was dispatched to the works of Saunders-Roe Ltd, at Beaumaris, Anglesea, and test flown there for the first time on the 21st. Following Ministry trials at Helens-burgh on the Clyde two more aircraft were built, but by the time they had been ordered, built and delivered the progress of the war in the Pacific had made the type redundant. The aircraft were also somewhat underpowered and unable to take off with full AOP loads in anything other than calm water.

With the end of the war in sight, in Europe at least, the Design Office at Taylorcraft began to think ahead to what the firm should produce for the post-war pilot and flying club. Initial moves were made by A.L. before he was killed. The aircraft under discussion at that time was in one way a complete break with tradition as it was a low-winged aircraft, but in fact it was a basic Auster airframe with the wings moved to locate on the bottom longeron and the lift struts attached to the top longeron. The fairings along the fuselage were greatly revised, and spats were to have been fitted. After the death of A.L. however it was pushed into the background by urgent wartime commitments.

However, Taylorcraft's did make a return to the civil market in 1944, even if it was only in a very small way. In August two Auster 5 aircraft were taken from the production line and, still camouflaged, were registered G-AGLK and G-AGLL and supplied to the reformed Ministry of Civil Aviation for use in commercial licence testing work at Gatwick. Also produced in 1944 was an Auster V fitted with a DH Gipsy Major 1 engine and this aircraft, TJ 187, was used as the firm's hack aircraft.

In September 1944 the Allies launched their offensive to cross

the Rhine into Holland. Whilst two of the crossing those at Grave and Nijmegen, were successful and were subsequently broadened and developed into a corridor, the air crossing at Arnhem, to the North of the other two, was a failure and was later evacuated. As a direct result of this the advance into Northern Europe was held up, and then before it had properly developed again the severe winter of 1944-5 set in and virtually stopped all forms of transport. By January even Auster's were finding it difficult to take-off. Hence Taylorcraft was asked to provide some skis to enable the Auster's to operate from snow-covered airfields. The skis were designed, manufactured and tested by Taylorcraft and were flown to France where they arrived only seven days after the request was received at Rearsby.

The Auster V aircraft continued in production into 1945 and further modifications were carried out on the aircraft to enable Auster's to do extra tasks. One modification was the fitting of equipment to pick up mail and messages, first tried out on TJ 645, and another was a cable-laying version, which carried enough wire to lay a continuous cable for four miles. With all these extra roles for which the Auster V was being adapted, it became obvious that further redesign was needed on the basic aircraft to enable all these roles to be completely successful. The design of the new Auster, the Model K later known as the Auster 6, was started towards the end of 1944 and construction of the new model commenced in the Experimental Department in January 1945


The differences from the Auster V were the greatest yet between any of the Auster Models. The Lycoming engine was replaced by a DH Gipsy Major 7 of 145 h.p., increasing the power by 15 h.p., and the split flaps were replaced by external flaps giving' It a completely different appearance from any other Auster before or since. TJ 707, the prototype, was completed at the end of April and the first flight was on May 1, 1945, but production did not start until late in the year.

## Peace again, and a change of name

During 1945 as the end of the war came in sight production of the Auster V ended after a total of 790 had been built, and the Design Office once more turned its thoughts to the type of aircraft the firm could produce for the civil market. The first object was to obtain an engine suitable for economical operation, and the one chosen was the Blackburn Cirrus Minor 2. This was first fitted into an Auster V aircraft by Blackburn Aircraft Ltd for use as a test-bed. All the military equipment was deleted and the aircraft was registered G-AGOH.


Rebuilding a Plus Model D carried out the next stage of the development. In April the remains of G-AFWN were taken out of storage and the fuselage frame was put back into the main jig and modified up to Auster V standard. Then the internal cabin was fitted with two seats at the front and a sideways facing bucket seat in the rear of the cabin. The Perspex in the rear windows was restyled to conform with the fuselage tubes and a one-piece Perspex windscreen was introduced. This latter item had been originally introduced on the experimental two-seater aircraft G-AGPS, an aircraft which resembled the original Plus Model C. No model number was ever given to 'GPS and it was used as the firm's hack machine, and later by the Auster Flying Club.

The new aircraft developed from the Auster V was called the 'Taylorcraft Auster V Series J/1 Autocrat', later shortened to 'Auster J/1 Autocrat'. The model number J/1 indicated the first major alteration to the Model J. Autocrat production commenced soon after the Auster V production had ended and towards the end of 1945 the first few were ready for delivering, the first one G-AGTO being delivered to Mr T. W. Shipside at Tollerton in December. The first 50 J/1 aircraft were sold for £850 each, at a profit.

In November 1945 the last Typhoon was delivered to the RAF, and with this ended the repair by Taylorcraft of other manufacturers' aircraft apart from a small contract to repair Kirby Cadet gliders — these were commenced in May 1945 and ended in April 1946. The total number of aircraft repaired during the war was 368 Hurricanes, 281 Typhoons, 339 Tiger Moths, 235 Auster's, 1 Hornet Moth and 11 Kirby Cadets. Parts were also


manufactured for Hurricanes, Spitfires, Oxfords, Albermarles, Tiger Moths and the Hawker Audax.

On January 1, 1946 civil aviation commenced again with official blessing, and Taylorcraft found themselves supplying Autocrats against a flood of orders from post-war pilots all eager to get into the air again, many of them having had air experience in the A.O.P. Auster's during the war. Many Autocrats were 'sold' by the Post-War Sales Scheme. This was started in 1943 and people who were interested in owning a light aircraft when the war was over put down a deposit of £25 and their names were placed on a list. After the war if the 'purchaser' changed his mind and did not want his aircraft he was refunded £20, but if the firm had not been able to produce the promised aircraft all the £25 would have been refunded. As it turned out, after three years or more the 'purchaser' suddenly received a letter which said 'Your aircraft will be ready for delivery next week. Please confirm order and send £850 less £25 deposit'. Amongst others this happy experience happened to Lt Cdr J. J. Dykes, RN who took delivery of G-AGXB. He had 'ordered' his Autocrat one morning in 1943 when he was ferrying a Spitfire from Lee-on-Solent to Scotland, and had to divert off course due to bad visibility and just dropped into Rearsby to wait for the fog to lift!

With the firm settled once more into the production of civil aircraft it was realised that the name of Auster was better known around the world than the name of Taylorcraft. As a result of this, and also taking into consideration the fact that the aircraft which were then being produced were quite different from the Taylorcraft aircraft that were being produced in America, it was decided to change the name of the company from Taylorcraft Aeroplanes (England) Ltd. Accordingly, on March 8, 1946, the name of Auster Aircraft Ltd was adopted.

Autocrats were then produced to a world market, and at the same time Auster 1's that had been declared redundant by the RAF were being converted to civil aircraft and were sold as Plus Model D's. Many of these ex military aircraft had had very few flying hours having been stored for several years by the Air Force, as they had been replaced in service by the Auster III.


On the design side attempts were being made again to produce a two-seater aircraft similar to the pre-war Plus Model C, and as a first step several Auster I 's were temporarily converted to have a 55 h.p. Lycoming engine in place of the Cirrus Minor. After trials with these aircraft the Design Office proceeded to modify the basic Auster 5 airframe to a two seater and the result was the Model J/2 Arrow.


It was in effect a production version of the un-named two seater G-AGPS, but was powered by a 75 h.p. Continental engine and had, in the opinion of many, the best lines of any Auster ever produced. In an attempt to get nearer still to the pre-war standard a 65 h.p. Continental was fitted into a J/2 airframe. This aircraft was called the Model J/3 Atom but flight trials showed it to be underpowered and so only the prototype was produced. Production of the Arrow started towards the end of 1946 and first deliveries were made in December. The Arrow was only put into limited production, however, for in 1946 England had severe limitations on anything imported from America, so the majority of the Arrows were produced for the export market, as the import restrictions did not apply if the engine was only imported for re-export. In order to satisfy the two seat needs of the home market a standard J/2 airframe on the production line was fitted with a Blackburn Cirrus Minor 1 engine. The resulting aircraft had a much better performance than the Arrow, and it was given the model number J/4.


It was put into production alongside the Arrow and first deliveries were made at the end of the year.

One event, which took place in 1946 on the military side, is interesting. This consisted of a series of trials in March to launch a light aircraft from a LST ship. The first stage of these trials at Farnborough consisted of Auster V TJ 537 flying off a 165 ft track in the form of three 'U' shaped channel sections, one for each wheel, fixed to the ground. The second stage,

trials on an actual ship, never took place as far as is known, but one can imagine an Auster precariously mounted on an LST rolling around in a heavy swell somewhere in the North Sea, with a slightly ill pilot only too anxious to take off!

## The Difficult Years

At the beginning of the New Year prospects for 1947 seemed very good for the company as it had a new name and a range of five types in production, but events proved otherwise. In January there was a lengthy power failure to the Rearsby factory, and then on Sunday night the 16th of March Rearsby was struck by a very severe gale. A large number of aircraft were picketed around the airfield at the time and several aircraft were blown from their moorings, one being found the next morning on top of the main Drawing Office and another in the field across the main road. The result was that several aircraft were completely destroyed, and a total of 72 aircraft were damaged.

About this time, following a great boom period immediately after the war when flying clubs all over the world were starting up or reforming after the inactivity of war-time and when a new generation of private flyers had acquired their new aircraft, the world markets began to stabilise and reached a point where fewer new aircraft were required. At the same time the post-war run down of the Air Forces of the Allies was in full swing and there were many cuts in orders still outstanding from contracts that were negotiated during the war. Also large numbers of aircraft surplus to the peacetime requirements of the R.A.F. were coming onto the civil market.

All these factors had a great impact on the aviation industry in England which was still largely geared to war-time conditions. The hardest hit firms were the manufacturers of light aircraft, and many of the small firms that had been established immediately after the war went out of business. The three largest manufacturers of light aircraft at that time, Auster, Miles and Percival, also found conditions very difficult, and all had large numbers of unsold aircraft in various stages of construction at their works. Miles Aircraft, who had produced a large range of prototypes, later closed down and their works at Reading were taken over by Handley Page Ltd., but Percival and Auster were rather luckier. Percival Aircraft had at the time just received a production contract for the Prentice, and the many unsold Proctor 5's were transferred to their associated company Field Aircraft Services Ltd. who gradually sold them over the next few years. Auster's' however, had only a relatively small contract for Auster 6's to work on and drastic action was taken inside the company in the latter half of the year, and most of the employees were laid off. At the peak period during the war the total number of employees had been about 1,600 and there had been a total of ten factories. This was now reduced to about 200 employees in only two factories, the main works and Head Office at Rearsby, and No. 7 Works at Syston. Production of civil aeroplanes did not stop completely however, and all but five of the Autocrats which had been laid down were gradually completed over the next year or two.

In 1947 the Design Office was occupied with a design to the Air Ministry specification A2/45, but a successor to the Autocrat was also being studied. This took the form of the Autocrat but a D.H. Gipsy Major 1 engine was fitted, and wing tanks were introduced. This design was called the Model J/5 and a prototype was converted from a spare Autocrat fuselage.


The J/5 was placed into production in August, but this aircraft was only one of five new models planned in 1947. Three of these only reached the project design stage—the J/6, J/7 and the Model A3. The J/6 and J/7 were variations on the standard Auster theme, but the Model A3 was a completely new design by the new Chief Designer Mr. R. E. Bird and it was a low-wing side-by-side two seat aircraft.

The last of the five designs of 1947 was the Model P.

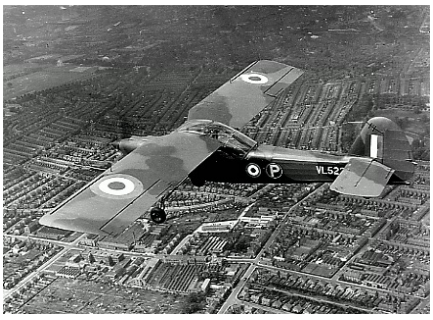

This was based on the Autocrat but owed much to the Auster 6. It was designed as a four seat aircraft with four separate doors, and was powered by a D.H. Gipsy Major 10 engine. A prototype was constructed and it flew in time to appear at the 1947 S.B.A.C. Air Display at Radlett, where it was announced that the new aircraft had been named the Auster Avis. After the display lengthy flight trials took place resulting in the award of its Type C. of A. in March 1948. The prototype was then greatly modified to carry a standard Army field stretcher and one attendant, as intimation had been received from the Army that they

were looking for an aircraft to meet such a requirement. A large hatch for stretcher entry was provided on the starboard side of the fuselage. However, the life of this aircraft ended when the propeller flew off the engine and the aircraft made a forced landing in a field just outside the aerodrome. The aircraft was a write-off and was later scrapped. The Army's interest in the Avis faded as the performance of the aircraft was considered to be 'marginal', and so production plans were cancelled.

1948 started off very well with the production line steadily producing Auster 6 and civil aircraft, and the experimental department busy on the A2/45 project, but the first new aircraft type to be flown was the Model Q, or Auster 7. This was a two seat-training version of the Auster 6, and the first flight took place on the 20th April. Production for the Army commenced almost immediately.

One week later, on the 27th, the long awaited first flight of the Auster A2/45 took place.



This aircraft was the largest Auster to have been built so far, and although it had a high-wing layout and fixed undercarriage, the resemblance to any other Auster ended there. The engine was a D.H. Gipsy Queen 34 of 240 h.p. and the aircraft had a cantilever tail plane, oleo undercarriage, and built-in slots in the wings. The general resemblance of this aircraft to the German Fiesler Storch was only accidental, or so it was claimed, but a Storch had been stationed at Rearsby for some time previously "for evaluation purposes"! Two prototypes of the A2/45 were built, and were tested by the A.A. & E.E. at Boscombe Down, in comparison with another aircraft built to the same specification, the Heston A2/45. Neither aircraft was ever put into production however as following the military run down after the end of the war development of both aircraft suffered from the Governments' economic axe.

In 1948 the Design Office carried out further investigations into military A.O.P. aircraft and various designs were produced, the Models A4, A5 and A8, all similar to the Model A3. A single engined two seat touring trainer the Model A6 was also designed, and following an enquiry from Australia, the specification and details of a five seat 'light twin' was produced and this was generally referred to as the Model A7. Much design work was carried out on this latter project and a mock-up of the fuselage was produced as well as an engine test-bed for cooling trials on the 'pusher' engines.

1948 also saw Auster's in action again, this time in Israel. On the 14th of May Israel was created as an independent state but was immediately attacked by Egypt, Iraq and Syria. With hardly any Air Force with which to defend itself Israel immediately searched far and wide for any aircraft that could be found. Prior to the British withdrawal from Palestine many ex-R.A.F. aircraft had been dumped into scrap yards, and from the parts the Israelies found in these dumps many serviceable aircraft were built. Some of the Auster's thus re-created appeared with Auster III engines in Auster V airframes. These Israeli Air Force Auster's carried out many sorties before being replaced by more modern aircraft.

Consolidation and planning for the future, occupied most of 1949. It was decided that completely new types of aircraft would be too great a step, as the financial state of the company would not permit a large amount of experimental work, so attention was paid to developing the existing types of aircraft then in production.

Two civil projects were then developed from existing aircraft and both of these were completed up to prototype stage and then placed into production. The first of these was a development of the Model J/5. The latter, although it was produced as a four-seater aircraft, was rather cramped in the rear seats for two large persons and the headroom had not been all that was wished for.


The new aircraft, which was called the Model J/5B Autocar, showed a great improvement in both of these respects as the basic fuselage frame was widened over the rear of the cabin and the outer top contours of the cabin were raised considerably by the addition of wooden formers along the top of the tubular framework. This gave a completely different appearance to the aircraft from all previous Auster's, especially as the fin and rudder had also been enlarged. This latter item had been developed primarily for the other new type to appear in 1949 and this was the Aiglet, or Model J/1 B. This type was

developed from the Autocrat for New Zealand crop-spraying duties. The Aiglet was in fact a lighter, cheaper, crop-spraying version of the J/5, but in due course there were also ordinary four seat passenger Aiglets and crop-spraying J/5's, and in later years crop-spraying versions of most Auster types were produced.

After making a batch of Auster 7 aircraft orders were received for a further batch of Auster A.O.P. 6 and T.7 aircraft, but two of these were fitted with extra radio equipment, D.H. Gipsy Major 8 engines, and with skis and floats interchangeable with the ordinary undercarriage. The two aircraft VX1 26 and 127 were built for the Anglo-Scandinavian Expedition to the Antarctic and were shipped later in the year.

The Design Office, apart from dealing with the new types placed into production during 1949, also carried out some design work to the Air Ministry specification 116/48 for a two seat basic training aircraft. The Auster project design, Model A9, resembled many of the other Auster projects for light aircraft but was powered by a 180 h.p. Blackburn Bombardier 702. Although the project was submitted to the Air Ministry it was not successful, and the development contracts were awarded to the Percival P.56 and the Handley Page HPR.2. The P.56 was later developed into the Provost basic trainer for the R.A.F.

Design work was also much in evidence during 1950. Whilst the production line was busy making Aiglets, J/5's, Autocars, Auster 6 and 7 aircraft, design thoughts were mainly concentrated on a development of the A.O.P. Auster but some attention was given to a special model of the Autocar for racing and also to improvements of ex-military Auster 5 conversion aircraft. The first Auster 5 variant was the 5C but this was merely a civil conversion of the Gipsy Major engined Auster V TJ187. This special version of the Auster V had been built in 1945 and used for some time by the firm as a 'hack' machine. Afterwards this aircraft was sold to Group Captain A. H. Wheeler who entered it in the 1950 Kings Cup Air Race at Wolverhampton and managed to obtain an average speed of 132.5 m.p.h. out of the aircraft to gain third place.

As many private owners expressed a preference for Gipsy Major engines, Auster's' converted several Auster 5 aircraft to Gipsy Major engines. These aircraft were christened the Auster 5D and had the larger Aiglet type fin and rudder, and were therefore very similar to the J/1 B Aiglet apart from cabin details. In the next few years many civil Auster 5's were converted to the 5D standard.

Later in 1950 a special version of the Autocar was built and was entered in the 'Daily Express' South Coast Air Race by Auster's Chief Test Pilot, Ranald Porteous.


This aircraft, known as the Model J/5E, had a 155 h.p. Cirrus Major 3 engine in place of the normal Gipsy Major 1 and also had the wingspan reduced to 30' 5". Unfortunately, the aircraft had to retire from the race due to engine overheating.

As mentioned before, the main problem facing the Design Office was a successor to the Auster 6, and in August 1950 another prototype appeared, the Model S. This was very similar to the Auster 6 but had a Bombardier engine, the larger fin and rudder, and standard Auster wings with split flaps, with large low-pressure main wheels. After normal manufacturers' tests at Rearsby the Model S was handed over to the A.A. & E.E. at Boscombe Down in 1951 for testing.


The Model S was, however, only one half of the study by Auster's of current Army requirements and the other half appeared in 1951. This was the Model B4, which had a completely revised fuselage of 'pod and boom' layout with large doors just behind the cockpit. The reason for this layout was to accommodate two stretchers, one above the other, alongside the pilot. For easy loading the rear doors were removable, hence the 'pod and boom' system. In place of the stretchers three seats could be fitted, or, for carrying freight the whole floor space was available. The cabin was twelve inches wider than the standard Auster, and 100 cubic feet of load could be carried. All other main components were inter-changeable with the Model S. These two aircraft together represented Auster's' answer to current 1951 Army requirements and they were tested at Boscombe Down during the next two years but were not taken up by the Army.

Although the A.O.P. requirements for the Army naturally received the greatest amount of attention one of the many other Army requirements the Design Office investigated was that for a radio controlled target for use in training antiaircraft gunners. The design was based very closely

on the American OQ-3 target and was known as the Model B3. The fuselage of the target consisted of a welded steel tube framework and so was well within Auster's' capabilities. No undercarriage was used as the target was launched from a 37 ft. long ramp, the ramp too being of welded tubular construction.

Further design work also took place in 1951 on the civil aircraft side and resulted in Auster's first fully aerobatic aeroplane. Designed primarily as a training aircraft it also became very popular as a touring aircraft in the hands of private owners. It was developed from the Model J/5 by strengthening the airframe and reducing the wingspan from the standard 36 ft. to 32 ft., and the result was a very lively aircraft. It was given the Model number J/5F and later named the Aiglet Trainer, although why it was called the training version of the J/1 B Aiglet has never been understood!

It was first shown to the public at the Air Display organised by the Auster Flying Club on the 2nd June 1951, and was later shown to a wider audience at the 1951 S.B.A.C. Farnborough Display. It was placed into production at the end of the year and first deliveries were made to customers in January 1952.

In 1951 Auster's were in active service yet again, this time in Korea. The decision to send United Nations troops to Korea brought Auster 6 and 7 aircraft into action for the first time, with No. 1903 Independent A.O.P. Squadron and No. 1913 Light Liaison Flight, R.A.F., and these were the only R.A.F. units serving in Korea. The Auster's were used as before in artillery spotting and for communications.

On the 1952 production line there were five different models, the Auster 7, Aiglet, J/5, Aiglet Trainer and the Autocar. This latter aircraft occupied most of the production activities during the year although many Aiglets were produced for export, many of them going to Australia. Many of the Autocars used overseas were equipped for crop spraying and dusting, but it was found that more power would be an advantage. In temperate climates the 130 h.p. of the J/5B was quite sufficient and gave a good performance, but in tropical conditions this was not enough, and so the experience gained from the J/5E Racer was put into practical use and the Cirrus Major 3 was fitted into a standard Autocar airframe. This new aircraft, the Model J/5G, was named the Cirrus Autocar and immediately found a ready market, most of them amongst crop-spraying and dusting operators overseas.

The Cirrus Major 3 engine was also fitted into the Aiglet Trainer resulting in the Model J/5K. A very lively aircraft was thus produced but only one J/5K was made, which performed for many years at the S.B.A.C. Air Display in the hands of Ranald Porteous.

With so many Auster's being delivered to overseas customers for agricultural use the Design Office turned its attention to designing an aircraft for purely agricultural use. The new design, the Model B6, used many standard Auster parts but the fuselage was a completely new design to requirements received from New Zealand for a single seat aircraft to carry 1,120 lbs. of Super-phosphate. The aircraft evolved was to be powered by a 185 h.p. Continental engine and the hopper was located between the pilot and the engine. As a result of this, in order to give a good vision forwards and downwards and to keep the C. of G. in the right place, the pilot was located aft of the wing and this necessitated a parasol wing layout. Standard Auster wings were to be fitted onto a new centre-section, which had a large cut-out in the trailing edge to give additional vision to the pilot who had a bubble cockpit cover for protection. However, there was one large snag with the whole design concept and this was the difficulty of filling the hopper, which was situated immediately underneath the wing. As the design became more stabilised it was realised that there was no easy way around this snag and so it was decided to drop the whole design and start again.

Throughout 1953, whilst production continued on Autocars, Aiglets. Aiglet Trainers, AOP Mk. 6s and T Mk. 7s. the design office proceeded to work mainly on two lines, namely agricultural and AOP. The exceptions to the main work were two-fold. The first, the Model B7, was a revised version of the light twin project but this time it was projected with a conventional engine layout.

The second exception was a modification of the Mk. V, an example of which was fitted with a system of strut braced under wing

neon tubes for night advertising


This aircraft, G-ANDU, became known as a SM and was eventually followed by another similar conversion to G-AOSL. Strangely this modification had been carried out to G-AJYP during 1950/1 but had not resulted in a change of designation. These aircraft were fitted out as single seaters with all the electrical equipment alongside the pilot and were to be seen flying ghostlike, in the evening skies around Rearsby before delivery.

The main design work for 1953 was centred on an aircraft for the Army to replace the AOP Mk. 6 and, the design having been accepted, the main task of the year was to finish the design and detail drawings and to produce the prototype. Such a volume of work naturally took some time to complete and as a result we have to pass into 1954 before the first flight of WZ662, the prototype Model B5. This took place on 19th March and the aircraft was to be known as the Auster AOP Mk.9. A 180 hp Blackburn Bombardier engine powered it and although resembling the traditional Auster it was an entirely new aeroplane and was much larger than its predecessors. It was in fact the first completely new design (as opposed to the development of the 'standard' Auster airframe) since the A2/45. Although the fuselage was again of the basic welded steel tube construction the tail surfaces were all light alloy construction, cantilevered. The wings were also all metal construction but with only one lift strut each side. The use of plastic was introduced on this aircraft but as was the usual Auster practice the greater part of the completed aircraft was fabric covered. After the usual trials the Mk. 9 was put into production, which was gradually built up over the next months.

After the successful adoption of the Mk. 9 the attention of the design office was continued on further Army requirements as a great change was becoming evident in Army thinking, in particular the role of the helicopter was being investigated. This resulted in the War Office collaborating with the Air Ministry and Ministry of Supply in the formulation of Specification HR. 144T which called for a simple and relatively inexpensive small helicopter for use by the Army for reconnaissance, casualty evacuation and training. The helicopter also had to be capable of being dismantled and assembled easily and quickly and of being transported on a standard Army three-ton truck. Naturally Auster's turned their attention to this specification as, up to then, they had been the sole supplier of aircraft to the Army AOP squadrons.

To cope with the additional work that the helicopter involved a special section of the design office was formed and a project was formulated to meet the specification requirements. Known as the Model B9, a lot of design and detail work was carried out, which resulted in a mock-up of the basic structure and an engine assembly complete with rotor tip ramjets. This assembly was functionally tested in a ground test structure situated in the South Eastern corner of the airfield and, when it worked, it disturbed the peace of Leicestershire for miles around Rearsby!Several Companies tendered projects as well as Auster's and these included Fairey (Ultra-light), Bristol (Type 190) and Shorts (S.B.8). The Fairey Ultra-light was selected and six prototypes were built but no production contracts were issued and the whole project was eventually dropped.

Auster's carried on with investigations into light helicopters and over the next two years several design studies were evolved, these being designated Model C2, C3, C7, and C8, the final example being drawn during 1956.

Production of Autocars and Aiglet Trainers continued during 1954, mainly to meet overseas orders and three new Models were also introduced during that year. These were the J/5L Aiglet Trainer and the J/5P Autocar and were the standard airframes fitted with a Gipsy Major 10 engine. These versions replaced the 3/SF and J/5B on the production line.

The other new Model to appear in 1954 was the J/8L, this being a version of the Aiglet Trainer, which featured the positioning of the flap-operating lever between the two pilots. Three versions of the J8 were projected, each corresponding to the three Models of the Aiglet Trainer. However only the J/8L was produced and this was a

conversion of a standard J/5K, this being G-AMYI.

Towards the end of 1954 the firm was asked to build two special aircraft for the Trans Antarctic Expedition with the result that two T Mk. 7 aircraft were modified to have interchangeable wheels, floats and skis. Many other modifications were also made and included the fitting of the large fin and rudder whilst the cabin was almost filled with extra radio and survival equipment aft of the two seats. So many changes resulted in these aircraft being known as Model C4

After test flying in 1955 the aircraft were dismantled and placed in special crates and dispatched, together with the rest of the equipment, for that famous expedition on board the M. V. Theron from which they did a lot of valuable work for the advance party during the voyage to Shackleton Base and also survey work after the first winter prior to being returned to England. One was then sent to New Zealand and returned to Antarctica at the Scott Base whilst the other returned to Shackleton Base with the main crossing party. Both aircraft survived these arduous journeys to be preserved in museums in New Zealand and U.K.

On the civil side two new models appeared during 1955. The first was the Model J/5R Alpine which was a J/5L Aiglet Trainer, G-ANXC, fitted with standard 36 ft span wings and larger tail plane. Six of these aircraft were made to individual orders over the next two years, as were four J5/Q Alpines these being Alpines fitted with the less powerful Gipsy Major 1 engine. The second new model was, in fact, a conversion, namely the Model J1/N Alpha, which was a Model J/1 Autocrat, converted to have a Gipsy Major 1 engine and the larger fin and rudder. During the next few years many more Autocrats were similarly converted and this operation, which in effect brings the Autocrat up to J/1B Aiglet standard, is still carried out today.

The main task of the civil section of the design office for the previous year took on its final form during 1955 and construction started during the middle of that year. This was a new agricultural aircraft, which was ordered after the abandonment of the Model B6 and was known as the Model B8, first flying on 8th December. Its shape came as a severe shock to people used to the traditional Auster profile and it was definitely the ugliest Auster ever produced. Although officially called the Agricola it was generally referred to by several uncomplimentary and unprintable names by the workforce. However, it was a strictly functional aeroplane, quite pleasant to fly, and was one of the few aircraft in the world to have a payload of more than its own basic weight.

The Agricola, Auster's first low-wing aircraft design to be built was powered by a 240 hp Continental engine whilst the hopper was placed in a large fairing underneath the wing and could carry a load of 1680 lbs. The pilot's cockpit was aft of the engine bay and the pilot actually sat on top of the wing centre section, which passed straight through the fuselage. Aft of the pilot was the tube for loading the hopper and behind this was a space, which could be used for carrying two people over short distances when the hopper was empty. The wings and tail plane were of light alloy construction, mostly fabric covered, but as usual, the fuselage was of steel tube construction and fabric covered.

Prototype handling trials started early in 1956 and were followed by dusting and spraying trials during the course of which Rearsby airfield received vast amounts of chemicals and this probably accounts for the magnificent crop of hay the local farmer takes off the airfield twice a year!

Production started in 1956 and several were exported to New Zealand where they did not receive a very encouraging reception despite having been specifically designed to the requirements of New Zealand operators. The reason being that operating conditions had changed during the time it took to design and produce the Agricola, further, the American manufacturers had, by then, captured the market.

1956 saw the build up of AOP Mk. 9 production and with the main emphasis on military work civil aircraft production took second place. World demand for civil aircraft declined during the year and Auster's reduced the production of civil types to the Autocar 145 and the Alpine. However, towards the end of the

year a healthy demand developed for second-hand J/1Ns and Auster 5s. As a result these two types were re-introduced onto the production line whenever orders were received over the next four years; many of the 3/iNs being exported, less engines, to Australia.

With the drop in production of civil aircraft, the civil section of the design office began looking at a replacement for the Autocar. Design studies had begun in 1955 and two projects were formulated during that year, these being the Model C1 - rather like an Autocar with a Continental engine, and the Model C5, which was a development of the B4 Ambulance Freighter but also powered by the Continental engine. From these two projects (mainly from the Model C1) design work finalised and resulted in a new aircraft by 1958.

Also appearing in 1956 was the Model J/1S which was merely the allocation given to a J/1 Autocrat which had been converted by its Kenyan owner to take a Gipsy Major 10 engine which originally came from a Chipmunk. The Model number was issued by Auster's to clear the aircraft through its certification, the aircraft first appearing at Rearsby in 1962 when its new owner flew it home from Kenya.

Another project of 1956 to receive some attention was the Model C9. This was an advanced version of the B3 target aircraft and was to have been made primarily of fibreglass to reduce superficial damage and to cut maintenance costs. Power was to have been provided by a modified 250 cc Excelsior Talisman Twin motorcycle engine. Unfortunately Auster's did not find the Army sufficiently interested to warrant a prototype being constructed.

For Auster's 1957 started with the promise of reasonable activity throughout the year but closed in a far different atmosphere. At the beginning of the year the main production aircraft was the AOP Mk.9 with most of the factory being geared to its production, whilst a few civil aircraft, Alpines, J1/N Alphas, and Auster 5s were also constructed. The Alphas were mainly for agricultural use, as were the Agricolas, the production of which was also beginning to gather pace.

In addition to the continuing work on the Autocar replacement the design office also turned its attention to other projects, one of which, the Model D.1, was the largest aircraft Auster's ever studied. This was an eleven seat aircraft intended for troop transport or casualty evacuation and was powered by two 300 hp Continental engines with a fuselage of pod and boom section to give easy rear loading. Another project at this time was a version of the AOP Mk.9 powered by a 240 hp Continental engine, which also powered the Agricola. This aircraft, which was not given a Model number, was intended to be fitted with slots on the leading edge of the wing to give, with the increased power of the engine, a STOL version of the AOP Mk.9.

April 1957 saw the first flight of the Model J5/T powered by a 185 hp Continental engine and resembling the Autocar series, in fact G-25-4, as this aircraft was registered, was another example of the continuing search for an Autocar replacement and was very short lived. The next step was to place the J/5T design on a tricycle undercarriage and this, basically, was the design philosophy of the Model C.6 Atlantic, which was announced at the 1957 SBAC Show held at Farnborough.


This was Auster's first tricycle undercarriage design to reach prototype stage and the cabin interior was drastically revised from the standard traditional fittings and a reasonable level of comfort was obtained. Hand wheel controls were introduced and the flap lever repositioned on the floor, an improvement that Auster's had been trying to introduce for many years and this aircraft, with its deeper underbelly, facilitated such a move. The engine was the same unit as was fitted to the J/5T, the tricycle undercarriage was an all hydraulic aleo type, the doors were larger thus enabling passengers to gain access to the rear seats without a knowledge of mountaineering and, again as a result of the deeper underbelly, the floor of the cabin was completely flat enabling fore and aft adjustable seats to be fitted. The furnished fuselage, registered G-APHT, was exhibited statically at Farnborough, not because of the ban on aircraft not fitted with UK engines but because it was very incomplete; in fact the furnished cabin was about the only thing that was complete.

The Defence White Paper of 1957 caused consternation within the aircraft industry as, in one section, it advocated the abandonment of manned aircraft as offensive weapons and a reliance on guided missiles and rockets for attack and defence. Auster's, who, at that time, were relying on the Mk.9 for their existence, had to proceed with extreme caution and with the 1947 recession still in mind action was taken which resulted in the retention of only a skeleton staff.

The Agricola production was stopped as it was realised that there was insufficient demand to make the type a commercial success whilst the design office stopped work on the Model D.l and the Continental engine version of the Mk.9, though this aircraft did eventually materialise as the Model E.3/ Beagle AOP Mk.11, the only Beagle contribution to the design being the spats and undercarriage fairings and even these were later removed.

1958 started with Auster's almost unrecognisable form the previous year, but in spite of the reduction in staff product on did not stop completely and within a few months many employees were re-instated. The Atlantic, inevitably suffered a delay but it had been reprieved from cancellation in the cutback and work continued upon this aircraft when it returned from Farnborough. The fuselage was stripped, all controls and electrics were positioned, wings fitted and after taxying trials the Atlantic first flew during July 1958. Flight trials commenced and the very low noise level of the aircraft, both inside and outside of the cabin, soon attracted comment. However a fractured nose wheel leg resulted in minor damage after only 10-15 hrs flying and despite many people considering this aircraft as the best four seater Auster's ever produced it was decided, in 1959, not to go ahead with the project due to the current insecurity of the firm and the costs involved in gaining certification of a new type. This decision was unfortunate in the light of subsequent world events for, had the Atlantic been produced, the subsequent American light aircraft invasion might have been stemmed somewhat but it was claimed that it was a bit too expensive and a little in advance of its time!

Even before the cancellation of the Agricola aircraft it has been realised by the design and sales offices that this aircraft would not be every operators idea of an agricultural aircraft and so the design office began work on a simplified model. As many of the new J/1N Alphas being produced were fitted out for crop dusting/spraying it was not surprising that the J1/N formed the starting point for the design. At the same time the J1/N was modified to carry 100 gallons of insecticide. More power was required for tropical operations and so the Lycoming 180 hp engine was selected for the new design. To provide better ground handling a larger undercarriage was fitted with larger wheels, the fuselage, although in outline was similar to the standard Auster, was very much stronger, and the wings, whilst retaining the same shape, were of different construction. In place of the wooden spars, fitted to all Taylorcraft/Auster's since 1939, alloy extruded spars were fitted, thus making the basic structure all metal for the first time. A clean cowling was fitted and a variable pitch propeller used on this new aircraft which was known as the Model J1/U Workmaster and which first flew on 22-2-58. During flight trials a dorsal fin was added and the shape of the cowlings was altered to enable a fixed pitch propeller to be used. Limited production was put in hand and first deliveries were made later in the year

Two other design studies were undertaken during 1958, the first being a series of studies on a two-seat AOP aircraft known as the Model D2. Various types of engines, both piston and turbo-prop, were under consideration but the design had not reached a firm project when work was stopped. The second project was a two-seat all metal ultra light aircraft powered by a 75 hp Continental engine. Known as the Model D3 it was a low wing aircraft with swept tail surfaces, fixed tricycle undercarriage, a large bubble type canopy and generally bore a resemblance to the Miles M. 117 which was designed four years later. The D3, if it had been produced, might have made quite an impression on world markets, being, in 1958, ahead of nearly all rivals.

1959 was a year of steady progress. Production was on the upward trend and aircraft, mainly AOP Mk.9s, were coming off the assembly line at a steady rate. The Workmaster and the two resurrected Models, the J1/N and 5 Alphas were also produced in small numbers.

Further development work by the design office on the Workmaster eventually led to the Model J/1W, a three seat light aircraft. The interior of the cabin was upholstered to what could only be described as luxurious whilst much of the fabric was deleted from the outside fuselage and replaced by many wooden fairings. Although mainly intended as a design study having standard 36 ft wings the prototype fuselage was fitted with a pair of 32 ft wings and flew for the first time during April 1959. The type was not put into production and after initial flight trials this aircraft was dismantled and stored near Rearsby.

Having successfully fitted the Lycoming 180 hp engine in two

Auster's the design office decided to standardise further activities on the Lycoming engine as production of British light aero engines had virtually ceased, thus the next new civil Model was an Autocar fitted with a 160 hp Lycoming. This aircraft, which was built to the specific order of a long-standing Auster pilot, was given the Model designation of J/5V and made its first flight on 23-9-59.

On the military side, whilst the production of AOP Mk.9s continued, the T.Mk.10 made its appearance. Actually an AOP Mk.6 modified to T.Mk..7 standard but because of differences in certain seat attachment parts was re-designated as T.Mk. 10. Nine further aircraft were eventually converted, making a total of ten in all.

During the year the design office were also working on several projects, one of these being an alternative version of the Agricola with external pipe and spray pump. The main work revolved around a series of projects utilising the Lycoming engine and it was decided to introduce a new range of two, three and four seat aircraft, all developments of existing design with modification kits being first offered to existing owners to enable them to bring their aircraft up to date. The necessary drawings were prepared for these conversions which, when converted, would be known as Models J/5X, J/1Y, J/5Z and J/5J, these being Lycoming powered versions of the Aiglet Trainer, Autocrat, Alpine and Adventurer respectively. The Autocar conversion being already covered by the Model J/5V. Unfortunately these conversion schemes came to nothing and so remain as projects. Work continued on the new series and was undertaken in two parts, the initial work being for replacement aircraft for the Alpine, Autocar and a two seat aircraft. These aircraft were to have identical wings, undercarriage and tail units with a dorsal fin with as much of the engine bay as possible to be interchangeable. The three selected engines were of 108, 160 and 180 hp and the all-metal wings were to be either short or standard span. This gave a total of eighteen possible combinations but obviously some were impracticable and, in the event, only five types were built, all featuring the standard 36 ft span wing.

Also projected at this time was a high wing, four seat aircraft with a retractable undercarriage and generally referred to as Model D5. This project was not proceeded with and the Model D5 designation was re-issued.

Detail design of the three new models started during mid-1959 and construction followed a few months later. All three Models were constructed at almost the same time, the first one to fly being the D5/160 on 10-1-60, followed by the D4/108 on 12-2-60. Both types have an obvious resemblance to their predecessors, the D5 to the Alpine and D4 to the Arrow, except, of course, for the revised cowlings around the Lycoming engines and the dorsal fins. Both types were placed into production but only limited numbers were constructed. At the same time Auster's were successful in selling a licence to produce D4 and D5 aircraft in Portugal, an event that resulted in Auster's being produced outside of England for the first time.

The replacement for the Autocar was not far behind the other two Models and on 9-5-60 the D6/160 took to the air, followed by the more powerful version, the D6/180, on 27-7-60. Although these two aircraft were exported only two more D6 aircraft were built and the type did not go into general production.

1960 saw the beginning of the end of the Service life of the AOP Mk. 6, which was being replaced by the AOP Mk.9 and helicopters. A similar situation had existed with the redundant Mk.Vs, with Auster's purchasing these from the RAF, and so it was to be with the Mk.6. After purchase the majority of these aircraft were stored at Kidlington or Broome Lane, Rearsby whilst several were flown to the airfield at Rearsby for civilianisation.

After considerable thought as to what to do with these aircraft the Company decided to convert them as two different types, an inexpensive glider tug known as the Model 6A, and a three-seat club aircraft designated as Model 6B. The first to appear was the 6A, which was christened Tugmaster

This was a relatively simple conversion with flap alterations, larger fin/rudder and the inclusion of the towing mechanism. The Tugmaster first flew during May 1960 from Lasham where Air Tows Ltd had converted it under direction of the Company. Conversion of surplus airframes to Tugmaster standard continued at both Lasham and Rearsby.

On September 1st 1960 the design office began work on the next batch of aircraft of the new series designated Model D7, D8 and D9. After discussion the decision was taken to drop the D7, which was to have been the new agricultural aircraft of the series. However it was felt that if any enquiries were received and aircraft built they would be purely agricultural versions of the Model D5.

The Model D8 and D9 were projected tricycle undercarriage versions of the D6 and D4 respectively, with detail design work on the first of these projects being commenced during September. Although thoughts were cast back to the Company's previous tricycle aircraft, the Atlantic which was brought out of store for studying, it was decided not to embody such great changes as had been introduced on that aircraft. Some details were used, including the nose leg and most of its structure; in fact the actual Atlantic nose leg was used initially on the subsequent prototype. Hydraulic dampers were added to the main wheel structure, whilst a door for the rear seats was incorporated as well as a separate luggage compartment aft of the rear seats. Slotted flaps were introduced in the wings instead of the standard Auster split flaps and, to give better access to the front cabin, the lift struts were moved forwards to locate on the fuselage forward of the front door.

A lot of detail design had been completed for the Model D8 with some prototype drawings almost ready to be issued to the shop floor when, on 7th October 1960, the Company was taken over for £525,000. The purchaser being the Pressed Steel Company who used Auster Aircraft Co to form the major working part of British Executive and General Aviation Ltd, commonly known as Beagle Co. Ltd.

The Auster D8 was subsequently altered and appeared on 16th April 1961 as the Beagle-Auster A109

Airedale, whilst the Model 6B flew for the first time on the 13th April 1961 as the Beagle-Auster A61 Terrier.

The Model D9 remained a project, as did the Model El and E2.

Thus ended Auster Aircraft Company Ltd which, as Taylorcraft Aeroplanes (England), Taylorcraft-Auster and finally Auster, had been producing light aircraft for 21 years.

Although one of the smaller units of the aircraft industry and, by comparison to some of its larger associates, the number of aircraft produced was small but nevertheless the firm's products have reached the four corners of the world.

In 1948 the decision was taken to subcontract work and this took the form of manufacturing parts predominantly for the automotive industry. This produced a steady source of revenue, which offset the vagaries of aircraft sales. It also had the advantage of enabling the Company to install additional automatic machine tools, which could also produce parts for the aircraft division cheaper than would have been otherwise possible.

Being a small firm Auster's had to be sparing with its money, which, incidentally, was its own, there being no shareholders outside of the Board of Directors. As a result no great risks were taken or extensive research, as both were usually costly exercises. If, at the end of WW2, substantial financial backing had been obtained it is possible that some very interesting and, perhaps, successful aeroplanes could have been produced in large numbers as there was no shortage of original ideas in the Design Office. However such ideas alone do not always make a successful Company.

# Index

