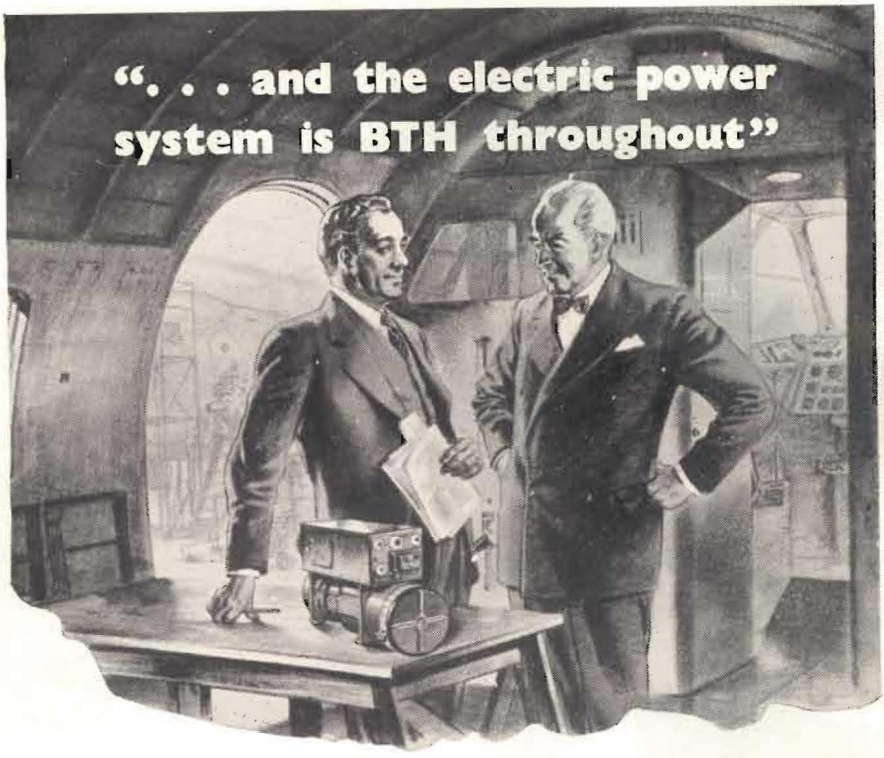
AUSTER NEWS

Published by AUSTER AIRCRAFT Limited
REARSBY AERODROME · LEICESTER · ENGLAND

Vol. 5 : No. 3



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Editorial

DREADFUL AS THEY ARE, wars would appear to be inevitable, and, dependant upon the elapsed time between each one, so the fury and scale of them increases. The ending of the last world war heralded a new era intended to be free from past militarism, with people believing that owing to man's inventive genius in creating the atomic bomb no country would dare to break the peace for fear of being annihilated by this and other varieties of new armaments. The enormous amount of publicity given to these atomic-age weapons naturally led the public to believe that if by the remotest chance a war was to develope then it would be fought by white-coated, button-pushing, back-room scientists, remotely controlling guided weapons. However, an 'opportunity' arrived in the form of the Korean War to practise this type of warfare, and as we now all know, it was conducted along similar lines to the 1939-45 conflict. As the Korean hostilities progressed it became obvious that push-button warfare was still 'under development,' and destruction was thereby effected against each opponent by the use of men, artillery and offensive sorties by aircraft. Even more ironical was the fact that in this atomic age, the Americans used Harvards armed with rockets and bombs as standing offensive patrols deploying them against front-line targets, very often without fighter cover. So it would seem that there is still room for piston-engined military aircraft with undreamt-of possible uses for them appearing at frequent intervals from out of the blue.

STOP PRESS

WE ARE PLEASED TO RECORD that a private owner has just won the 3,176 mile "REDEX" reliability trial in Australia. He is Mr. W. Murrell of Hillston, New South Wales who flew his Auster Aiglet Trainer and won for himself a £1,000 and a smart trophy. The aim of this sporting event was to demonstrate the reliability of light aircraft which have pioneered Australia's airlines' networks. The competition was open to most types of aircraft not exceeding an All-up-weight of 12,500 lbs. So it's hats off to Mr. Murrell who piloted the only aircraft to complete the course without the loss of any marks.

FRONT COVER

THE NEW AUSTER Mk. 9 A.O.P. The two entry doors on the starboard side of the fuselage can be seen to advantage in this view. A full description of the Mk. 9 appears on page 15.

Learning to Fly*

by "STUDENT PILOT"

I HAVE NEVER BEEN plagued by insomnia and normally find no difficulty at all in slipping into a dreamless oblivion within minutes of my head touching the pillow. I've never lost much sleep over sleepless nights, if you see what I mean. If you don't, just let it pass. On the very few rare occasions when sleep has refused to come, I have resorted to the counting of sheep and have usually found that this has done the trick. After I had received my second flying lesson at the Club the other day, I just couldn't seem to drop off to sleep for some reason. The little lamb proved a complete failure. Eventually I obtained the required self-hypnotic effect by muttering to myself 'T.T.M.F.F.G.H.' The next thing I knew was my wife shaking me in the morning and telling me to get out of bed. 'Goodness only knows what you've been up to,' she said. 'All night long you've been muttering something about 'throttling the mixture.' When I became fully awake, I was able to reassure her by saying that my mutterings were not caused by the guilty conscience of one who had committed some dastardly crime. I had merely been repeating my instructor's formula for remembering the 'Vital Actions' drill.

You will no doubt recollect that I mentioned this cockpit drill in my last article. At that time I had not really reached the stage where I was able to make proper use of this Pelmanistic association of ideas device. Since then I have gone through the drill a few more times and am now word-perfect. T. stands for Trim, T. for Throttle-nut, M. for Mixture, F.F. & G. for Fuel, Flaps and Gyros and H for Hatches and Harness. As this Vital drill is gone through immediately prior to taking off, it is obvious why it is so important that it should be carried out correctly in every detail.

My training has now reached the stage where I have had actual experience of :— (*a*) Taxying (*b*) The effects of the controls (*c*) Straight and level flight. Let's consider them in that order.

I found that it is by no means easy to taxy an aircraft without turning and twisting unnecessarily in one's tracks and without moving forward spasmodically and in jerks. The two controls used on the ground are the throttle for movement and the rudder assisted by the brakes for direction. I found both throttle and rudder far less responsive on the ground than in the air and it takes a little time to get the 'feel' of these controls. To move away from a standing start, you have to give much more throttle than you need to use to maintain a constant rate of movement. In other words you cannot just leave the throttle in one position and expect in this way to move over the ground at a set speed. When you have started moving, uneven patches of ground and gusts of wind all have their effect so that you are constantly moving the throttle a little one way or the other. The two golden rules of taxying appear to be :— (1) Keep a sharp look-out for other aircraft which may be moving on the ground or

* *With acknowledgments to the Editor of "Over to You."*

The recommended grip.

landing or taking off. (2) Never taxy an aircraft into or out of the hangar doors—not even when the latter are open!

As I have already said, direction of movement on the ground is controlled by the rudder with assistance from the brakes. Here again 'feel' is the guiding hand—sorry I mean foot. You have to put on far more rudder than is needed for a turn in the air. But once the rudder has begun to take effect, the aircraft turns very definitely in the desired direction and will continue its rate of turn as long as the same amount of rudder is applied. It is necessary, therefore, to keep putting on and taking off rudder all the time. The brakes on the Aiglet are operated by two separate pedals just below the rudder bars which have been adjusted to work in connection with rudder movement. I found their operation during turns a little difficult at first but simple and effective for bringing the aircraft to a stand-still.

I found my instruction on the effects of the controls in the air really fascinating although a little complicated at first. All the basic control surfaces—rudders, ailerons and elevators—act separately and in conjunction with each other to control the aircraft's movement through the air. At first I found myself relying mainly on movements of the control column to carry out whatever maneouvres I was asked to make the aircraft perform. I hate to imagine what the pupils of a school near Gatwick must have said to each other when they looked up from their playground and saw our Aiglet spinning down towards them. Perhaps one little brat pointed up and said: 'Please teacher! There's someone up there not doing what he has been told.' He would, of course, have been quite right.

The control column controls the

angle of climb or descent. During a turn it also controls the angle of bank by means of the ailerons on the wings. The use of bank to prevent the aircraft from skidding outwards during a turn, reminds me of a motor cyclist leaning inwards when he is going round a bend. Both during turns and recovery to straight and level flight, I found that the major problem was to remember whether I was losing or maintaining height. I was apt to allow the control column to go forward or to pull it back quite unconsciously. Because of this I was never quite certain of the aircraft's attitude.

Instructors have a useful habit of bringing one down to earth in order to drive home important points of flying instruction. They compare what goes on up in the air with what happens down below. I personally find this method helps me a lot to grasp essential facts. 'What do you do when you want your car to go faster?' asked my instructor. The answer to that one sounded simple enough and I replied: 'I just put my foot down on the accelerator and give her more throttle.' 'Fair enough enough!' he said. He then told me to watch our A.S.I. and he would show me that in the air one can increase or lower one's speed without touching the throttle in any way. I watched our speed drop from 90 m.p.h. to 65 and then slowly advance to 100. The throttle had not been touched and there was no noticeable alteration in the tone of the engine. My instructor pointed out that the changes of speed had been achieved by altering the altitude of the aircraft and by raising or lowering its nose in relation to the horizon. In the air one can in fact create one's own hills to climb or descend at any moment one chooses. What surprised me was how a very limited and almost imperceptible movement of the stick in either direction can result in quite a considerable change of speed. I found out that when I was climbing at a certain angle with a single throttle setting, the airspeed remained constant. If, however, the nose was highered even in the slightest degree, the speed began to drop rapidly. Each type of aircraft has its own best throttle settings and speeds and therefore attitudes for climbing and descending and also its own cruising speed and cruising engine R.P.M.

I found that both when climbing and descending and also when flying straight and level, I was paying too much attention to the A.S.I. when I was left to fly the aircraft on my own I tried to keep the speed constant by movements of the throttle lever. I did not at first realise that the reason why my speed lept changing was that I was unconsciously letting the nose come up or sink down. Except when it is being set for climbing, cruising or gliding, the throttle lever should be left severely alone.

Up to now the weather has not been very kind to me. It has been fit enough for those who are in a more advanced stage of their training. But the most important thing which the beginner has to watch is the position of the aircraft's nose in relation to the horizon. The mists of winter at times make the horizon invisible altogether and at other times very difficult to discern. My eyeballs have on occasion nearly popped out ot their sockets in my

(*Continued on page* 6)

endeavours to fix and to hold on to some tiny identifiable speck on which to steer a straight and level course. Perhaps I shall be able to cope more easily with such conditions later on. They have certainly made me realise how watchful one needs to be in case one strays from the chosen path with-out realising that one has become wayward—and thus almost suitable material for the Rev. Billy Graham.

I am now two hours and thirty minutes advanced along the way. I have no illusions about the distance which I have yet to go before I can claim to be a qualified aviator. I am, however, very agreeably surprised that the instruction at this stage is so much more practical than theoretical. I have never been the type who can absorb a technique through blackboard tuition.

I heard the following definition of an 'Instrument Rating' in the club lounge: 'A lower deck member of a Naval orchestra.' No names, no band practice!

I was talking the other day to a well-known national newspaper Air Correspondent. Eventually we got around to swapping our experiences while learning to fly. Surprising as it may seem to some of you newspaper readers, most Air Correspondents can fly—and I don't mean only by night. I happened to mention that the high-light of my own limited experience to date has been learning how to recover from a stall. I had to admit to my friend that, in all the ups and downs which I have experienced in over twenty years of flying, the nearest I have ever been to being really frightened was in an Auster during the various attitudes into which I managed to get the aircraft during my attempts to recover from stalls.

After this recovery-from-stalls experience, I began to consider very seriously whether it would not be better for me to stick to a passenger seat in order to get what enjoyment I could out of aviating there and to give up the idea of mastering the technique of piloting myself. My experiences seemed so very remote from my idea of a nice pleasant 'flip.' I began to see more vice in an aircraft than one would expect to find in the back streets of Port Said.

I have now had time to weigh up the situation a little more closely. And I have come to the conclusion that the attitudes of the aircraft were relatively unimportant. What was important was my own personal attitude and reaction at the moment when the Auster began to fall away out of control. I now fully realise that all is sunk if a pilot forgets for one moment that he is the master of the situation.

I have never heard much about what I might perhaps call 'stall experiences' from other aviators. I was forced to assume, therefore, that they must all have taken them in their stride and accepted these deviations from straight and level flying without concern or abnormal tension. This made me feel that perhaps I must be mentally or physically unsuited to becoming a pilot. I was much comforted, therefore, and even a little proud when my air reporter friend told me about his own physical and mental reactions when he was first doing recovery-from-stall training in the

R.A.F. It seems that both he and many of those who were learning to fly with him took some time to overcome their nervous reluctance to tackle their first solo stalls. I gather that many pupils used to fly their aircraft away out of sight of their instructors who were watching them from the aerodrome down below. They could then come back and report that they had duly carried out their solo stalls when in fact all they had been able to perform was a shoot-up of a village High Street or the local pub in a floppy sort of dive or series of switch-back dives. Apparently it was practically impossible to stall the stalls at aerodromes where instructors were able to perch themselves on the tops of nearby gasometers or church towers and watch their pupils through field glasses during the whole of their flights. I have noticed one or two quite high spires and cooling towers etc. near Croydon Airport. I know that the C.F.I. is not a racing man and so I leave it to you to guess why he can sometimes be seen with a pair of field glasses hanging round his neck.

My Instructor told me that there are several types of stalls, not counting those connected with houses, theatres, markets and warts. Without going too deeply into whys and wherefores, it can be said that basically an aircraft stalls when its airspeed is allowed to drop too low and the smooth airflow over the wings breaks up. The unstable conditions which are thereby created result in a lack of lift and this in turn causes the heaviest part ot the aircraft to fall away in the direction of Mother Earth. Unless something is quickly done to regain control, the final result will be what is known in newspaper circles as an 'obit' or in flying clubs as an 'orbit' to higher planes—not to be mistaken for the graduation from single to multi-engined aircraft.

My first demonstration stall was quite straighforward. My Instructor throttled right back and our airspeed dropped to 40 m.p.h. Suddenly the nose dropped away below the horizon and we were out of control. Recovery was effected by moving the stick forward and at the same time opening the throttle. The next stall was carried out with one notch of flap. In this case the airspeed went down to 38 m.p.h. before the nose fell. A third stall was produced by throttling back—not to the same extent as before—and going into a turn. While banked in a turn at this low speed, the outer wing was still moving fast enough for the smooth airflow over it to be maintained. The inner wing, however, was travelling at such a reduced speed that it was stalled.

Many other types of stalls were produced for my 'edification' and no doubt for my pleasure also. I cannot describe in detail how each was produced. I did get this impression, however, that some take a lot of getting into even when one is really trying. In fact during one such demonstration my instructor found that the wing which he wanted to drop away simply would not co-operate. Eventually the other wing obliged. This is because apparently each aircraft has its own individuality and not even the two wings of the same aircraft are completely

(*Continued on page* 24)

GETTING ON

IN THE EDITORIAL of the last issue of the Auster News we made reference to the ages at which certain people learn to fly. This has resulted in letters from all over the world, relating various stories about learning to fly after middle age. Some of the ages quoted were surprising, but we reproduce herewith a self explanatory letter referring to two members of the Exeter Aero Club.

Dear Sir,

Your remarks in the Editorial of your recent issue regarding the ages at which otherwise normal people take to the air prompts us to send you details of two of our members, father and son, who are both active Club fliers.

The son, aged 40, learnt to fly at Exeter in 1950, and the following year his father, aged 63, also took a course and obtained his Private

Posed before a Super Constellation the Auster Autocrat in this picture is used mainly for aerial photography by K.L.M. airlines and is very aptly registered PH-OTO.
(Power note: Autocrat 100 *h.p. Super Constellation* 13,000 *h.p. Ed.)*

Another Auster used for aerial photography is shown in this unusual view. Owned by M. Ray Delvert of Paris, a professional photographer, M. Delvert has modified his aircraft by cutting down the Port cabin door to provide increased vertical deflection for his large hand held camera.

Pilot's Licence. Since then father and son fly regularly, and have recently returned from a flying holiday in one of our Autocrats during which they flew down to Biarritz.

In two years time the grandchild will be old enough to learn, and then we shall really have something to write about!

Yours faithfully,

Exeter Aero Club Limited.

(J. A. Bennett, C.F.I.)

LATE ADDITION TO AUSTER SERVICE BULLETIN

Modification 2697—Re-position of V.H.F. Aerial.

Due to evidence of aerial screening when taxying, restricting ground communication, the position of the aerial has been changed. The new position is above the front cabin immediately aft of the elevator trimmer control.

This modification has been classed as essential by the Air Registration Board and must be embodied in all aircraft fitted with radio before the issue of the next C. of A.

Modification kits will shortly become available, details of which may be obtained from our Service Department. It is desirable that enquiries for these should state the type of radio fitted.

Adventuring in New Guinea

by JOYCE BURNS GLEN

A 23-YEAR-OLD Australian girl is holding down one of the toughest flying jobs in the world. She is Pat Toole, bush pilot with Gibbes Sepik Airways and the first woman to fly commercially in New Guinea. Her territory is the Sepik River area—20,000 square miles of primitive jungles, mountains and rivers, some of them inhabited by head hunters.

A slim attractive blonde, Pat learned hairdressing when she left school. By the time she was 18 she was managing two beauty salons for her father in Coff's Harbour, New South Wales, and learning to fly at the local aero club.

She saved every penny of her salary and used to have lessons in her lunchtime or at weekends—flying Austers, Chipmunks and Dragons. It took her three years of hard work to get her commercial pilot's license and radio operator's ticket.

Recognition Soars

Her reputation as a skillful and reliable pilot got her the job with Gibbes Sepik Airways which is one of the most exacting that commercial aviation has to offer, for this mountainous island is considered the worst flying country in the world, The airline, based at Wewak, services remote outstations.

It flies foodstuffs and natives, the Sepik being a big recruiting area for native labour for coconut plantations all over New Guinea. Light aircraft are used; such as single-engined Austers and Norsemen.

Pat Toole

Pat spent her first three months studying maps and getting to know the contours of the land. The familiarization period includes 200 hours as co-pilot over all the various routes in the district, plus five take-offs and landings on each airstrip, before being checked out on it.

Pat had to learn that pilots in New Guinea always fly by sight, never by instruments. They never fly through a cloud but always around it, as these banks of clouds often hide 9,000-foot peaks. Soon she came to know by the cloud formations just where the mountains and valleys were.

High Adventure

Her first adventure was when the Norseman in which she was co-pilot "ran out of noise" and they had to make a forced landing on an open patch of kunai grass four feet high about 10 minutes flying

time out of Wewak. No damage was done but it took nine hours for the two of them to walk back through the jungle, up and down the mountains and through crocodile-infested creeks. Pat treated it as an exciting experience and went to a dance at the club the next evening!

Pat had her second adventure some months ago, alone. She took off early one morning in an Auster with a cargo of trade goods for a mission station an hour's flight away. Twenty minutes later the weather changed so rapidly that she was lost in great masses of cumulus clouds in a matter of minutes.

She flew blind until she was nearly out of petrol and then nosed down through a hole in the clouds and made a skillful landing on a dry river bed. She stepped out of the plane unhurt, the Auster being slightly damaged, spread a piece of canvas on the river bank, and spelled out the word Food on it with dark stones. Then she sat down to wait surrounded by hordes of mosquitoes.

Next afternoon about 100 naked natives with bows and arrows came racing down the river bank toward her. It was a relief when she saw they were all grinning broadly, for she knew then that she had not landed among head hunters!

None of the natives spoke even pidgin-English, but their leaders shook hands with her and after examining the aircraft they vanished as quickly as they had come. The next day a plane dropped food to her, but it was three days before a patrol officer arrived. Then she was carried out by four hefty "kanakas" in a folding canvas chair strapped to two bamboo poles.

Home Base

After she had been in New Guinea for a year, Pat married the company's Wewak manager, ex-paratrooper Colin Toole. She and her husband have built an attractive "pungle"—which is a native-style house made of split bamboo woven into sheets, which make a much cooler house than one built of European materials. Their garden is gay with hibiscus trees, coconut palms, paw-paw, pineapples, and peanuts.

Pat has little time for house-hold chores. Ugalo, the houseboy, does the cooking and Bogart is the wash and iron boy. The weather is warm all the year round and Pat keeps cool in white drill shorts and shirt, with a pilot's shoulder insignia.

Her day begins at the first light, around 5 a.m. By 6:00 she and her husband have breakfasted and are on their way by jeep to the airfield. She flies an average of eight hours a day, including Saturday and Sunday (with an occasional Sunday off) and doesn't get home again until dinnertime. There is no night flying.

Pat and Colin find New Guinea a fascinating country in which to live, and have recently bought 500 acres (at 9d. an acre) of land in the Highlands where they intend building a week-end house.

* * *

SOME MEN SPEND half a day looking for the shortest way to do a piece of work that could be done in an hour.

* * *

KNOWLEDGE is of two kinds. We know a subject ourselves, or we know where we can find information upon it.—*Dr. Johnson.*

The 1954 Ragosine-Auster Homing Trophy Competition

A TOTAL OF 35 AUSTERS took off from Rearsby at five minute intervals on May 29th to try to complete the course that once again had been cleverly devised by Fred Watkin, Auster's chief technician. Problems he set the competitors to test their skill at navigation and observation loomed up both fast and furious around the course. No sooner was an aircraft airborne than its harassed occupants were engaged in their first tasks,—sorting out their maps, photographs, envelopes and instructions, at the same time counting the number of single and double track railways between Rearsby and the first turning point near Elmdon airport. Together with special features on each leg, competitors were also expected to identify and name a number of ancient buildings, photographs of which had already been given to the pilot during his half-an-hour briefing period. Unobstrusively inserted in the sheet of photographs was one of part of Windsor Castle which a number of pilots swore they had flown over, until told its name and that it was at least 90 miles from the course they should have been flying! After turning at the Elmdon point competitors should then have been heading towards a spot two miles due east of Warwick aerodrome. During the next leg to Foxton competitors were taxed with the job of finding railway stations having level crossings beside them. To make it more difficult, a portion of this route had been blanked off with a piece of white paper on the map; a number of aircraft are known to have flown "blind" over this area whilst both pilot and passenger strained their eyes holding the map up to the windscreen, and trying to peer through the piece of paper at the hidden portion of the map!. At the Foxton turning point a number 2 was displayed on the ground indicating to the stream of Austers that an envelope given to them at the briefing marked with a similar number should now be opened. The instructions in this envelope began "THE SHOCK," and a shock they were, cancelling the previously worked out further turning points and substituting new ones, causing havoc and panic in many cabins. After following the new instructions and returning to Foxton to count the number of locks on the local canal, competitors had to return to Rearsby via Launde Abbey. The variety of landing techniques was to say the least interesting, all of these were aimed at a white marker, the further away from which a landing was made lost marks to a total of five.

This was not the end of the competition however, for as the aircraft were taxied to dispersal they were intercepted by squads of marshalls who asked the occupants three final questions and then collected all the maps, papers and unopened envelopes from every aircraft, these were whisked away to the Chief Technician's office and the slide rules began to work.

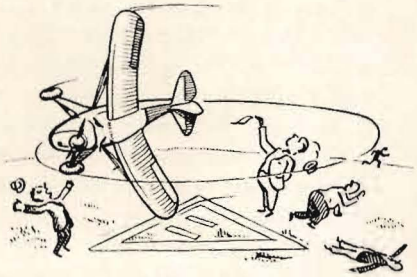
Altogether the complete course should have taken about 1 hour 10 minutes to complete, but "certain difficulties" caused four aircraft to

AN ODE TO THE WRAGGOZINE

Hear ye the story of Claudius Prene
Who entered for the Wraggozine,
He came to Rearsby all a fuss
A-flying of his autobus.

The briefing man was not quite right
To try and give poor Claudius fright,
He said to him "You havn't heard!
You need to be a homing bird."

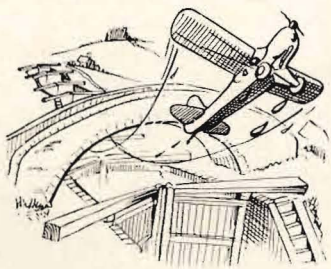
But Claudius stood the opposition
And taxied straight into position,
Then one green flash from Rearsby Tower,
And off he roared with mighty power.



Then to the second leg, then third,
To plot the stations was absurd;
"Oh bother we are just too late,
They've gone and shut the crossing gate."

T'was difficult to count the locks on
That steep hill that leads to Foxton,
So swooping down with perfect ease,
Under the footbridge he did squeeze.

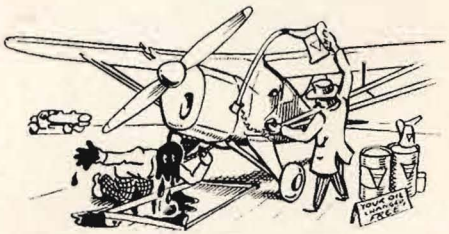
Alas poor Claudius after this,
Did find his compass course amiss,
But finally, still plodding on
He ended up at Poddington.



And then with loud voice he did bellow
Across the drome, "I say old fellow,
This Ragosine is thrilling sport.
The Prize is mine without a thought."

Such is the tale of one named Prene
Who thought he'd won the Wraggozine,
So if you too would cause a fuss
Just learn to fly like Claudius.

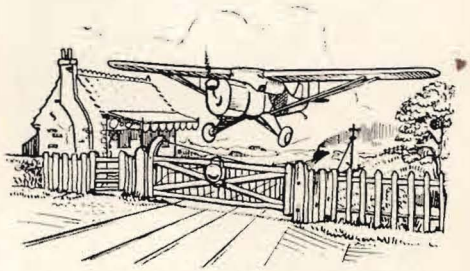
J.M. H.T.H.



Whilst on the first leg he felt fine
Just running up the railway line,
Alas! though he was full of zest
He clean forgot to count the rest.

Past churches, priories, castles too,
In dull summise our Claudius flew
Whilst saying, "Things seem slightly screwey
This photograph is naught but hooey."

The first turn judge was Mr. Amen.
As white as death like Tutankamen,
Watching Claudius scream around
Just five feet six above the ground.



The aerodrome officials there,
Where quite polite and told him where
To point his autobus if he
Did want to get to Rearsby.

So after very much concern
Our Claudius did make his return,
But much to general consternation
Was beating up the population.

Just after this tremendous feat
He made a landing, really neat.
And ending up through clubhouse doors
He clambered out upon all fours.

Mr. N. A. L. Thorne winner of the Ragosine Auster Trophy. Leicester Evening Mail Photo.

remain airborne for 2 hours, the "endurance" record was 2 hours 30 mins, part of this time however was spent on the ground asking the way back to Rearsby. However, everyone appeared to have enjoyed the event and many vowed to compete again next year and find *all* the turning points.

The Prize Winners

Loosing only 27 points the winners of the Ragosine- Auster Trophy were Mr. N. A. L. Thorne (pilot) and Mr. L. True of the Leicester Aero Club. In addition to receiving the magnificent Ragosine-Auster Silver Cup, they were also presented with a Silver replica, and cash prizes, £20 for Mr. Thorne and £10 for Mr. True. The Cirrus Trophy and replica were also theirs, for their trusty mount was a Cirrus-engined Autocrat.

Two sets of competitors tied next with 33 points each and in this case the second prize, a silver cigarette box and £7 10 0. cash was awarded to Mr. A. H. Jelly because of his fewer flying hours. Third place was then credited to Mr. E. A. Cowan pilot of a twosome who have gained both 1st and 2nd placed in previous Ragosine trophy competitions. Mr. Cowan had changed places with Mr. G. A. Farley who usually pilots this winning team. Mr. E. A. Cowan received a car heater and £7 10 0 cash. Other class prize winners included T. F. Ringer, for best timekeeping, an aircraft clock, J. D. H. Radford for best observations, an Apollo Trout rod, Miss Z. Paddon his passenger won the ladies prize, a well equipped picnic hamper and also a year's subscriptions to "Flight" for best passenger observations. G. E. Jervis of the College of Aeronautics won a tankard for completing the course properly and having the least number of flying hours to his log. D. L. Pratt received a surprise prize for putting up the best performance in the Ragosine competition as a first entrant. W. Ringer earned a copy of the "Aeroplane Directory" as passenger to the best timekeeper. Consolation prizes were presented to every pilot and passenger competing, each of the former received an Auster tie, the latter a propelling pencil.

* * *

MEN ARE NEVER SO good or so bad as their opinions.—*Mackintosh.*

* * *

WHERE IS THE MAN who has so much as to be out of danger.—*Huxley.*

* * *

PUNCTUALITY is wasting one's time waiting for other people.

A New Auster Type

The MK9 Air Observation Post

Austers have built all the Air Observation Post aircraft used by the British Army since 1940. *The experience gained from thousands of battle proven aircraft during this time has been built into Austers latest Air Observation Post the Mk.* 9.

Designed to exacting Army requirements for ruggedness and spectacular performance, the Mk. 9 *is a completely new aircraft, not a development of existing civil types.*

Introduction

Primarily it is a two seat A.O.P., but its big roomy cabin well suits it to many other tasks. Casualty evacuation, light liaison, supplies and mail dropping, cable laying, aerial photography and light freighting, all come easily to the Mk. 9 which can be operated from the smallest field or clearing. This is achieved by employing greater wing area, more power and large, highly effective flaps with drooping ailerons. A lighter airframe also makes for higher performance.

From the initial design period Auster technicians have worked closely with key army experts making sure that the Mk. 9 is the finest possible Air Observation Post. Reliability is assured through scientifically controlled strength tests carried out during two years on nearly every component in the aircraft.

Brief Specification

The Mk. 9 is a high wing, strut braced, cabin monoplane, having a fixed liquid-spring undercarriage and a cantilever all-metal tail unit. Power is supplied by a 180 h.p. Bombardier direct fuel injection

This view clearly shows the difference between the new Mk. 9 *and previous military Austers, namely, the single lift strut, a cleaner wing with split flaps, bigger tyres and cantilever tail surfaces.*

engine driving a 7 ft. 0 in. diameter Fairey fixed pitch metal propeller.

Fuselage and Accommodation.

Immense strength is built into the fuselage of the Mk. 9. British Army insistence upon the well-proven welded steel structure underlines the success this type of construction has enjoyed whilst used under all climatic and operational conditions. Easy repair is assured by the use of a fabric covering, and careful positioning of hinged access panels greatly reduces maintenance costs and time. A unique feature of the cockpit is the rear floor, this is designed to allow a complete change of role to be effected in a few minutes. The removal of six bolts allows the floor to be lowered out of the aircraft and a new floor complete with equipment relating to another duty can be quickly substituted.

The normal A.O.P. crew consists of two members, pilot and observer. The observer's seat is in the rear of the cabin and faces forwards or aft as required. Quickly detachable armour plate is provided for the pilot's position. Provision is made for a third seat to be installed beside the pilot's. Both of these are adjustable for height and leg length and, in common with the observer's seat, are suitable for back-type parachutes. All seats can be easily removed, instantly providing ample floor space for supplies stowage etc.

Entry to the cabin, even in arctic clothing, is a simple matter—three wide doors are fitted. The forward doors are held fully open by automatic catches, the pilot's door has a handy map pocket.

Cabin temperature can be controlled by finger-tip actuation of a selector. Adequate windscreen demisting is also provided. Cool air circulation comes from air scoops carefully positioned around the cabin to avoid undesirable draughts.

Visibility

This important point has been given particular attention and, as may be seen in the illustrations, is exceptionally good for both pilot and observer. Good vision forwards and inwards during turns ensures safety during low flights. For direct vision in bad weather large hinged panels are fitted in the forward doors.

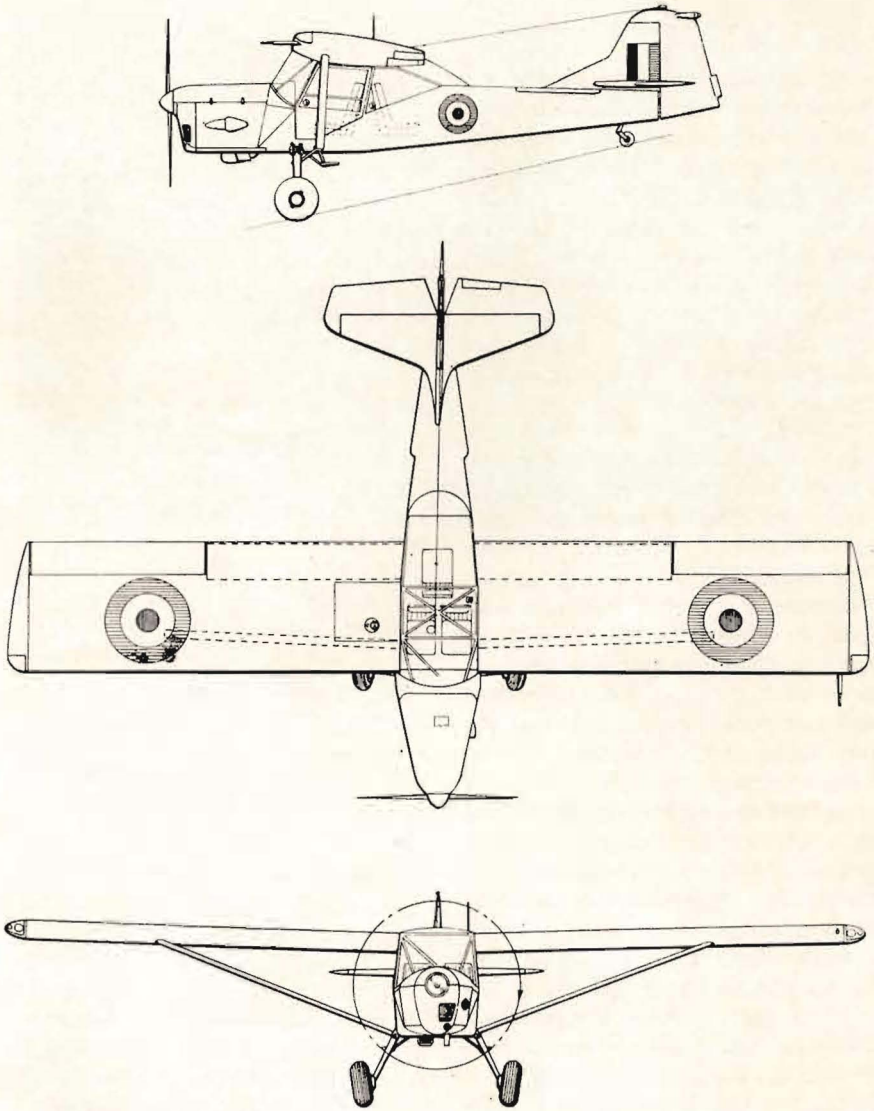
Cockpit Equipment and Controls

The instrument panel is neatly divided into two parts. The port half contains a flexible mounted panel including an artificial horizon and a direction indicator. Maintenance is simple—the whole panel hinges downwards giving full access to the rear of the instruments. The starboard half of the panel is provided with a recess to house an Army type 62 radio. Electrical switches are systematically grouped along the top of the panel where they fall easily to hand. Illumination of the radio, instrument panel, and compass, is variable by a pilot-operated rheostat.

Engine and ancillary controls have been grouped carefully to avoid confusion in the stress of battle or in darkness.

The flying controls consist of a stick type control column, and rudder pedals, the latter incorporating powerful toe-operated hydraulic brakes. For instructional purposes flying controls and brakes can be quickly duplicated.

A "mixing box" is provided,



AUSTER A.O.P MK.9.

giving intercommunication through both the M.F. and V.H.F. radios the latter of which is mounted in the rear of the cabin together with a 24 volt accumulator.

Wings and Tail Unit

Apart from plastic tips, and a fabric covering aft of the main spar, the wings are of all metal construction. They are built round a rugged leading edge torsion box and are braced to the fuselage by a single metal streamlined strut. The torsion box consists of a metal spar to which are riveted pressed alloy nose-ribs. The tubular leading edge is highly resistant to light collision damage by birds etc.

Effortless operation of the very large split flaps is assured by the introduction of a hydraulic assister. The flaps can be operated easily from either front seat position, and retract automatically in the air at the touch of a switch. Retraction rate is regulated and no "sink" results. Extra lift for short take-offs and landings, and high drag for slow steep approaches, comes from the fitting of drooping ailerons. These, after take-off flap (22 deg.) is selected droop 10 deg. giving full span lift increase. Aileron structure is similar to that of the wing—a metal torsion box and ribs with a fabric covering.

Each wing tip is a single reinforced plastic fairing, the front end of which is transparent and houses a landing light (one in each tip). An electrically heated pitot head is installed. This is a fully retractable unit designed to minimise the risk, of damage during ground handling and parking. If the aircraft is accidentally flown with the pitot head retracted, the result is a "low" reading—on the safe side.

Tail Unit

Usually the most vulnerable item during ground handling, the tail unit is of tough all metal cantilever construction except for the tips of the rudder and elevators which are reinforced plastic mouldings. Bonded metal construction is used to facilitate quick repair or replacement in "front-line" conditions. Both the horn balanced elevators and rudder can be easily removed for inspection without upsetting the control circuits.

Undercarriage

Rough fields, rutted cart tracks, or sodden jungle strips, can all be used as landing areas by the Mk. 9. The undercarriage is the outcome of two years of harsh tests on mud, concrete, grass and rock. Each leg is a solid forging, and utilises for shock absorption a liquid spring capable of withstanding a descent of 9 ft./sec. The liquid springs together with large diameter (1 ft. 9 in.) low pressure tyres virtually eliminate rebound and permit full use of brakes early in the landing run. Exceptional floatation on sodden surfaces is assured by the big tyres. The pneumatic tyred tail wheel is also equipped with a liquid spring and is fully castoring, although equipped with steering linkage.

Engine and Fuel System

The 180 h.p. 4-cylinder Bombardier is air cooled and drives a high efficiency fixed pitch metal propeller. Economy is remarkable, cruising consumption being as low as 8 gallons per hour. This engine uses direct fuel injection, giving instantaneous

A new feature of the Mk. 9 is the sturdy liquid-sprung undercarriage. Low pressure tyres of 1 ft. 9 in. dia. are fitted together with Goodyear single disc type brakes.

throttle response in all conditions. This is vital to safety in A.O.P. operations. A cartridges starter is fitted, six cartridges being contained in the breech which can be removed and reloaded in a few moments. Stowage pockets for six spare cartridges are fitted in the rear of the cockpit.

A 15 Imp. gallon self sealing fuel tank is carried in the starboard wing root, the filler cap for which is above the wing and easily reached for re-fuelling by the use of the step provided. A second tank may be installed in the opposite wing. The fuel gauge is clearly readable by day or night.

All climatic extremes are catered for by a controllable air intake giving "hot," "cold" and "filtered" air and by oil dilution for cold starting down to minus 40 deg. C. An engine driven generator supplies 24 volt, 500 watt D.C. power. Engine servicing time is greatly reduced by the position of quick release cowls. When these are detached maintenance is far easier than that of a modern automobile.

Handling

Handling characteristics are crisp and completely "normal" despite the aircraft's comparatively large wing area and light loading. The ailerons in particular are very responsive and represent a great advance over other comparable machines.

Taxying and take-off are extremely simple, there being little or no tendency to swing, and directional control being more than ample to cope with quite severe cross-wind conditions without recourse to

the excellent independently toe-operated hydraulic brakes.

Large variations of throttle setting (*e.g.* as between climb and glide) produce negligible changes in longitudinal and directional trim, while the very powerful flaps can be lowered and raised during a "hands-off" glide without affecting the fore-and-aft trim.

All controls are well harmonised in the air, and accurate steep turns can be made without effort. The stall is quite normal, and the aircraft can be spun in either direction if required, although gross mishandling would be required to achieve an accidental spin. Recovery from spins is crisp and quick by normal techniques.

Forward view during approaches to land is excellent and approaches can be made very steeply. The glide angle can be simply and conveniently varied by manipulation of the finger light hydraulic flap selector and the well geared flap pump control. The aircraft landing characteristics are ideal for confined area touch-downs, the self-damped liquid sprung undercarriage absorbs quite heavy landings without rebound.

Estimated Performance Figures at 2,100 lbs., (950 kgs.)

This figure equals normal operational load including Pilot, observer, two radios and full fuel load etc.

Maximum Level Speed	127 m.p.h. (204 km./hr.)
Maximum Cruising Speed	110 m.p.h. (178 km./hr.)
Initial Rate of Climb	920 ft. per min. (280 mtrs./min.)
Absolute Ceiling	18,500 ft. (5,650 mtrs.)
Range, at Economic Cruising Speed	242 st. miles (400 kms.)

Take-off Run to Unstick in 6 m.p.h. wind (9.3 km./hr wind)	108 yds. (99 mtrs.)
Landing Run in 6 m.p.h. wind (9.3 km./hr. wind)	60 yds. (55 mtrs.)
Total Take-off Distance to clear 50 ft. in 6 m.p.h. wind (9.3 km./hr. wind)	210 yds. (192 mtrs.)
Total Landing Distance from 50 ft. to Stop in 6 m.p.h. wind (9.3 km./hr.wind)	150 yds. (137 mtrs.)

Dimensions

Span	36′ 5″ (11.10 m.)
Length	23′ 8½″ (7.22 m.)
Height (tail on ground)	8′ 11″ (2.72 m.)
Wing area	197.6 sq. ft. (18.35 sq. m.)
Wing chord	5′ 6″ (1.67 m.)

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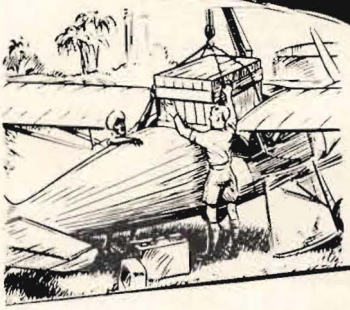
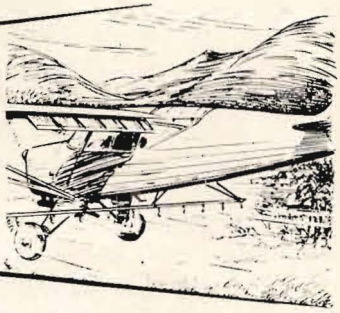


FREIGHTING

A load of 650 lbs. (295 kg.) can be carried over a distance of 485 miles (780.5 Km.). **LOADING** is simple with the removable top canopy.



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Auster Aircraft Ltd. Rearsby, Leicester

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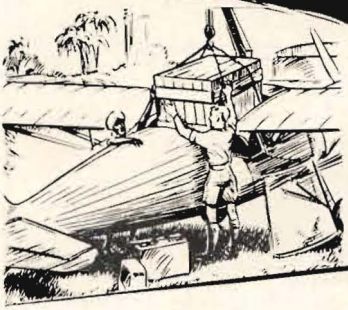

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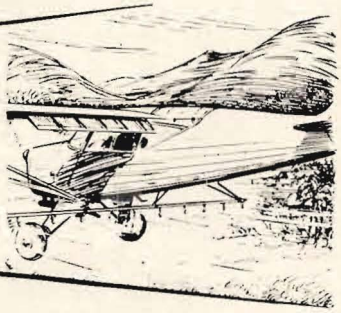

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For Your Protection

We, as you know, fit the special A.R.B. approved Aero Models of the Antifyre Pistole in all the civil aircraft leaving our factory. They are installed to deal instantaneously with emergencies in the air and on the ground. This extinguisher is designed to put out fires before they can get a hold, particularly those involving petrol, de-icing fluid, cables and radio equipment. Speed is vital in fire fighting and this lightweight appliance is without doubt the most suitable for your protection.

The Antifyre Pistole is in use in practically every corner of the world and is installed in Buckingham Palace, the Bank of England and NATO Headquarters in Paris. Although fire loss figures are still on the increase and more than 25 million pounds worth of damage was done in 1953, hundreds of fires a year are being snuffed out by this extinguisher. It is playing a vital part in the protection of industry, hospitals, shipping and the motor trade, etc. It is also the only extinguisher really suitable for use in the home. No toxic fumes are given off whatsoever and it is the type of extinguisher that can be used very effectively by our wives, and if necessary, children. Its method of operation is very simple and the dry powder that it uses is completely harmless to upholstery, radio and television equipment and even food.

Recent reports include an incident where a petrol station caught alight owing to careless welding, an explosion shattered the manhole covers over the tanks and yet the premises were saved by prompt use of an Antifyre Pistole Unit which had been installed for many years without attention. Only last year there was a serious fire aboard a liner at sea which could easily have developed into the disastrous proportions of the "Empire Windrush". A large tank of paraffin burst and the fire was spreading rapidly and a variety of extinguishers were having very little effect on it. The Antifyre Pistoles were rushed to the scene of the trouble and the blaze was put out in a matter of seconds.

Most of us have experienced fire equipment of one sort or another in the Services, usually those using Foam, Carbon Tetrachloride or Soda Acid. This little extinguisher however is something unique and considerably more versatile in both design and performance.

We continue to provide you with the most up - to - date equipment available and news has come through within the last few days that the Ministry of Civil Aviation has decided to instal similar units on every one of their aircraft.

WE HEAR

that when the Duke of Edinburgh visited the rocket-range at Woomera, he inspected a land yacht and suggested to the builders of it that they use an Auster wing instead of a sail.

* * *

. . . . that four Autocar Sprayers operated by Pest Control of Bourn, Cambridge, have done 800 hours of anti-locust spraying in five weeks.

AUSTER SERVICE BULLETIN

Auster Aircraft Limited
Rearsby, Leicester, England

Issue No. 34

Tail-Plane Bracing-Wire Attachment Lugs.

There has recently been a failure of one of the old "P"-clip-type tail-plane bracing-wire attachment lugs on an early mark of civil Auster. Anyone having this type of attachment strap fitted and wishing to change to the current type can do so by fitting Mod. 1934, which is a strap folded up from a single strip of 12-gauge material. This modification can be obtained from the Service Department, Auster Aircraft Limited.

Rudder Stops—all Auster Types.

One case has occured of a pilot having to land due to insufficient rudder control. It was found that this resulted from the rudder fabric being torn by the elevator, probably before take-off. The rudder stops on the aircraft were badly distorted thus permitting the rudder operating lever to over-ride the stops and give rise to the foul which caused the fabric to tear. It would appear that the distortion of the rudder stop in this case was due to the application of excessive rudder pedal loads during taxying.

The trouble is not expected to occur again, but in order to avoid a similar occurence it is desirable that operators carry out a daily inspection of the rudder stop to ensure that with the elevator in its neutral or raised position, it cannot foul the rudder in its extreme position.

LEARNING TO FLY—*Continued from page 7*

identical down to the last microscopic detail.

It is, of course, very important for a pupil to know just what causes an aircraft to stall so that prevention can be better than cure. It is even more important for him, however, to know how to recover from a stall. My own efforts in this direction leave much to be desired to date, I am afraid. But at least I do know exactly where I am going wrong. I am too ham-fisted both with stick and throttle. Had I in my first attempts been allowed to continue with my own brand of recovery action, we would have finished up doing inverted loops. In most cases I found myself heading for Mother Earth in an almost vertical dive. This was because I was pushing the stick too far forward in my effort to regain flying speed. At the same time I was pushing the throttle open too quickly.

I think I must award myself a hundred lines and write out each time: 'When recovering from a stall, remember that "Gently Bentley" does the trick and don't use the stick in "pump-handle fashion." When I realised that I had pushed the stick too far forward, I was abruptly pulling it back without paying any attention to the aircraft's altitude. This forward and backward race soon developed into the 'pump-handle' movement in my efforts to right two continually recurring wrongs. As a result the aircraft was travelling through the air like a porpoise through the sea.

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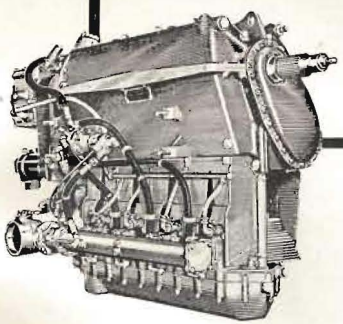

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Printed in Great Britain by W. Pickering & Sons Ltd., Hinckley, Leics.