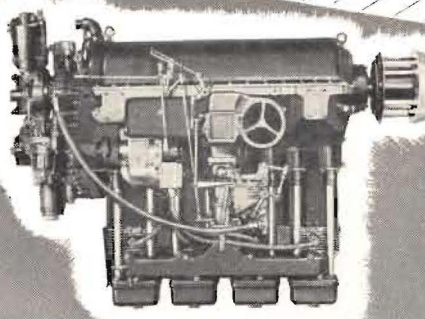
AIRCRAFT *News*

FEBRUARY · 1951

THE STEEL AUSTER AIRCRAFT AEROPLANE



MAJOR

CIRRUS engines have a long record of success in many countries and in a great variety of light aircraft, and are now showing their worth in the new light civil planes being built by many leading manufacturers.

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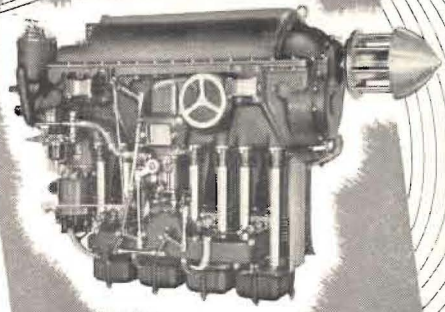

MINOR

Cirrus REGD. TRADE MARK

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AIRCRAFT NEWS

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FEBRUARY, 1951

Editorial

PERIODICALLY, REQUESTS OR SUGGESTIONS on topics for inclusion in this magazine are received, and it is gratifying to note the apparent interest which a magazine of this nature arouses. Some of the suggested topics may have to be delayed until space permits their inclusion, or until such time as the requested information is collected.

An example of this is a recent request stating that "I, for one, would be interested if you could get an article for *Aircraft News* on the best procedure in the unfortunate event of having to "ditch" an Auster." Now this is a subject which is obviously going to be of widespread interest, and advice is being collected to deal with this topic in a suitable manner. The ditching of aircraft in general is quite straightforward subject to deal with, even though it would require considerable space to do this adequately, but to apply these principles to an Auster is rather a different proposition. Until such time as it is possible to obtain authentic reports on the reaction of an Auster when contacting water the presentation of a comprehensive article must of necessity therefore be held in abeyance. Various assumptions have already been made, but these alone are not enough to put into writing. Furthermore, cases of having to ditch an Auster are fortunately most unusual.

The point is that every endeavour will be made to give readers the information they desire ; their correspondence is appreciated. If a subject does not appear for several issues of the *News* there is usually a very good reason for this, and it should not be assumed that the subject is being forgotten.

Australia's Auster Concessionaire

Australia's Auster concessionaire is the Kingsford Smith Aviation Service, P.O. Box 23, Mascot, New SouthWales. This Company is well known throughout the continent and, to quote the aviation journal *Aircraft*, "selling light aircraft by the dozen exactly describes the job Kingsford Smith Aviation Service of Bankstown is doing."

The managing director is Mr. J. T. Brown, himself a well-known figure in Australian aviation for a generation,

Mr. P. G. Brown flying an Autocrat *over Sydney. The application of the registration letters KS is obvious, and these are to be found in quite a few of Australia's aircraft.*

and is ably assisted by his son, P. G. Brown, D.F.C., and his daughter, Jacqueline. Of the staff a large proportion are pilots, so that the collection and delivery of aircraft presents no problem at all.

The history and activities of Mr. J. T. Brown's organisation offers an interesting story, which we will endeavour to present in some detail in a subsequent issue.

WORRY IS THE INTEREST paid on trouble before it becomes due.

SILENCE IS NOT ALWAYS TACT, and it is tact that is golden, not silence. *Samuel Butler.*

On Breaking One's Neck

A PLEA FOR BETTER AIRMANSHIP

By Ranald Porteous

WINNING THE CONFIDENCE of the cautious British public in matters of flying (and in light aircraft in particular) is uphill work, and every accident to a light aircraft is a blow that sends us staggering back a few steps down the slippery slope.

Flying is not dangerous if treated with respect, but it can be most perilous otherwise.

Now there is little we can do to make the atmosphere less fluid, and the navigation of it will always remain a great science and a great art, but we should try to make our aeroplanes safer vehicles, and ourselves safer pilots. How can we do this ?

The light aircraft manufacturer normally sets about the problem of evolving safe aircraft in two ways. Firstly, he tries to build complete and utter mechanical reliability into his machines, and secondly, he tries to see that they are "safe" in their handling characteristics ; that they do not stall viciously, spin easily or land too fast.

How well they have succeeded in the first matter, and how vitally important it is, no one will question, but in the second there is a limit beyond which I believe it is impossible to go, as far as fixed-wing aeroplanes of present conception are concerned. Any attempt to go past this limit will achieve only negative results, as the whole thing quickly becomes a matter of airmanship.

The sea is relatively safe to-day partly because of the vast store of accumulated engineering experience built into modern ships, but more especially because of the high standard of scientific seamanship with which they are sailed. The sea itself has become no less deep, nor gales less potent, as when Saint Paul addressed his ship's company, "Sirs, ye should have hearkened unto me and not have loosed from Crete, to have gained this harm and loss."

The amateur airman, the ordinary man who uses a light plane for business or pleasure, can get so much more out of flying, and can be safer doing it, if he spends a little time studying the principles which govern his aircraft's flight

in different circumstances, and the vagaries of the atmosphere which he navigates.

No matter how "safe" an aeroplane may be, a man can still break his neck in it if he thinks he knows better than the book. This applies more-or-less to every power-driven vehicle ever devised, but most of all where the fluid elements are the medium of travel.

Pottering about low down at a marginal airspeed, attending to things other than the "feel" of the aircraft, seems to be a currently popular way of courting disaster, as are the habits of persevering in bad weather, miscalculating sunset, leaving matters too late to turn back, and just plain "shooting-up." The last-named failing does not seem to be so prevalent here, or so fatal, as in other countries. This is greatly due to the credit of the British flying instructors, the best in the world.

I believe that amateur pilots would be safer if less attention were paid in licence examinations to obscure points of law, and more to quick mental "guesstimation" and common-sense problems of airmanship.

How many amateur pilots really understand wind gradients, and how to deal with them, and the relationship between dynamic loading and stalling speed? How many can anticipate the optical illusions due to drift when turning and the way to avoid their dangerous effects; or, again, the factors which may greatly affect take-off performance in different surroundings. And yet it is all so easy to learn and to understand, and so interesting, if one is truly fond of flying.

Regarding aeroplanes themselves, and the qualities which go to make for safety. I rate low landing speed, which some people seem to think the be-all and the end-all of safety, as only fifth in order of importance.

First of all is absolute mechanical and structural reliability of engine, airframe and (which is most important) ancillaries. This is simply not worth arguing about. Next to my mind, is the pilot's field of vision. An aeroplane with large blind spots is a dangerous aeroplane, no matter how docile it may be otherwise. Next I place handling characteristics, not merely at the stall, but in all normal conditions of flight, notably after take-off and in the glide. An aeroplane whose stabilities and control actions are nicely in harmony with each other feels "right," and is a

safer machine than one which needs conscious effort to fly accurately, or whose power loading is too great to allow for a "clean" performance after take-off.

Stalling characteristics I list fourth. Nowadays one can rely on these being non-vicious, otherwise an aeroplane would not carry a Certificate of Airworthiness, so that shades of merit matter little. One can hit the ground just as hard with one aeroplane as with another, and no machine will stay airborne on the strength of its maker's reputation.

Last of all I place actual landing speed, provided naturally that this is within reasonable limits. I believe that there is an optimum range of landing speeds for normal fixed-wing lightplanes in the 2 to 4-seat category. This seems to be in the region of 40-45 m.p.h. Below this they tend to become increasingly tricky in anything but calm air.

After all, a moderate gust of wind is a fluctuation of (say) 12 m.p.h. If one is holding off to land at 30-odd m.p.h. then this represents a very large proportion of one's speed, or, more properly, of one's normal gliding margin above the stall. Aircraft of slightly heavier wing-loading, and consequently faster landing and gliding speeds are usually less susceptible to gusts, and have better landing qualities in normal air conditions.

It is interesting to examine the records of various "unstallable and unspinnable" aircraft which have been designed from time to time. Few, if any, have really shown a better safety record than their more orthodox competitors. An outstanding example is that of an American 2-seater which sold in large numbers after the war. This had a coupled rudder and aileron circuits, and an elevator of limited power. There was no independent control of the rudder. The design, insofar as harmonisation of control is concerned was really brilliant, and this, combined with a tricycle under-carriage, resulted in an aircraft which, within the limits imposed by its control systems was unquestionably the easiest to fly which I have ever sampled.

But was it thereby any safer ? Accident statistics supply a negative answer, and the insurance companies are well aware of this, as witness the rates now charged for the type.

What does all this add up to ? It is, that, granted the reliability of the aeroplane, the pilot and characterisitcs other than mere low landing speed are the chief factors which determine its safety. An intelligent man or woman

flying a "normal" machine is far safer than a stupid one in an unstallable, unspinnable aircraft.

It is no good building "foolproof" aircraft, believing that fools can fly them safely. Conversely, it is no use becoming a fool, just to take liberties with a so-called "foolproof" machine.

The atmosphere, like the sea, is a vast and fluid medium of many moods, and requires to be treated with respect. But what a fascinating study it makes, and how rich is the reward when one can begin to feel with confidence that one enjoys "the freedom of the air."

Editorial Postscript

Pamphlet M.C.A.P. 89 published by H.M. Stationery Office, price ninepence, gives a Survey of Accidents to Aircraft of the United Kingdom, during 1949. The contents are too extensive to detail here, but the following points are worthy of attention.

1. There were 58 notifiable accidents involving aircraft and 9 involving gliders. Aircraft fatalities were 106 people and glider fatalities were 2.
2. 24 accidents were assumed to pilot error, and in 17 accidents the cause was undetermined.
3. At least one accident was due to unnecessary low flying, and in three cases insufficient height was allowed for aerobatics.
4. 4 accidents were due to lack of fuel or mismanagement of the fuel system.
5. There were 2 mid-air collisions.
6. 3 were collisions with terrain in bad weather.
7. 11 accidents were due to faults in the aircraft or engine/s.
8. There were 13 forced or precautionary landing accidents. Only one of the eight forced landings involved single-engined aircraft ; the five precautionary landing accidents occurred to such aircraft.
9. Fires on the ground affected three aircraft.

These, and other accident causes, are "padded" by advice from the M.C.A., and the pamphlet is one which should be read by all pilots.

AUSTER SERVICE BULLETIN

Auster Aircraft Limited
Rearsby, Leicester, England

February, 1951
Issue No. 18

AUSTER MKS. 3, 4, 5, 5A, 5C, 5D, V.J.1, V.J.1A, and TAYLORCRAFT PLUS MODEL D AIRCRAFT.

ESSENTIAL MODIFICATIONS

IN THEIR LATEST LIST of Essential Modifications and Inspections, Issue No. 4, dated 24th January, 1951, the Air Registration Board include the following as Essential Modifications to the above types of aircraft. The list is preceded by the statement that these modifications or their approved equivalents must be embodied prior to the issue or renewal of certificates of airworthiness.

Mod. No.	*Particulars of Modification*	*Remarks*
135	To introduce strengthened flap shaft levers (Part Nos. GA2155 and GA2156, Mark 2) and flap torque tube levers (Part Nos. GA80184 and GA80185, Mark 2)	Applicable to Marks 4, 5, 5A, 5C and 5D only.
142	To change the specification of rear undercarriage and lift strut fittings from 3.S3 to D.T.D.124A.	Applicable to Mark 3 aircraft at 1,700 lb. A.U.W. only.
144	Introduction of $\frac{5}{8}$ inch diameter rudder mass balance arm.	Applicable to Marks 3, 4, 5A, 5C and Taylorcraft Plus Model 'D' only. Mod. 195 (introduction of rudder mass balance weight to Pt. No. J4252) is an alternative to this modification.

Mod. No.	*Particulars of Modification*	*Remarks*
154	Introduction of wing fabric covering to D.T.D.575, using specially woven tape of greater strength with 3-inch pitch stringing.	Applicable to Marks 3, 4, 5, 5A, 5C, 5D and Taylorcraft Plus Model 'D' mainplanes only. Mod. 138 (Strengthened fabric attachments) and Mod. 167 (Fabric to D.T.D. 540) are alternatives, but if mainplanes are to be recovered it is recommended that Mod. 154 be embodied.
164	Introduction of re-designed engine mounting to Drawing Nos. DFF18, Mark 3, and DFF19, Mark 3.	Applicable to Marks 4, 5, and 5A. Mod. 118 (Mountings to Drawing Nos. DFF18 and 19, Mark 2) is an alternative to this modification.
1381	To introduce stronger tailplane bracing wires of $\frac{1}{4}$ inch diameter.	Applicable to V.J.1 and V.J.1A only. Not applicable when Mod. 1934 is embodied.
1670	To introduce improved engine mounting to Drawing No. EJF106 Issue 'K' by addition of wrapper plate at rear bearer foot attachment.	Applicable to V.J.1 and V.J.1A only.
1838	Introduction of Battery Master Switch.	Applicable to *all aircraft* with electric starter motors.

Austers for Banner Towing

TOWING HOOK

THE SLINGSBY type S.F.11 Quick Release used on the existing Auster glider towing beams may not, in all cases, be suitable for banner towing. It has been discovered recently that where banners of high drag are being towed the effort on the cockpit control necessary to release the banner is excessive.

Accordingly, unless operators have already had experience of towing banners we would advise against experimenting with very large banners unless the drag at normal speeds has already been ascertained from other sources. The effort at the cockpit control necessary to release a banner amounts to approximately 10 lbs. per hundredweight tension in the banner towing cable. In assessing the drag of a banner, a point which should not be overlooked is the possibility of projections from the banner catching in the ground during take-off. It it is desired to release a banner under these conditions the load may be prohibitive.

If in doubt about banner towing, or practical sizes of banner to use, advice can be obtained from the Auster Design Department.

It should be noted that a new hook is being developed by this Company to replace the Slingsby S.F.11 hook in existing towing beams. This new hook will be interchangeable with the old one, and has been tested and proved that, regardless of the drag on the towing-line, the effort necessary for release is always very small Details of the availability of the new hook will be announced as soon as possible.

Delivery of new mod. kits, where required for banner towing, will be temporarily held in abeyance pending availability of these new hooks.

Mk. 5, Autocrat, Aiglet, Series J.5

MODIFICATION No. 1780 (Double Rear Seat)

IN SERVICE BULLETIN No. 17 it was stated that the Series J.5 becomes Series J.5A on embodiment of the above modification. This statement should have read :

Series J.5 becomes *Series J5 embodying Modification No.* 1780.

Aircraft Radio Installations

PART II. THE AERIAL

THERE ARE QUITE A NUMBER of strange and inaccurate stories regarding how best to site the V.H.F. antenna, and indeed, such antenna are quite complicated in theory, but the following practical details may prove of some use to the light-aircraft owner.

In general, it is best to site the whip aerial on top of the fuselage, immediately aft of the cabin, although, if a suitable ground plane is fitted, it would be better under the fuselage, during flight, as this would enable the antenna to "look" down.

The main disadvantage of fitting the aerial under the fuselage is that it may be screened while the aircraft is on the ground. (It is not recommended that the whip be fitted on top, and the aircraft inverted during flight !).

If we assume, therefore, that the whip is fitted on top of the fuselage it now only remains to arrange a "ground-plane."

The ground-plane consists of a circular sheet of metal, of a radius at least equal to that of the whip itself, fitted on or under the aircraft skin, at right-angles to the whip and with its centre the base of the whip.

This is connected at its centre to the screen or outer braiding of the antenna feeder, where it joins the base of the whip.

The above arrangement is difficult to fit, of course, and so a practical answer can be found in using four strips of copper foil, each of the same length as the whip or greater, and made to form a cross.

The centre should be the base of the whip, where the strips are joined and connected to the outer as before. Generally, this is to stimulate the conditions on an all-metal-skinned aircraft which presents an infinite ground plane. The all-metal construction of the Auster frame-work is an advantage in this respect, and makes quite an effective ground-plane.

—To be continued.

* * *

A GENTLEMAN is a measured combination of silence, courtesy, dignity, sport, newspapers and honesty.—*Kapel Carek.*

New Zealand's Auster Concessionaire

British Aircraft Ltd., P.O. Box 547, Wellington are the Auster concessionaire in New Zealand, and the considerable number of these aircraft operating through North and South Islands is a good indication of their activities in post-war years. Mr. Higgs is the Managing Director, with Mr. P. Haywood as Manager of the Aircraft Division.

An Auster on the airstrip at Hermitage, New Zealand, with the picturesque scenery in the background.

This company is another which might well provide an interesting narrative for some future issue of this magazine, since much has happened over the past few years in connection with New Zealand aviation for which they may justifiably feel proud.

° ° °

OBVIOUSLY

FAY: "I wonder why men join clubs ?"

KAY: "Some join because they have no homes—and others because they have !"

To the Editor

Dear Sir.—I was interested to read in your December, 1950 issue under "Auster Personalities—No. 8, Mr. A. Mackenzie-Low" about Auster, Model "D", "Bluebird," and to see from the photograph that it is the one which I bought from Mackenzie-Low through the good offices of your firm, who were most helpful a year ago in finding me such a fine little aircraft.

I had never flown an Auster before, but, having flown all sorts of heavier aircraft in the past 21 years, I find that the Auster makes an excellent personal light aircraft for pleasure flying and private travel. In March last, my wife and I took a trip in "Bluebird" to the Scillies to get some colour movies of the islands of flowers and, after a few days at St. Mary's, "Bluebird" was invited by Major Dorrien-Smith to Tresco, where we took advantage of the time around low water to use the eastern beach whilst we visited the beautiful tropical gardens on that island.

"Bluebird" now has a full set of instruments, and I am putting in V.H.F. in accordance with the "Arrow" specifications, since it is practically the same fuselage and the Cirrus Minor is already screened. "Bluebird", which is now kept very smart and airworthy as the C.O.'s private aircraft, now sits, and indeed sometimes flies, in the large shed which once housed some of our famous airships.

Another Auster which I often fly is G-AJIW, an "Autocrat," equipped with nearly all the refinements. It belongs to a friend and neighbour of mine, Neville Rogers of Castle Mills, Bedford. In "Item Willie" (not to be confused with Neville Shute's G-AKIW) Neville Rogers and I, navigated by my wife in the third seat, plan to leave England during January in search of some sunshine. We hope to find it in French Morocco, and to spend three weeks' vacation flying from Southampton to Bordeaux, Perpignan, Southern Spain and Gibraltar, to Casablanca and back.

With three up, radio, and sixty pounds of luggage, we shall be up to our A.U.W. with normal full tanks, so will do the 1,600 or so miles each way in stages of not over $2\frac{1}{2}$ hours each. It will be interesting and pleasant to be able to stop and see many of the small landing grounds, and to take advantage of the excellent peace-time refuelling

arrangements which Shell and other companies now provide.

I thought that you might like to have an account when we return, of our trip. Although not a long one for an Auster, it may interest some readers of your excellent little magazine as a possible "easy way" to make an economical flight in winter into finer weather conditions, which act as such a tonic in the midst of a cold, damp winter.

Yours truly,
Group-Capt. R. A. McMurtie, D.S.O., D.F.C.,
Cardington.

Miscellaneous Jottings

FROM AFRICA

MR. W. SIGG, an Auster owner since 1946, sends this photograph of his aircraft at Magburaka, in the African bush, during November, 1950. It is understood that Mr. Sigg plans to fly "Swiss Lady" from Freetown to Switzerland during May or June of this year.

FLYING DISPLAY EXHIBITION

THE MANAGEMENT COMMITTEE of the S.B.A.C. has decided that the twelfth Flying Display and Exhibition shall take place

in the period 11th—16th September (inclusive), 1951, the 15th and 16th September being the public days.

The Display will coincide with the Annual General Meeting of the International Air Transport Association, which this year will bring representatives of all the world's major airlines to London, and with the 1951 Anglo-American Conference organised by the Royal Aeronautical Society.

FROM MALAYA

IN HAZARDOUS FLYING CONDITIONS helicopter pilots are doing magnificent work in the jungle areas of Malaya, and the knowledge that casualties can be carried direct from the heart of the jungle to hospital is having a good effect on the morale of the troops there. Since three Westland Sikorsky helicopters started functioning in June, twenty-one wounded men have been picked from the jungle and flown to hospital. Without air help most of them would have died. In one instance a casualty was on the operating table in less than

an hour. In another, two helicopter pilots flew for more than thirteen hours to take a badly wounded private to a base hospital.

The procedure adopted is that, when the army reports a man wounded in an area from which it is difficult to remove him, an Auster is flown by army pilots to find a suitable alighting area. They often guide the helicopter to the wounded man.

The twenty-first casualty—a Malay soldier of the Malay Regiment—was uplifted from a small clearing in dense jungle in North Perak and taken to hospital in weather described by the helicopter pilot as the worst he had experienced in Malaya, which forced him to keep an escorting Auster in sight all the time in order to get an horizon. It is significant that Austers also can fly in very bad weather.

India's Auster Concessionaire

The sole Auster concessionaire for India is Mr. S. Sundra, of the Indo Overseas Corporation, Connaught Place,

This photograph shows Mr. Sundra with his white Alsatian puppy, new Plymouth station-wagon and an Auster Aiglet.

P.O. Box 409, New Delhi, who will be pleased to give information and, wherever necessary, active demonstrations of Austers within his territory.

Mr. Sundra has already received examples of the *Autocar* and *Aiglet* aircraft, and his reaction to the latter is that it "climbs like a rocket." This rather bears out a New Zealand correspondent's version that it "goes upstairs like a homesick angel." We in this country are well aware of the *Aiglet's* performance in this respect, but such unsolicited praise from two other widely dispersed countries speaks well for its performance in differing operating conditions.

Looking Ahead

AIRCRAFT PERFORMANCE during the coming twelve years has been outlined in detail by the National Advisory Committee for Aeronautics for the Air Co-ordinating Committee as the basis of a blueprint for the integration of air traffic control operations in the U.S.A.

The trends show that :

PISTON-PROPELLER TRANSPORTS will cruise slightly faster, with somewhat longer take-off and landing distances. Turbine-propeller transports will have a comparatively high cruising speed and climb, with rates of descent limited by compressibility. Future turbine-jet transports will have conventional take-off and landing speeds, with cruising speeds in the very high subsonic range, but not supersonic.

LIGHTPLANE IMPROVEMENTS will continue to be on payload, range, economy and initial cost rather than in radically improved performance. With projected turbine-propeller lightplanes, high speeds will be nearly 300 m.p.h., operating altitude 10,000 feet, rates of climb 2,500 ft./min., take-off distances of 2,500 feet and stalling speeds will be 35-85 m.p.h.

OVERLOADED HELICOPTERS are forecast which will require a take-off and landing roll and all-round performance similar to existing lightplanes. Projected helicopters should have a performance comparable with future types of lightplanes.

CONVERTIPLANES will have the take-off, climb and landing characteristics of current and projected helicopters, while cruising performance will be comparable with equivalent types of fixed-wing aircraft.

FOR COMBAT AIRCRAFT the take-off distances will get shorter, with very high rates of vertical climb and steep descents. Cruising speeds should be subsonic, with occasional supersonic dashes.

AUSTER AIRCRAFT LTD.
and
AUSTER FLYING CLUB

A
DANCE
will be held at the
BELL HOTEL, LEICESTER
on
Wednesday, 21st February

Tickets 3/6

★ All Auster friends welcomed ★

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