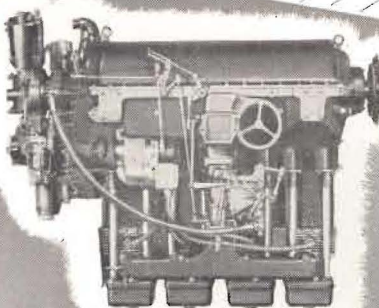


AIRCRAFT

News

JANUARY • 1951

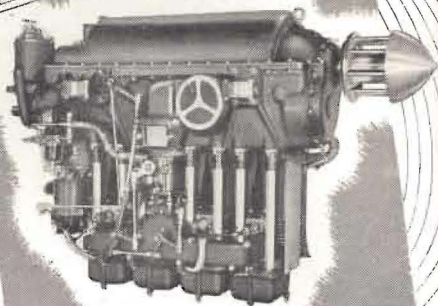




MAJOR

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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AIRCRAFT NEWS

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JANUARY, 1951

Editorial

ON THE NEXT PAGE of this issue we reproduce a New Year Message from the Rt. Hon. G. R. Strauss, P.C., M.P., Minister of Supply. We can add little to this message, but we most certainly reiterate his first words. We can, too, promise further progress in the development of light aircraft during 1951.

In this issue, and subsequent issues, we are incorporating a new feature. We shall, as the occasion demands, include information regarding modifications (especially essential modifications) general operational advice, servicing instructions, etc., which have in the past only been circulated through the medium of the Service Bulletins for civil Auster aircraft.

This means that the distribution of the Service Bulletins will henceforth cease. It also means that readers will receive regular monthly advice regarding Auster developments. If there are no developments during any month then the *News* will say so.

In order to continue the numbering sequence of the Service Bulletins the Bulletin included on page 7 of this issue carries an Issue No. 17.

We would emphasise that where, for example, flying clubs receive this *News* it is essential that the Bulletin is passed to the Chief Engineer. He, in turn, should naturally ensure that at least the page(s) bearing the Bulletin are retained for future reference.

New Year Message from the Rt. Hon. G. R. Strauss, P.C., M.P., Minister of Supply



TO YOU AND ALL YOUR READERS I send my very best wishes for a Happy and Prosperous New Year.

1950 has been a year of many difficulties, but of even greater achievements. It is from our triumphs of the past years that we should draw the courage and strength to face the problems of 1951.

Since the war our country has been called upon for greater efforts than ever before in peacetime. You have responded with initiative, skill and devotion. Our in-

dustry is now in fine fettle, the damages of the war have been repaired and we are well equipped to take our part in the better world of the future. We are still looking forward with justifiable hope to a fuller life for all, and we continue to strive to bring that about.

It has given me great happiness to have a share in your work in 1950 ; I look forward with confidence to our tasks of 1951.

(Signed) G. R. STRAUSS.

What Is It?

IN OUR OCTOBER ISSUE we made the mistake of confusing an AUTOCRAT with an AUTOCAR. Our mistake was soon discovered by many readers though.

As a result of this we wonder how many can decide exactly which type of aircraft is portrayed in the following photograph.

The solution is given on page 15.



The Press is most welcome to utilise subject matter from the *Aircraft News* in whatever manner it may desire with or without acknowledgement. The Editor will also be pleased to be advised of any items suitable for inclusion in a future issue, and to receive photographs of Austers and those who fly in them.

Austers in Antarctica, 1949-50

By SQUADRON-LEADER G. B. WALFORD, R.A.F.

PART II.

In Part I of this article the author gave details of the purpose of the Norwegian-Swedish-British Expedition, and the preparation necessary to equip the R.A.F. unit. He described the re-arrangements made at Cape Town and how, having reached the "roaring forties", the after-deck of the Norsel was permanently awash in swirling water. Since this water has no effective means of exit, compression was being set up so that the floor of the crate housing one of the aircraft began to give way. Then.....

BEING THROWN from side to side, we worked as best we could inside the crate to repair the damage and reinforce the structure of the crate by means of pit props. The salt water too was being literally splashed around both aircraft. For a time the ship proceeded at slow speed, head on to the seas, and gradually the weather improved.

We now heard that our ship would have to divert to forty degrees west to meet the whale factory ship, thus adding another fourteen days of passage through the "furious fifties." It seemed an outside chance of being able to preserve the aircraft intact to our destination.

The careful packing and stowage paid good dividends, and by the time we finally reached the ice a fortnight later, no great further damage had been suffered.

Up until this time we had anticipated being able to operate a ski-plane from the pack-ice for our first reconnaissances, and soon after meeting the more stable conditions of the ice we turned the aircraft round into the fore-and-aft position, tipping it up on one wing to clear the funnel. Then, raising it up on the derrick, we secured the Canadian ski-wheel combination and installed the radio.

But the ice this year was going to be difficult. Our first attempts to make headway to the south were frustrated, and it was not long before we were held up, surrounded by tightly compacted floes, unable to move in either direction. The surface of these floes was so rough and heavily hummocked that it was at once apparent that ski-plane operations were out of the question. In this unhappy position

we remained beset for about a week, killing time as best we could. Seal-hunting, ski-ing and football kept our minds from the uncertainties of the future.

Time was advancing rapidly, and if we were to set up the base this season we would have to work very fast, and air reconnaissance to get through the pack-ice belt became more and more important. It was resolved therefore to try and break out once more into the open sea, there to fly off the float-plane in the search for another route south. Moving slowly out of the ice again, we carried the float assembly down from where it had been stowed on the roof of the wheel-house and placed it alongside the aircraft on top of the crate. Here it was we wished we



The floatplane being lowered over the side of the "Norsel" for an early reconnaissance flight. It was somewhat disconcerting when taxiing in sub-zero weather, to notice spray immediately freezing to the floats.

had received the detailed instructions on assembly and operation that we had expected before we left Cape Town. However, thanks to the skill of Sergeant Weston and Corporal Gilbey and the general simplicity of the design, we put everything together in a few hours.

The first suitable stretch of open water that appeared was made use of. With quite unexpected facility I was lowered over the side in VX 127 and was shortly being rowed away from the ship. Once cast off from the pulling

(continued on page 11)

AUSTER SERVICE BULLETIN

Auster Aircraft Limited
Rearsby, Leicester, England

January, 1951
Issue No. 17

Auster Model D

GENERAL SERVICING INSTRUCTIONS

THERE HAVE BEEN one or two cases recently where, due to fatigue, cracks have appeared in the extreme rear of the longerons underneath the sternpost on Model D aircraft. Apart from the possible collapse of the tail skid no serious damage can result to the aircraft due to this cracking. It is strongly recommended, however, that at the next C. of A. check, or if the longerons show signs of cracking, they be repaired in accordance with the approved scheme obtainable on application to the Auster Service Department.

It should be noted that there is no necessity to carry out this scheme on Model D aircraft as follows :—

(a) Where a stiffening modification has been incorporated. This can be identified by evidence of a welded repair having been made to the longerons just aft of the second joint forward of the sternpost.

(b) Where a tail wheel has been fitted in lieu of the skid. This modification involves the strengthening of the longerons referred to in (a) above.

If desired, all materials necessary to effect the repair can be supplied with the repair scheme data.

Austers with belly-type long-range fuel tank

FLOORBOARD ATTACHMENTS

IT APPEARS THAT some operators have removed the long-range fuel tank from beneath the fuselage of their aircraft but have omitted to replace the attachment bolts before flying the aircraft again with the tank removed. These bolts additionally secure the cabin floorboards, so it should be noted that if the long-range fuel tank is removed for any purpose and it is desired to fly the aircraft before the tank is replaced, the attachment bolts *must* be reinserted.

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

MODIFICATION No. 1780 (Double Rear Seat)

THE EMBODIMENT of the double rear seat to convert the

aircraft concerned into a four-seater involves the change of type designation of that aircraft. In view of this the Certificate of Airworthiness should be returned to the Ministry of Civil Aviation when Modification No. 1780 has been fitted.

As a matter of interest the type changes are as follows :—

Mk. 5 becomes *Mk. 5A*.

Autocrat (Series J.1) becomes *Series J.1A*.

Aiglet (Series J.1B) becomes *Series J.1B embodying Modification No. 1780*.

Series J.5 becomes *Series J.5A*.

All Austers

ELECTRICAL INSTALLATIONS

WHEN ORDERING ELECTRICAL EQUIPMENT, and especially electrical modification kits for embodiment into Auster aircraft, it is essential that the order is accompanied by full information regarding the present circuits fitted into the aircraft.

If possible, a sketch should also be included showing the arrangement of the instruments and equipment at present fitted on the instrument panel.

This information is requested in order that our Service Department can give speedier delivery of equipment. If full details are not given with the order, there is a strong possibility that further correspondence will result, thereby delaying the despatch of the equipment.

Austers Mk. 4 and 5

FULLY-OVERHAULED LYCOMING ENGINE, Series 0-290-3

FURTHER TO THE DETAILS given in the *News* of April last, we are now pleased to advise all owners of Auster Mk. 4 and 5 aircraft fitted with the above engine that we can now offer a completely overhauled engine at a part-exchange price of £100 plus the cost of £5 for fitting and test flying at Rearsby Aerodrome. This offer is made on the understanding that we take for part-exchange your time-expired engine which must be complete and in a flying-in condition. We have a few of these overhauled engines now ready and we strongly recommend owners and operators to contact the Auster Service Department as soon as possible if they are interested ; it is possible that later in the season we

shall not have supplies of engines readily available and consequently some delays may occur in carrying out the exchange. The time taken for the exchange is normally one day, providing the aircraft is flown into Rearsby early in the morning, by appointment.

Anyone requiring further details on the above subject should contact the Service Department, Rearsby.

It will also be possible in the near future for us to supply fully reconditioned engines to overseas customers in part-exchange for their time-expired engines. Anyone requiring information on this point should also contact the Service Department.

Aircraft Radio Installations

An article in three parts dealing with V.H.F. radio equipment for light and medium aircraft. The three parts will deal with (1) The Equipment, (2) The Aerial, and (3) Noise Suppression.

PART I. THE EQUIPMENT

UNDOUBTEDLY, THE MOST IMPORTANT radio equipment used in light and medium aircraft is the V.H.F. Communications Transmitter/Receiver, good examples of which are the Murphy V.H.F., 5 and 23 channel equipments, type MR.60 and MR.80.

These equipments were designed to give maximum efficiency, combined with simple but effective operation at minimum weight and cost. They have the advantage of requiring only *one crystal per channel*, thus effecting a considerable saving in crystal cost and stowage.

The system of operation is as follows :—

The V.H.F. aircraft band 116-132 M/cs. is divided into four sub-bands, of 4 M/cs. each, designated A, B, C, and D. They cover respectively 116.1-120, 120.1-124, 124.1-128, 128.1-132 M/cs.

Channels may be allocated all to one band, or any number to any band, thus giving complete flexibility. In the case of the 5-channel equipment, the crystals are inserted in the remote-control unit, and each band selector switch set to the correct band.

Thereafter, one need only operate the channel selector switch to obtain the correct frequency. No manual tuning is necessary, as it is entirely automatic. Crystals may be changed in the air if necessary, by merely plugging in the new crystal and resetting the band switch, should this be required.

With the 23-channel equipment all the desired crystals are inserted on the ground. Operation of the 23-way switch is all that is necessary to select the desired channels.

The equipments are designed for use with moving-coil microphones and headphones, but can be easily modified for other types.

An important factor with regard to the aircraft receiver is the suppression of noise, and this is taken care of by a carrier-controlled series limiter, which ensures a quiet background under the most severe conditions.

It is not possible to give specific range figures with this type of equipment, but the average is 50-60 miles at 3,000-4,000 feet. It should be remembered that V.H.F. propagation follows nearly visual rules, and therefore the higher the aircraft, the better the range.

The installation of these equipments is quite simple, as there are no mechanical connections between the main unit and the remote controller. The main unit need only be accessible for servicing and overhaul.

Most charter companies in the United Kingdom use this equipment, and installation drawings are available for the Auster and for most other light to medium aircraft.

Inter-com is available, through the medium of the inter-com unit, type I.C.66, for both equipments, and up to three stations (inclusive of the pilot's position) may be wired.

The station selector unit, type S.B.101, provides facilities for switching the operator's headphones to any one of four receivers, such as V.H.F., M.F., S.B.A., etc.

It is therefore possible for the smaller types of aircraft to have communication facilities equal to that of their larger brethren, but at a reasonable cost and with a minimum weight penalty.

—To be continued.

AUSTERS IN ANTARCTICA *(continued from page 6)*

boat, I primed the engine and fired the starter cartridge. Immediately the engine started, and I found myself motoring along at about ten knots, and after five minutes' warming up, decided that the experiment with the Auster float-plane could no longer be postponed. Opening the throttle, I



Take-off was very satisfactory

V.H.F. COMMUNICATIONS EQUIPMENT

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- ★ One crystal per channel
- ★ Automatic tuning
- ★ Noise Suppressor
- ★ Remote control
- ★ Inter-com unit type I.C.66
- ★ Station selector unit type S.B.101

murphy

M. R. 60 — 5 CHANNEL

M. R. 80 — 23 CHANNEL

Further information available on request to:
MURPHY RADIO, LTD., ELECTRONICS DIVISION, WELWYN GARDEN CITY.
Telephone Welwyn Garden 800.

surged forward with a gathering cloud of spray, and, after a series of uncertain movements with the control column, found myself airborne after one minute. I was both surprised and delighted to find that the aircraft behaved in every way as it should, and with great confidence I set off on the first reconnaissance.

The VHF and Marconi radio compass provided excellent communication and navigation, and all the information that I transmitted about the aircraft's performance and my observations to Tudor acting as controller, were recorded on a private tape-recording machine. Alighting was very straightforward, and the aircraft, hoisted aboard once more, showed no signs of damage or strain.

In the days that followed, regular reconnaissances were made in varying conditions of ice and weather. Not



All hands joined together in assembling the second aircraft, which had remained crated throughout the voyage.

always when there was a pressing need for a flight were we able to find good stretches of open water, and on more than one occasion both pilot and spectators wondered how long it would be before that submerged lump of ice finally penetrated the floes. However, all was well, and, after many delays and disappointments with the failure to discover a suitable landing place on the shelf ice, Tudor, on the 10th February, flew off in miserable conditions of low cloud and snow showers to report very soon a possible ice quayside.

Later, in improved weather conditions, he carried the leader of the expedition as passenger for closer examination. It was pronounced fit, the ship was made fast alongside, and unloading began.

We had now to transpose VX127 from float-plane to ski-plane, and to build VX126 up from its partially assembled state in the crate. A mild blizzard prevailed for the two days we used for this work. In off-loading VX126 we were glad that the crate was made up in sections, for after the rather wearisome unscrewing of all the nuts and bolts we were able to lift ashore first the top and then the sides of one complete half. The derrick then lifted VX126 forward and up when we turned her round in mid-air and placed her on the ice. The completion of the assembly of this aircraft was hampered by the unpleasant weather conditions. The main components were quite straightforward, but it is not until an aircraft is put together in a polar climate that one curses the invention and necessity for split pins, locking wire and all the other oddments that go to make the finished article. The N.C.O.s, their hands greased, worked for astonishingly long periods without complaint and without the need to seek shelter and warmth; thus by the time the weather cleared we had two serviceable Auster 6 ski-planes parked on the ice "tarmac" ready for operations.

During the next week, while the base was being built, we flew some forty hours, sketching and photographing the coast and crevasses, and sighting 160 miles away the nearest and only outcrop of mountain peaks. Each member of the wintering party was taken for a flight round the area, so that they could have some idea of the barren wilderness of ice that would enfold them for the next two-and-a-half years.

The aircraft remained serviceable all this time, in spite of the inevitably rough treatment they had from the hard ripples or "sastrugi" in the ice surface. Our landing-strip lay about 500 yards to the south of the ship, and to reach it we had to taxi up a slope of about one in ten. Without brakes the descent was somewhat hazardous, and it was essential to have someone on the wing struts. The ski-plane would become airborne with full load in about 300 yards, with a wind of force 4, but with no wind at all the run was very much prolonged. Flying over the shelf ice was quite simple when there was little cloud, but in

overcast conditions the cloud merged with the horizon into an indefinite greyness, and depth perception was difficult.

On flights over the sea we repeatedly noticed new ice forming—a danger signal that temperatures were getting much lower, and that it was time we left. We had done all we could to assist the wintering party build their home, and we had discharged the duties set for the aircraft.

We constructed a wooden cradle to take one fully assembled aircraft on the afterdeck, and the fuselage of the other was secured on the foredeck, with the wings in the hold. On February 22nd we set course for South Africa, and two days later became imprisoned in the new ice. The



The two Austers at their landing base in Queen Maud Land, sheltered by the huge ice cliffs.

outlook was serious. We hoped for a gale to help break up this ice, but none came, and, as we waited, locked in this unhappy position, we soon came to realise that nature was not going to help us and that we must free ourselves by our own efforts if we were to avoid being beset for the winter with only fourteen days' food left. Again conditions were not favourable for ski-plane operations, and even if they had been, and we had discovered where the open water lay, it still remained for the ship to reach it.

Using fifty kilos. of dynamite to break up the ice-floes round the ship, we managed to struggle forward sufficiently to reach looser ice and thence the open sea. A full gale awaited us there, and the prostration of sea-sickness again overcame many of us; but with only three degrees of starboard rudder to help us north we slowly but safely made our way into Table Bay once more.

I think we were able to prove once again Scott's dictum that the best equipment is only just good enough for the far south. Not only must it be of the first quality, but it must be suitable—it must stand being treated roughly on the voyage—it must not take up too much space, and it must be simple and reliable. We had no complaints, and if required to do a similar job again would not alter our equipment or technique in any way.

What Is It? — *Solution to Puzzle Photograph on page 4.*



WITH THE GREATEST OF RESPECT for your undoubted careful scrutiny of our puzzle photo we must advise you that it is a photograph of a 54-inch wing span model of an Auster. As for the exact type of Auster it represents, perhaps you will compare it with the above photograph of a SERIES J4 which has a Cirrus Minor I engine of 90 h.p. Knowing that the puzzle picture is a model you will be able to discern various detail differences between it and the true aircraft.

Some readers might think it is a MODEL D, with tail wheel instead of skid, but from the angle the model was photographed it is more representative of the SERIES J.4. Note, too, the absence of the trim plane beneath the tail plane.

Finally, as a matter of interest, the model was made by Capt. D. Applegate, R.A., who flies Austers on Air O.P. work, and the photograph was kindly submitted by Mr. Ivo Peters.

Miscellaneous Jottings

MR. MACKENZIE-LOW

IN OUR LAST ISSUE, page 13, reference was made to Mrs. MacKenzie-Low. This was a typographical error which passed unnoticed, and we hope it has not caused embarrassment to Mr. MacKenzie-Low. Actually, he is a confirmed bachelor, who, so far as we know, has no idea at the moment of changing this status.

THE BARE FACTS

PILOTS OF TWO TIGER MOTHS and an Auster are reported to have had their flying licences suspended at Sydney, after a complaint that they had flown at tree-top level over a nudist camp.

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THE HYDRA-STATIC TWO LEADING SHOE AIRCRAFT BRAKE



THIS brake consists of two self-aligning shoes operated by two wheel cylinders spaced diametrically opposite.

Each wheel cylinder has two pistons of a different form: one having a slot at right angles to the axis of the bore, which operates the shoe when the brake is used in forward rotation, and the other with the slot inclined at an angle to the bore which forms the abutment for the other shoe in similar condition.

This inclined slot has a predetermined angle which allows the shoe to accurately align itself to the drum as well as forming the abutment. The total shoe reaction is transmitted via a shoulder on the piston to the cylinder body.

By this arrangement, two-leading shoe operation is obtained in either direction, and greater power for a given input and greater stability is obtained.

TYPICAL FIGURES

$5\frac{7}{8}'' \times 1\frac{1}{2}''$ Approximate maximum dynamic torque 2,950 lbs. inches, at 60 lbs. per sq. inch lining drag. Two $\frac{3}{4}$ ins. diameter cylinders.

$7'' \times 1\frac{1}{2}''$ Approximate maximum dynamic torque 4,200 lbs. inches, at 60 lbs. per sq. inch lining drag. Two $\frac{3}{4}$ ins. diameter cylinders.

Master cylinder for use with the above brakes is a $1\frac{5}{32}$ ins. diameter \times $1\frac{1}{2}$ ins. stroke design.

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