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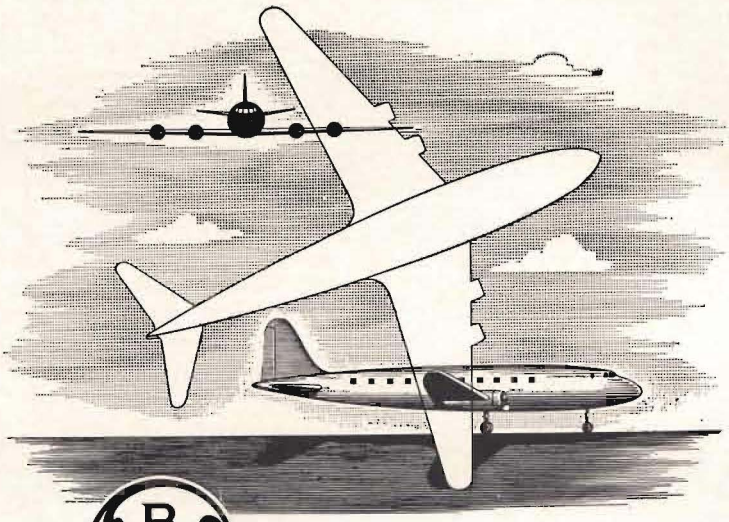

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Editorial

THE EASE WITH WHICH some people learn to fly is really remarkable, we have nearly all heard of someone who went solo after a nominal number of hours and then continued to make excellent flying progress. The lowest record we have heard of is one by two members of the Cheltenham Aero Club who "soloed" after 1 hour 10 minutes each, in a Taylorcraft Model D, both pupils had flown gliders before, but, nevertheless, it was quite a commendable performance. Needless to say, the actual time taken to solo, be it long or short, is of little importance compared with whether or not the flight was carried out safely. An interesting point about solo flights is that even with the great strides made in aviation since the very early days, people do not go solo any quicker now than they did forty years ago. The answer to this most probably is that the standard at which a pupil is allowed to fly alone is higher than it used to be, and also he knows considerably more regarding his aircraft and the elements.

Ages, too, at which potential pilots take up flying have sometimes caused raised eyebrows, but with the reliability and simplicity of the modern light aircraft an upper age limit is not so important. We have recently heard of an English businessman who was of the opinion that he could save a considerable amount of time by using an Auster for his long-distance business trips. Although he had had no previous experience with aircraft, he proceeded to learn to fly throughout a dark and unfriendly British winter; his age was 45 when he started his instruction. We are not suggesting that this is a record by any means, but we should be interested to hear from any reader who started flying after he had reached forty-five.

Front Cover

TAKEN RECENTLY during a test flight, this photograph shows two Auster Autocars (Cirrus Major III engines). Both aircraft will eventually be fitted with floats and operate in Scandinavia. The nearest Autocar is to be used by A.B. Stockholms Aero of Sweden for aerial photography and general charter work. The colour scheme of this aircraft was particularly striking, the main colour being chrome yellow, with the company's name, undercarriage legs and other flashings in carnation red.

The other Autocar was purchased by A/S Norronafly of Oslo, Norway; this too will be used for private charter flying.

The Canadian Army Steps-up Flying Operations

THE CANADIAN ARMY, long content merely to dabble in the use of aircraft, last year took a determined step towards the establishment of a full-fledged light aircraft component to carry out artillery spotting, liaison, and general reconnaissance duties.

Early in the spring of last year it was announced that the 1st Air Observation Post Flight had taken over the historic, though undeveloped, airfield at Camp Petawawa, just north of Ottawa. Late in July, the Flight got into business when it received four Auster 6 spotter aircraft from the R.C.A.F. The Flight is technically an R.C.A.F. unit, though it is under the operational control of the Army. In this respect, No. 1 A.O.P. Flight is attached to R.C.A.F. Station Rockcliffe insofar as flying discipline is concerned. The aircraft, as well as being owned by the Air Force, are also maintained by it and normally there is a ground crew component of 13 airmen permanently connected with the Flight.

All flying is, of course, done by Army pilots.

Lest any confusion arise, this new unit is the first operational A.O.P. Flight to be established by the Army. Actually, there has for some time been an A.O.P. Flight in existence at Camp Shilo, Manitoba, the Army's big artillery training base. This Flight, however, is an integral part of the Light Aircraft School based at the Canadian Joint Air Training Centre at Rivers, Manitoba, and as such is a training formation rather than an operational unit.

No. 1 A.O.P. Flight is commanded by Major David W. Francis, who took up this post in mid-April, 1953.

Above are Canadian Army pilots of the 1st Air Observation Post Flight. Left to right are: Major Dave Francis (C/O), Lt. Gerry Mc Donald, 2/Lt. Lloyd Mc Morran, and Lt. Bill Rendell

A Canadian Auster Mk. 6 and its team-mate, the 25-pounder Field Artillery gun.

Major Francis graduated from the Royal Military College in 1941 and served with the Royal Canadian Artillery in the U.K., Italy, and Northwest Europe during 1942-45. After serving a year with the occupation forces he returned to Canada. From 1949 to 1951 he was stationed at the Joint Air Training Centre and the Royal Canadian School of Artillery. It was at this time he became a qualified A.O.P. pilot.

At present, Major Francis has just four aircraft at his disposal, but plans call for an Auster 7 to be added to the flying equipment. The Auster 7, a training version of the 6, has side-by-side seating and dual controls. It will be used for giving periodical checks to Army pilots attached to the Flight, as well as additional flying and instrument training.

So far, the Army has something less than 20 qualified A.O.P. pilots, only four of whom are attached to No. 1. Though some Army pilots have past flying experience when they go into A.O.P. work (several are ex-R.C.A.F. types), the majority have been trained from scratch. All A.O.P. officers are trained artillerymen.

Normally, the training procedure is to post the trainee Army pilots to the Brandon Flying Club, where civilian instructors train them in Tiger Moths to Private pilot standards. The embryo A.O.P. pilots then move to the Light Aircraft School at Rivers for three months where they are brought up to Army light aircraft wings standard on Austers. Some instrument training is given, though not up to the standard where the pilot is qualified to hold an instrument rating of any sort.

Four Flights; The C.J.A.T.C. Light Aircraft School, besides the A.O.P. Flight at Camp Shilo, also comprises three other flights—Liaison Flight, Helicopter Flight, and Advanced Fly-

ing Training Flight. The latter is the unit to which the student pilots are posted following completion of the course at the Brandon Flying Club.

The Liaison Flight trains regimental officers for liaison work with their particular corps. The Helicopter Flight trains pilots in the special roles helicopters may perform.

While the Army makes occasional use of helicopters, especially on survey work, it does not actually own any of these rotating wing aircraft itself.

So far as is known, the Army does not have any trained helicopter pilots. It either charters civil machines with a commercial pilot, or it makes use of R.C.A.F. helicopters flown by Air Force pilots.

Refresher; In order that Army pilots may keep their flying techniques up to standard, even though they aren't in posts where any flying is involved, the Army has a plan whereby Active Force officers who are qualified Army light aircraft pilots may put in as much as four hours a month. To be eligible for this refresher flying training, Army pilots must be qualified A.O.P. or liaison pilots under Army standards. Rank and seniority must allow them to do flying duties in event of mobilization. Training is done at any one of the member clubs of the R.C.F.C.A. at the expense of the Army, though on the officers' own time.

The 1954 Ragosine–Auster Trophy Competition

THE LAST SATURDAY IN MAY has now become the traditional date for that unique flying event—the annual competition for the Ragosine—Auster Homing Trophy, and May 29th will see the usual gathering of flying types at Rearsby, ready for a day's pleasure and a chance of a prize at the end of it.

The competition, the seventh in the series, will be run by the Auster Flying Club on the same general lines as before, being an exercise in navigation and observation, round a course of 100-120 miles, starting and finishing at Rearsby.

The event is not a race, and no special competitor's licence is necessary. Aircraft take off at intervals to navigate the course, and no low-level flying or "flat-out" speeds are called for. The aim is to encourage ordinary safe cross-country flying. A passenger may be carried if desired.

The main prize is the Ragosine-Auster Homing Trophy—a magnificent Silver Bowl—and the silver replica which the winner retains. The Trophy itself is held for one year.

The Cirrus Trophy is won by the best performance in a Cirrus-engined Auster, and other prizes are available.

Many other prizes are being provided by friends in the aviation industry, but the full list is not yet available.

The Auster Flying Club invite all pilots of Austers to take part in this competition. There is, of course, no entry fee. Entry forms may be obtained from the Competition Secretary, Auster Flying Club Ltd., Rearsby Aerodrome, Rearsby Leicestershire, and should be returned completed as soon as possible, as it may be necessary to limit the numbers of entrants.

A familiar sight to all pilots, the aircraft servicing vehicles of the Shell and BP Aviation Service are on duty all the year round at the major airfields in Britain.

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Learning to Fly *by* "STUDENT PILOT"

THE FIRST TWO PERIODS of instruction which I had booked had to be cancelled because of unsuitable weather conditions. Although I was naturally disappointed at the delay, I was not in any way inconvenienced because I took the precaution of ringing up the Club before going down to Croydon. Although on both occasions flying was going on, the weather was only suitable for advanced training. Absolute beginners like myself need conditions which will enable them to devote all their attention to what their instructor is saying and to the way in which their aircraft reacts to movements of the controls. They cannot at the same time attempt to cope with rain, low cloud or gusty wind conditions such as more experienced aviators take in their stride.

But everything comes to him who waits and decent weather eventually came to me. I now have ninety minutes instruction behind me. And what is more important the knowledge learned in those minutes is in my head. It is also written down in my note-book. I made notes whenever I could and as soon as possible after each period of instruction, and I am finding those notes invaluable as an aid to memory.

My instruction began with a familiarisation period during which I was shown and became acquainted in detail with both the exterior and interior of the type of aircraft on which I am going to begin my training. This familiarisation period occupied sixty minutes, and it was followed by thirty minutes in the air.

My flying education really began, however, before I ever went out to get acquainted with the aircraft. I had arrived at the Club some thirty minutes before the time of my booking and spent this time in the comfortable lounge. There I was able to browse through many of the books, leaflets and manuals of instruction, all clearly marked 'Not to be Taken Away.' I was also able to talk to other members who were in various stages of their training. None were beginners like myself but I found them without exception both friendly and helpful and feel that this club atmosphere is most useful to the newcomer. There was no question of my feeling like a new boy and forced to stand aloof from what was going on. I learnt that flyers in all stages of their training are always asking questions and seeking to improve their knowledge. Even the instructors never stop comparing experiences and exchanging notes. In the easy and informal atmosphere of the Club lounge a question or a query once asked becomes everybody's problem. One can either express one's own opinion or listen to what other people have to say. Naturally, I listened.

I found the language of the air a little difficult to understand at first. One member was talking about doing Spins, Turns, Short-Landings and Glides. Another chipped in from the corner of the lounge to add that he might as well throw in a few pirouettes and a *pas de deux*. I wondered for a moment whether I was in a flying club or a school of the ballet.

The "new boy" carries out his first pre-flight check.

To become familiar with an aircraft—which in my case is an Auster Aiglet—one starts at the tail end. The new boy is then taken slowly and very methodically right round the aircraft. I don't mind admitting that after the first fifteen minutes, I was overcome by a deep sense of humility and shame. I have been personally involved in both private and airline flying for well over twenty years and must have walked round or had close-up looks at hundreds of aircraft. And yet I found that I had an almost complete ignorance of the various parts and control surfaces of the aeroplane and the functions which they perform. I was only comforted in my shame by thinking of the thousands of motorists who are in the same position as far as their cars are concerned.

I appreciated the Instructor's advice when he said: 'I don't expect you to take in all the details of what I am telling you now. I just want you to get a general idea at this stage and to get the layout of things.' This familiarisation process is not only an elementary lesson in the how and why of aircraft flight. It also constitutes a pilot's external pre-flight check.

As far as I can recollect this check is carried out in the following manner. Remember that I am taking my Instructor's advice and only giving a very general impression and cannot claim to have put things down in any correct order. One must first see that all the fuselage fabric is taut. Any tell-tale wrinkles may mean split or broken metal or wooden parts underneath. All moveable parts such as elevators, ailerons and rudder

should be tested for free and unobstructed movement. Wing stays are given a gentle bang to make sure that they are firmly in position and quite sound. If you hear any rattle of metal something is wrong and you shout for the rigger.

The petrol tank filler cap which is on top of the mainplane is examined in order to see that it is securely screwed home. You can't just pop in to the nearest garage for a replacement once you are airborne. Tyres are inspected for position on the hubs and also to confirm that the treads are free from nails or abnormal wear. The spring of the tail-wheel is examined to make sure that it has a healthy arch. The intake ends of the A.S.I. and altimeter tubes have a covering over them when the aircraft is on the ground to prevent dust or other matter from fouling the tubes. This covering must obviously be removed before take-off.

One has to examine the exhaust box underneath the engine to make certain that it is securely attached. When I did this, it seemed so loose that I thought the whole thing was coming away in my hand. But I was told this is quite normal. When the engine is running, the box gets hot and the metal expands so that the slack which is so obvious on the ground soon gets taken up. There are also some small nuts and bolts to inspect. One looks at some of them to confirm that the split-pins are in position and at others just to make sure that they are greased and healthy. I am quite an expert now at recognising a healthy nut from one which is sick and ailing. Other things which have to be inspected are: undercarriage stays and attachments; the perspex of the roof; the position of the rubber strips overlapping the mainplane where it joins the fuselage; the intake end of the gyro instruments. It seems that certain birds have a definite preference for nesting in the last-mentioned apertures.

The thing which struck me most during my first lesson was the discovery that instructing is an art which has its own polished technique. Up to that time I had always assumed that an Instructor was someone who merely happened to be a very good pilot—so good in fact that others could profit by copying his methods. This is of course right up to a point. But it is now obvious to me that there is much more to being a good Instructor than being a good pilot. An Instructor must be able to express himself clearly and fluently and he must be a good psychologist and judge of character so that he can adapt his methods to enable each individual pupil to gain the maximum benefit from his instruction. There has also got to be a club spirit between all Instructors and all pupils so that any Instructor can deal with any pupil at any state of the latter's training. With the Club's present very heavy programme, it is doubtful whether a particular Instructor can definitely be assigned to any one pupil from the start to finish of his training. I myself have already received instruction from two different Instructors in only two lessons. I am quite certain that they have both weighed me up—indeed I feel sure that I saw them having a chat about me in the corner of the lounge. Personal progress re-

Just a matter of safety harness tightness.

ports of each pupil are kept right through the course of his training and these help to make it possible for one instructor to take over a pupil from another. The standardised methods and sequence of instruction also help in this respect.

My first thirty minutes in the air were devoted to 'air experience.' I first of all reported with my Instructor to the M.C.A. briefing room just below the Club's accommodation. There one has to report full details of one's intended flight and obtain authorisation for it from flying control. At the same time they tell you whether there any restrictions on flying. I must say that I felt rather like a teen-age girl being let out for her first date, although I am sure that no modern lass would settle for 'thirty minutes local.'

Before becoming airborne and gaining 'air experience,' I first of all had to get inside my Auster—and unless you want to finish up with your head on the rudder-bars and your legs somewhere near the roof, it is much the best thing to wait and be shown the correct procedure. The proper technique is almost like mounting a horse. First of all, you stand beneath the wing facing forwards. The right leg goes up first while the right hand clutches the far side of your seat. You then use the left hand on the wing strut to lever you up off the ground while at the same time your left foot finds the actual stepping bar sticking out from the fuselage. A good heave and, hey presto, you are in.

It is at this stage that the pupil really begins to get to grips with the aircraft. In my case 'grips' was

definitely the right word. For after I had been told take hold of the control stick and put my feet on the rudder bar, my Instructor said: 'You'll get pins and needles in your hand if you hold the stick like that! I looked down and saw that I was gripping the thing so tightly that my knuckles were quite white. I was then told the proper way to hold the stick. All that's really needed is a thumb and two finger touch. Since, however, the third and little fingers look a bit queer sticking up with nothing to do, I was told that they can rest lightly in line with the others. But the one thing which I was not to do was to grip the stick tightly in my fist.

When I had put my feet on the rudder bar, I was asked the somewhat odd question as to whether I had ever driven a motor-cycle with my feet on the handlebars. Although I did own a motor cycle in my early youth, I was able to claim that I had never been guilty of trying to steer the thing in such a dangerous and unconventional manner. Undaunted by my apparently guilt-free youth, my Instructor asked me to imagine that I had in fact placed my feet on the handlebars. 'If you pushed your right foot forwards in such circumstances, your machine would then turn to the left while the left foot pushing forwards would cause a turn to the right,' he said. 'In case of an aeroplane it works the other way round. Push with the left foot and you will turn to the left. If you want to do a right turn, you use the right foot. Try it.' I waggled my feet on the rudder-bars and formed a mental picture of how the aeroplane would react to each movement.

I followed the procedure for starting the engine with great interest

(*Continued on page* 15)

B.E.A. and B.O.A.C. crew members under pilot training were the pilots who flew away Trainers, two Autocars and two more Aiglet Trainers, the latter were used to bring the eventual destination of the first four aircrraft was Kuwait in t

A DESTROYER IN THE JUNGLE

IT IS WORTH PLACING ON RECORD the facts of a unique operation carried out in Malaya early in March by a destroyer and a military Auster. The destroyer was the 2,600-ton *Defender*, one of Britain's most modern warships. Slowly sailing up the Johore river and avoiding the many sand-banks and reefs, the *Defender* passed through many miles of uncharted waters and finally arrived at a position from which she could bombard Communist guerilla hideouts. As the *Defender* dropped anchor and opened fire with her six 4.5 in. guns, an Auster arrived overhead and proceeded to direct the fire by radio. Soon after the bombardment had finished Gurkha troops moved in on the shattered jungle hideouts and mopped up any survivors.

aircraft shown above from Rearsby. From left to right the aircraft are two Aiglet
ry pilots to Rearsby and are operated by the Airways Aero Club of Croydon. The
Persian Gulf, where they will be used by the Kuwait Aero Club.

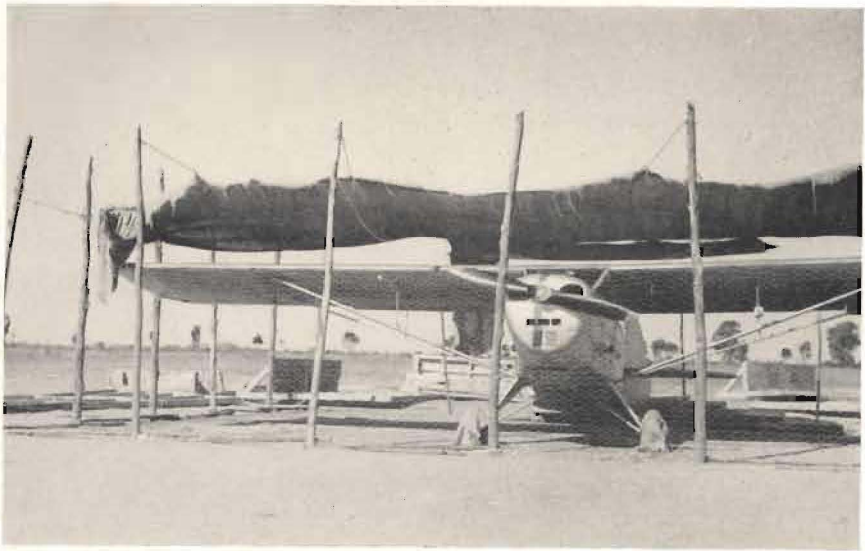
Our naval visitors posed for this very pleasant picture during their tour of the factory. The dog is not an intruder but a mascot answering to the name of "Whiskey."

THE NAVY WAS HERE

IT WAS DEFINITELY a nautical occasion when pupils and instructors of courses numbers 38 and 40 R.N. at R.A.F. Syerston, near Nottingham were conducted on a tour of the Auster factory recently. In charge of the party was Lt.-Cdr. R. B. Lunberg, R.N. (ninth from the left in the photograph) who was very impressed by a short flight in an Aiglet Trainer.

A "BUSH HANGAR"

FROM MR. HANS VOGT, an Auster owner in Greendale, Southern Rhodesia came the picture below showing his extremely utility "bush hangar." Constructed from local materials, it obviously cost very little and serves a most useful purpose. If any other readers have unusual "hangars" we would be most interested to see photographs of them.



A number of poles, some canvas, and it's a hangar.

AUTOCARS FOR HANOI

AS MANY READERS will already know, the two normal methods of dispatching newly-built Austers to destinations outside England are (a) by semi-dismantling the aircraft and packing them into large wooden crates for transportation by ship, or (b) arranging for the aircraft to be flown away from Rearsby. Quite recently however, a more unusual method was adopted when two Autocars were "flown away," but not under their own power. They were loaded into a French-owned Bristol Freighter, and flown to Hanoi in French Indo-China.

Considerable thought was given to the packing of the Autocars before the Bristol Freighter arrived, and the job was completed in a very short time. To save valuable space the wings, propellers and tail surfaces were removed and packed separately.

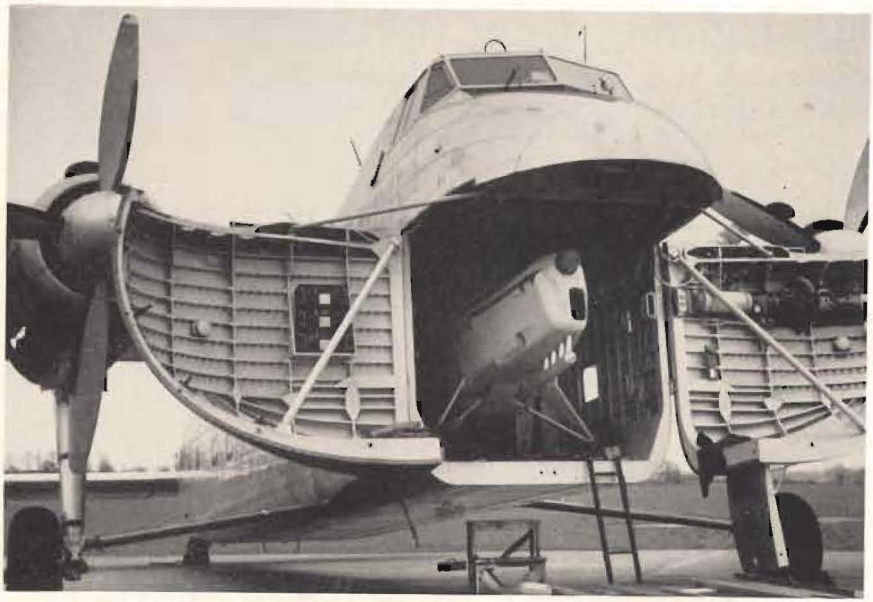
The first Autocar to be loaded went into the Bristol Freighter nose first, and was lashed down in the rearmost portion of the freight compartment. The second aircraft was stowed with its nose protruding into the nose doors of the Freighter with very little, if any, space to spare. The wings were fitted into specially made cradles and occupied positions down either side of the freight compartment.

The Autocars were ordered by a French firm, Compagnie Laotienne de Commerce et de Transport, based at Hanoi, where they will be used for mail carrying, 4-seat passenger work and flying ambulance duties—each Autocar being equipped for stretcher carrying.

ACKNOWLEDGMENTS

THE PUBLISHERS of the *Auster News* would like to thank the editors of *Esso Air World*, *Aircraft* (*Canada*) and *Over to You*, for their co-operation in preparing this issue.

Gently does it, and the first Autocar to be loaded into the Bristol Freighter goes aboard.



This photograph shows the very close fit of the second Autocar to be loaded.

LEARNING TO FLY—*Continued*

but am not going to describe it here. I will merely say that I made a note of the 'thumbs-up' or 'thumbs-down' signals which supplement the verbal instructions given by the pilot to the person who is swinging the propeller. When the prop is turning and before the 'chocks away' signal is given, a final check is made of the oil pressures, engine revs and altimeter setting. After 'chocks away' it is important, if one is not using radio, to taxy the aircraft to a position where the boards on the control tower showing the number of the duty runway can be seen. Although the duty runway is given to one verbally beforehand in the M.C.A. briefing room, there is always the possibility of a wind-change occurring while starting up for flight.

We taxied out to the down-wind end of the duty runway and there my Instructor carried out his final check before take-off. I noticed the mystic symbol TTMFFGH in my notebook and I will describe these checks in detail later on.

My Instructor turned into wind and in an incredibly short space of time the ground was falling away below and we were airborne. My 'air experience' had begun. We climbed to 2,000 feet above the towns and countryside of Surrey and up there my instruction continued. I was told to place my hand on the stick and my feet on the rudder-bars and to keep them there unless told to take them off. It felt a bit strange to feel the controls moving without any effort on my part, until I realised that it was due to the effect of the dual control system. I will report further progress —or otherwise in the next issue.

Fire-Fighting from the Air

"Firemen with a difference" is the term that may be applied to the flying firemen of the Northwest American states. Highly trained parachutists, and specialists as forest fire fighters, these men are building up a reputation of dependability and in consequence are cutting down considerably the annual loss by fire of thousands of acres of valuable timber.

Extracts from an article dealing with this subject in the "Esso Air World" Magazine are reproduced below by kind permission of the Editor.

SPEED OF ACTION is a necessity in fire-fighting. The noisy haste of city fire-engines has long been a commonplace, but in vast sub-continental regions of the United States there are enormous areas of forest so inaccessible to road transport that only recently has it been possible to control the fires which were able annually to destroy thousands of acres of valuable timber.

One such region is in the northern Rocky Mountain range and includes the National Forests covering large parts of the States of Montana, Oregon, Idaho, Washington and California. At the beginning of this century very little was being done to reduce the damage caused by fire in each successive summer, but by 1905 the need for control had become urgent.

In that year a small group of pioneer foresters of the Forest Service of the U.S. Department of Agriculture started a system to reduce the tremendous yearly losses in the remote and priceless forest wilderness. Transportation then was by pack-horses or by pack-humans. Trails were few. Fire-fighters struggled afoot across deep canyons and up mountain divides 12,000 ft. high They had no marked routes or dependable maps. It was hard to detect fires and many became conflagrations before they were sighted. A fire could spread from a spark to a disaster while the smoke chasers back-packed wearily across country for two, three or even five days before beginning their attack.

The odds against them were hopeless. The inadequacy of their system was demonstrated in the great fires of 1910. From 1911 to 1925, a network of trails was built and hundreds of mules were used to reduce travel time to fires. Even so, two-and-a-half miles an hour over the great distances was too slow. Too many fires still got out of hand.

Then came the truck and road era. Between 1926 and 1938 the development of low-cost truck trails opened many forest areas to mechanical transport. Travel time was speeded up to fifteen miles an hour, costs and losses were reduced proportionately. But at a certain point road transport ceases to be economically sound. Rugged terrain in the remote areas makes the cost of construction prohibitive. From that problem the use of air transport was born.

Aircraft patrol, searching for fires, was tried in a few flights in the Lake States as early as 1915. The results were negative. Flying equipment was not dependable. In 1919, the U.S. Army Air Corps provided aircraft and experienced pilots for patrol work over the Californian forests. But the aircraft were poorly

[*Photo by U.S. Forest Service.*
The "smoke-jumper" at the end of his journey —now ready to free himself of the chute, remove his specially built protection suit, and start for the fire. The "smoke-jumper's" fire fighting equipment is parachuted to the ground after he makes his leap.

adapted to the pounding they received in the turbulent air of mountain country. Often the downdraught was greater than their climbing ability. Pilots took tremendous risks; many had to make forced landings amid towering trees or on cliffs and rock slides.

Experiments were continued, nevertheless, in an attempt to make the aeroplane a useful tool in combating forest fires. By 1926 it was accepted as an adjunct to the lookout system of the Northwest. Air patrolmen helped in observing and reporting going fires and obtained information on the head of fast running fires in remote timberlands.

In the 1930s, a few landing strips were built in the most remote forests, and fire-fighters were flown to the one nearest the fire. From there they walked, thus cutting hours, often days, from the time required by the old trail system. Even so, the landing strips were few and the men still had to trudge long distances to reach a fire fatigued and only partly effective. Fires still had from four to thirty-six hours to spread before the attackers could reach them.

In 1929, a crew at the head of a fire high up on the mountainside was cut off from any ground transport which could provide the equipment to hold the fire from spreading through great tracts of timber ahead This desperate situation gave force to the suggestion of dropping supplies by air. For the first time this was done. Axes, shovels and hand pumps, bundled in Excelsior and blankets, were tossed out as a little aeroplane bounced through the churning air at tree-top level. Much of the equipment was damaged but enough was salvaged to hold the fire. That was the beginning of the aerial delivery of supplies direct to fire-fighting forces.

Since then air transport has developed rapidly. As aircraft were improved in performance, so were techniques for dropping cargo. Pilots learned to manoeuvre into almost impossible spots in the difficult air currents that prevail in mountainous country during the turbulent summer weather.

In the early years of cargo dropping, bundles were released at tree-top level to fall free at the target site.

Extreme accuracy was essential because an overshoot of a few feet might carry the package down into the canyon beyond the target. Breakages were severe and packaging to lessen the damage was costly and bulky—there was often more insulation material than payload. Parachutes, first used for dropping supplies in 1936, eliminated the need for bulky packaging. The principle of the static line, or mechanical tripping of the ripcord was discovered by a forest pilot and fire-fighter in 1937. By 1938, much of the initial supply of food and equipment necessary in the attack upon inaccessible fires was delivered by cargo chute.

Then came the exciting experiment —parachuting men directly to the the fire. The idea had come and gone many times, but before 1939 nobody had been willing to advocate the seeming fantasy of sending a live man down among sheer precipices, ragged peaks, foaming streams, rough underbush and dense stands of trees. But a handful of Forest Service smokechasers did it in the summer of 1939. They had no precedent and their equipment was crude according to present-day standards. Their protective clothing consisted of football padding and baseball masks. They had only the standard emergency parachutes. So equipped, they were at the mercy of the elements.

Their first jumps were aimed at the soft, grassy meadows high on the mountainside. Such sites are few in the wilderness forests and during one trial jump a gust of wind chanced to carry a jumper away from the meadow and slammed him down into a thicket of tall trees—the accident that all had dreaded. The jumper, swinging lightly down from the spring-like branches, reported the most gentle landing he had ever experienced. Thereafter, jumpers attempted purposely to land in green trees, which they called "feathers."

From the group that pioneered the first jumps, the crew of "smokejumpers," as they are now called, has grown to an organisation of 250 men, many of them college students of forestry. Stationed in squads at strategic points throughout the Northwest, the men perform a spectacular and dangerous task. They accomplish more actual fire protection for each dollar spent than any other department or phase of fire control activity in the Northern Rockies.

Protective clothing has been designed to prevent injury from sharp tree limbs and rocks. Manoeuvrable parachutes, designed for maximum safety and controlled descent, are now in general use.

The smoke-jumpers travel at 150 miles an hour and reach a point above a fire in the most inaccessible wilderness in a matter of minutes after it is reported. They bale out at 1,500 ft. above the ground in numbers proportionate to the size of the fire and land within yards of it. Tools, rations, radio-telephone and all other necessary equipment follow by parachute. They have had a chance to observe the fire and the surrounding area from above and have a knowledge of its probable course.

Smoke-jumping is dangerous. The men risk their lives with each jump Some accidents have occurred and jumpers have returned over mountain trails on stretchers. But in thousands

of jumps over the most rugged country no one has been permanently injured or killed.

Aircraft are now so much a routine part of forest fire-fighting that patrol planes search the danger areas whenever weather conditions are likely to encourage fires. A report of the least wisp of smoke is radioed back to the control centre or "ranger station" on one of the airstrips, where a transport aircraft and smoke-jumping crews are brought to readiness As soon as fire is confirmed by closer investigation at tree-top level, the transport takes off with the men and equipment estimated to be able to deal successfully with the outbreak.

Within minutes of the first alarm the aircraft is on its way with four or five young men still donning their equipment in its restricted interior. By the time they are ready the plane is near the fire. After a quick survey of local conditions and the selection of a suitable jumping site the men jump in quick succession. As each man lands safely he lays out a strip of yellow crepe paper to show that all is well and the aeroplane returns to drop the necessary equipment.

Within five or ten minutes more, the fire is being attacked by the well-trained men who are free from the travel fatigue that weakened the old-time ground force before it struck the first blow. Such action by the smoke-jumpers has stopped, at small size and low cost, hundreds of fires which, in the absence of aerial attack, would have raged over mountain and valley.

That such is in fact the case is shown conclusively by the fire records of the Northern Rocky Mountain Region. In the foot and horseback era before 1930, over 250,000 acres were burned, on average, each year. This appalling figure was reduced to 65,000 acres with the use of motor transport. In the last ten years, with the use of aircraft, the average destruction has dropped well below 9,000 acres a year.

These encouraging figures have resulted in a greater use of aircraft. Last year they flew for nearly 11,000 hours, carrying 8,148 men and 529,087 lb. of cargo, nearly half of which was dropped by parachute. The Forest Service now owns 17 aircraft and recruits military and commercial aid whenever operations warrant it.

Work is now in progress on the possibility of fighting fires with bombs containing water or chemicals. The first attempts to do this were made in 1930 by a bush pilot and an old-time fire-fighter. They had no scientific aids and their results were far from encouraging.

Seventeen years later, more productive experiments in fire bombing became possible. The Forest Service and the U.S.A.F. co-operated in comprehensive fire bombing tests. Various types of water bomb were used, and the experiments demonstrated that forest fires, if attacked while still small, can be retarded and, under certain conditions, extinguished. Large-scale bombing of forest fires is not economically practicable if the entire operation must be paid for out of Forest Service funds, but it has been suggested that one of the peacetime functions of the U.S.A.F. might be co-operative defence of the National Forests.

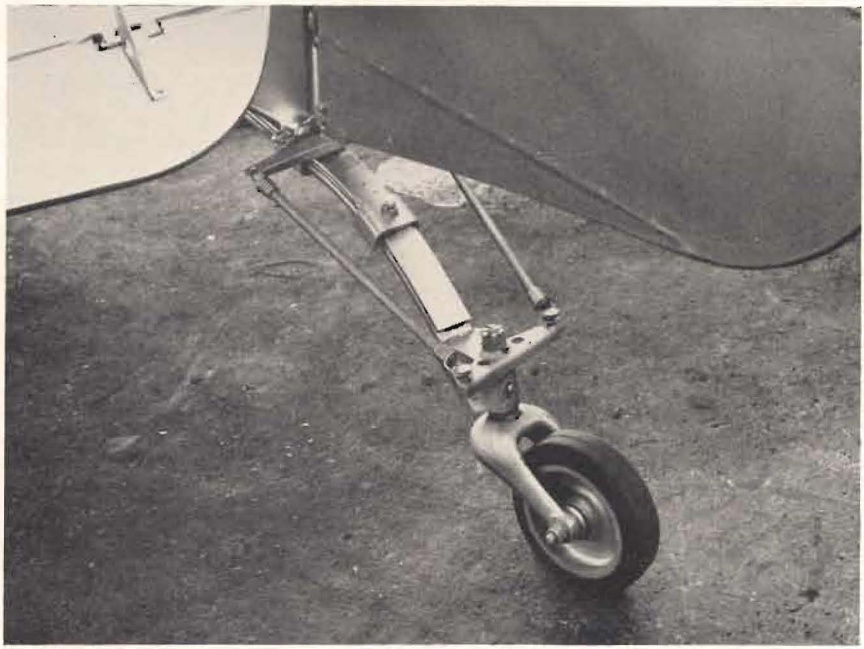
Accessories for Owners

THE STEERABLE TAIL WHEEL

THIS MODIFICATION is particularly useful for aircraft using aerodromes with long runways, it helps considerably in reducing tyre wear by eliminating the use of main wheel brakes for steering. It is extremely easy to fit and, as will be seen in the photograph, consists of a bracket bolted to the bottom of the rudder king-post, another bracket is secured to the tailwheel assembly, and the two are connected with bungees.

Any movement of the rudder pedals is transmitted through the bottom bracket to the tailwheel assembly, thus creating a steering effect.

The modification, number 1517. is applicable to all types of Austers; for the J.5B, G and H series, however, the number is 1850. Supplies are readily available, priced at £5 10s., ex-works unpacked.



The steerable tail wheel

CORRECTIONS

CORRECTIONS to the last issue of the Auster Service Bulletin, No. 33:

Mod. No. 412 *to read* 142.

Mod. No. 1670. The drawing referred to as GJF *to read* EJF.

Mod. No. 2601. Reading "To introduce steel . . . . ." etc., delete the word "steel."

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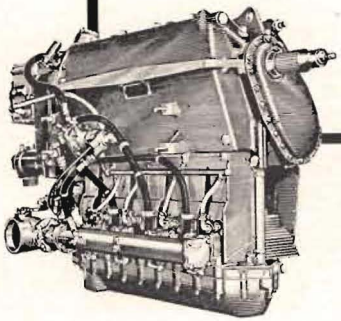

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