

# AUSTER NEWS

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*Adler.*



Vol 6 : No. 4

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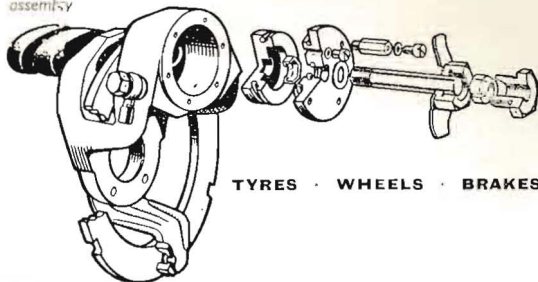
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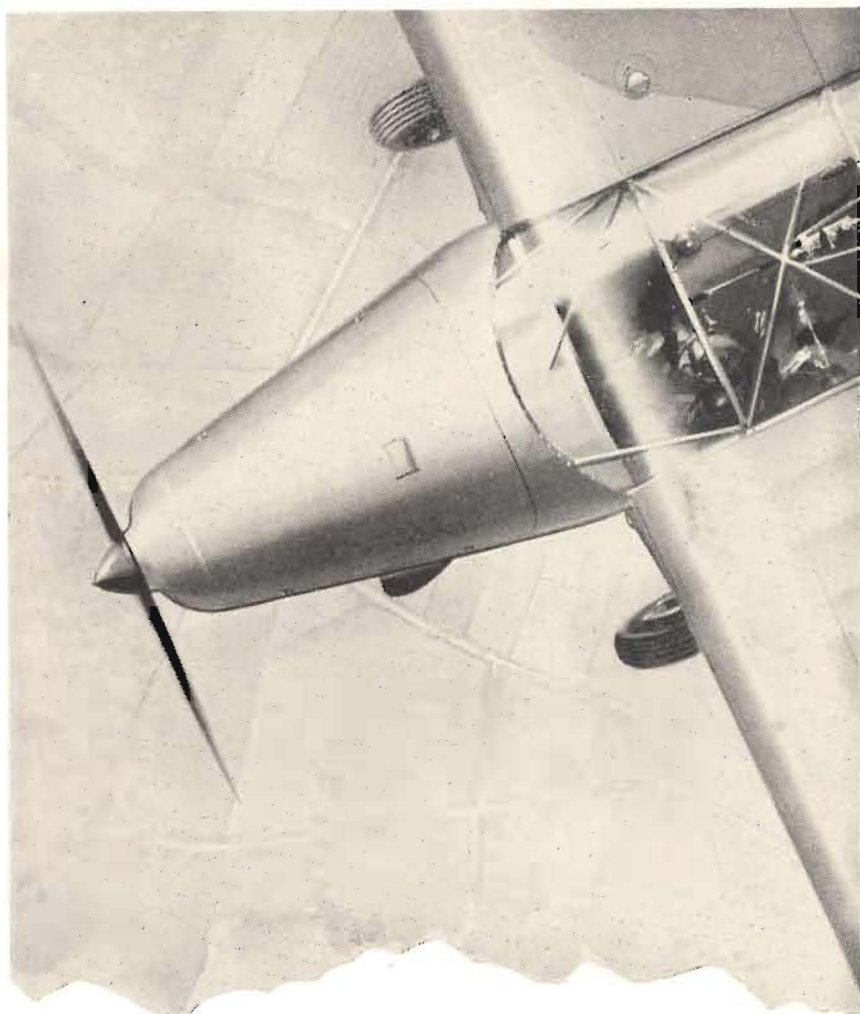
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The Blackburn Bombardier four-cylinder injection engine, the power unit of the Auster A.O.P.9, is in production for the Royal Air Force. It is rated at 170 h.p. at  $6\frac{1}{2}$ :1 compression ratio and operates on fuels having a minimum octane rating of 80. The reliability of the "Bombardier" has been proved under the most arduous service conditions. Its direct fuel-injection system provides instant response to rapid throttle handling and reduces the risk of "icing up" to a minimum. At 7:1 compression ratio the "Bombardier" is rated at 180 h.p. and operates on fuels having a minimum octane rating of 91/98.

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# AUSTER NEWS

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THE PAST YEAR has been one of considerable achievement for the Auster company. It has seen the development of the world's first commercial agricultural aircraft—the Auster Agricola.

There have been many attempts to provide aircraft to meet the demand of dusting and spraying operators, but all these have consisted of modified existing aircraft, or types to perform other jobs in addition to farm duties. The result has long since been proved to be inefficient, as the requirements of aerial farming are too specialised to permit the effective use of such aircraft.

Already the Agricola has been acclaimed in New Zealand where the first production aircraft has successfully operated under the arduous conditions for which it was designed.

To all our readers we send our Sincere Greetings and all Good Wishes for Christmas and the Coming Year.



## Cover Photo

THE AGRICOLA is now in service on topdressing duties in New Zealand. In this air-to-air view can be seen the very wide hopper filling trunk, just behind the cockpit. The superb forward view for the pilot is due in the main to the large one-piece safety glass windscreen. "Flight" photo

# AERIAL PROSPECTING

## *in Central Africa*

—by Hans Vogt—

*Hans Vogt, an Auster owner in Southern Rhodesia, is a particularly enthusiastic aviator. "Normal" flying not holding enough excitement he turned to aerial prospecting for radio-active elements.*

THREE YEARS AGO when I unpacked the scintillometer airfreighted from Canada, it looked to me like an unsolvable jig-saw puzzle.

My scintillometer was the first to be imported into Central Africa, consequently there was no one to whom I could turn for assistance in either the assembly or operation of the "thing" which looked distinctly out of this world. However, patience and a certain amount of luck saw it successfully assembled and installed in my Auster. Even though the rear seat was taken out to make room for the equipment it was still quite a problem to get into the pilot's seat through the conglomeration of cables, levers, switches and dials.



*Refuelling at an airstrip in the bush during aerial prospecting the Auster gets a well earned rest.*

Slowly, however, the layout was modified until now, after two seasons of operation with much trial and error, it looks very neatly arranged and most imposing. I had to fit a lead shield half an inch thick in front of the scintillometer to protect it from the radiation of the luminous dials of the aircraft's instruments. Another shield was fitted to one side, this helped me to locate certain deposits much more quickly. It works like this: Flying along a mountain slope and back at the same level, I can see whether the readings come mainly from the side or from underneath. If the same readings are recorded in both directions it means that radiations come from further down. Different readings, i.e. less on the shielded side, indicate a mineral strike to one side of the flight path recommending a search higher up.

When I first started aerial prospecting my knowledge of electronics, geology, radio-activity and geophysics was strictly limited. In addition navigating whilst flying low over bush country has its peculiarities, as many of the maps available can only be regarded as a vague indication of topography.

I soon found it preferable to prospect at sunrise. The relief of the country below can be discerned much better in the long shadows cast by the morning sun, and a constant height from the ground can be maintained easily in the still air. The latter point is important as varying heights affect the scintillometer readings.

Operations were well under way when another problem arose, how to mark the ground from the air where a "hot spot" showed up so that I could follow up on the ground with a Geiger counter, and peg a claim. First I tried throwing out paper bags filled with whitewash powder, but the tall grass hid the white dash on the ground. Next I threw out sheets of newspaper but was defeated here either by the wind which blew them away, or the natives who used them for wrapping cigarettes. By now, and getting desperate, I considered bombing the site or starting a bush fire, but before I resorted to such rash measures a less spectacular solution resolved itself—photography. So now when a high reading shows on the scintillometer the procedure is to gain height, turn and photograph the spot making sure that some distinct landmark is in the picture which will enable a ground search to pin-point the position.

Apart from the normal hazards of flying over wild bush country at low altitudes, many other occurrences ensure that there is never a dull moment. Here are just a few to show their diversity.

### **Low flying**

Once, whilst I was having a close look at some rocks along the base of a hill, I banked round a blind cliff and found myself face-to-



face (at the same altitude) with a herd of giraffes. They were nearly as frightened as I was, for they waggled away in their groggy canter as I pulled the stick back hard to clear them. Buffalos, elephants and zebras all have their prefixed escaping distance. As you approach they first look up interested until a certain noise-level is reached, and then they spread out and run in one or several directions. Turning back to them, they again look first until the "fear level" is reached and they scatter once again.

### **Dust devils and flies**

Hitting a whirling dust devil feels like running into a rock and one is grateful for having sturdy struts and wings to take the blow. I used to be brave, but having been shaken up enough I now make every effort to avoid them. Likewise with flies. Around Lake Nyasa are the breeding grounds of a certain fly, and when they hatch, trillions of them rise like an enormous dark cloud. Around Lake Rukwa in Tanganyika locusts breed. I once flew through the edge of a swarm and afterwards had to spend hours cleaning down the Auster and trying to dispel the peculiar smell they leave behind.

### **"Helpful" natives**

When a landing is made at some far away strip the usual precaution is to watch out for ant-bear holes or ant heaps before touching down. Then, apparently out of nowhere, hundreds of natives appear, run to the plane and assist with obvious pleasure in pushing it to a parking place. The drill here is to guide the aircraft personally by holding the tail unit. If this step is not taken the gleeful crowd push as fast as they can, and according to which side has the stronger team, or gets reinforcements, the aircraft follows a frightening zig-zag course.

On certain outposts natives can refuel an aircraft without a white man's supervision. However, it is safer to watch the proceedings . . . At one strip I was interested to see that the fuel did not pass through the chamois leather, the reason being that it was simply water, which they pumped from a drum marked 75 octane. Investigation revealed that they had filled it to cart it to a Kraal, but later they forgot about it and subsequently thought it was petrol. A stamp on the invoice said "Tested for water" which would have been truer if it had read "Tested for petrol".

Trying to be especially helpful a native thought that my tail wheel tyre was flat (solid rubber) and tried to pump it up at the greasing nipple. The look of incredulous surprise on his face at the complete lack of effect for his labours was something I shall always remember. To be fair, it must be said that the natives



at outposts are really good natured at heart and would not be shrewd enough to think up such tricks purposely. Good natured or not, the natives have a strong sense of self-preservation and very effective means of dealing with people they don't trust. One such case concerns the natives of the Karamoja district in Uganda. Sometime ago a doctor studying their blood groups went from kraal to kraal testing a drop of blood for that purpose. He was gravely misunderstood by the Karamojas who thought he wanted to see which natives were suitable to be cut up and preserved as tinned meat. Some time later a new brand of tinned meat was offered in that region. It showed a happy looking native on the label—happy because he ate that meat. The natives, however, reasoned that orange marmalade showed oranges, preserved peaches had peaches on their labels, so a native on the label obviously meant . . . cut up natives inside. They could not read the



*After an aerial "strike" reveals a potential deposit of uranium, a ground search with a geiger counter leads to the erection of a claim post such as this one.*

beef explanation. When the doctor returned they killed him and that settled that. Afterwards I was warned that the red line on my graphs could be interpreted that my low flying Auster was sucking the blood of both the Karamojas and their cattle. This was not comforting and I did not show them the graph any more.

An interesting thing about the Karamojas is their hair style. Built up with fat and dung it is so constructed that they cannot rest with their heads upon the ground at night. Therefore they fashion headrests and use them to avoid damage to their 'hair-do'.

### **Bush fires**

These are more treacherous than the wild animals for in a few minutes one can start and then race along consuming all before it. After one trip, I remember arriving at a landing strip to find it covered by a bush fire. Having parked the Auster on a private airfield I thought was safe, but in the night a fire approached and we burned a protective fire-belt around the aircraft to prevent it from being destroyed.

A list of anecdotes would not be complete without one concerning the cause of all my aerial prospecting—the minerals searched for. I had collected a number of mineral samples to take back to the Assay office. They were very heavy so I put them on the floor of the cabin to my right. After taking off and setting course to my destination, I settled down for the trip. Only after some time it occurred to me that the evening sun was placed wrongly in the sky and that my compass was pointing continuously to North on the starboard side. It immediately dawned on me that the samples were the cause of the trouble for the compass didn't budge a fraction of an inch throughout the journey—again I learned by experience.

Though big companies prospect with aircraft up to the size of a D.C.3. with five experts as crew, the Auster has its advantages. It is extremely useful to be able to fly with half flaps down, as slow as 45 m.p.h. One can inspect readings easily whilst flying at the usual 300 feet altitude. Rock formations can be observed at leisure, and if need be, gorges and narrow valleys may be entered quite safely where faster and bigger aircraft dare not go. The reliable Lycoming motor (Hans Vogt's aircraft is a civil mark 5) provides enough power to cope with downdrafts or short steep gradients.

A friend of mine, Hans Wurth, has also been bitten by the prospecting bug and with 2,000 hours of gliding experience he often flies my aircraft. We both agree that it is an exciting game with good prospects to draw the big prize or hit the jackpot, and there is never a dull moment.

# RUBBER



## from OIL

*It was announced recently that plans are well advanced for the construction at the Esso Refinery, Fawley, of a new plant to produce butadiene, a Petroleum gas, which will be fed by pipeline into a new factory to be built on an adjacent site by the International Synthetic Rubber Company. These will be the first full-scale plants to make synthetic rubber from oil in Britain.*

**D**URING the last ten years we have witnessed a remarkable recovery in Europe from the effects of a devastating war. We have seen, and still see today, an encouraging climb from the rigours and privations of war and its aftermath to higher standards of living. Substantial though the progress has already been, the prediction has been made that the standard of living in the United Kingdom today could be doubled in the next twenty-five years.

The peoples of Europe are, in fact, raising their sights. More and more people want more and more goods. It is, of course, well known that a plentiful supply of energy is fundamental to this pattern of continuous acceleration and expansion. In this country we see to what extent our whole economy hinges on the availability of primary energy fuels, including coal, oil, water and atomic fuel.

But the demands for motive power and heat are not the only ones that increase with every passing day. Among the other commodities upon which, it might be said, our standard of living depends is, suprisingly, rubber. Perhaps not so suprisingly when



we stop to consider its many vital uses. Modern road and air transport, for example, are dependent to an important extent on rubber tyres. All other forms of transport and most industries require large quantities of rubber if they are to function efficiently. To give some idea of the growth of this essential requirement, we will take the figures of world consumption of rubber decade by decade.

In 1910, 73,000 tons were consumed. In 1920, 311,000 tons. By 1930 the figure had reached 685,000 tons, and by 1940, 1,110,000 tons. In other words, world consumption of rubber increased by about 100 per cent every ten years between 1910 and 1940, and the 1954 figure of 2,500,000 tons indicates that even this rapid rate of increase has been nearly maintained.

Right up to 1940, the natural rubber industry carried the full brunt of this enormous growth in world demand. It was a formidable achievement. Indeed, from the time when the industry was founded in Brazil, the whole story of development is a fascinating record of achievement. Rubber seeds were brought to London in 1876 by an English coffee planter and amateur botanist, Sir Henry Wickham, and there at Kew Gardens the first artificially propagated rubber trees matured. From Kew Gardens, seedlings went first to Ceylon and then from Ceylon to Singapore and other parts of the Malay Peninsula, where English colonists were trying to develop new exports. The trees thrived in the climate of Malaya and spread throughout the East. The Dutch colonials in the nearby East Indies watched the development with interest and soon followed the example, and before long the Far East plantations supplied the vast bulk of the world's rubber needs.

Much has been done in recent years, and is still being done today to improve the yield from the natural rubber tree. Planned replanting is now a generally accepted feature of modern rubber estate management in the plantations of Malaya, Indonesia, and Ceylon, which now supply all but a very small percentage of the world's natural rubber. But Nature imposes her own limitations. Old trees, become, in the course of time, unproductive, and it takes on average seven years for a newly-planted rubber tree to mature and to yield its precious sap. Yet world demand for rubber continues to grow apace.

Can this growing demand be satisfied? If not, what is the alternative? To answer the second question first, it is clear that if rubber were not forthcoming in the volume required, industrial expansion would come to a halt and transportation would become insufficient for a nation's economic needs. It is not overstating



the case to say that these and other consequences of a rubber shortage would quickly reflect themselves in the standard of living of every individual.

It is no longer reasonable to expect that natural rubber can cope with the full weight of present-day needs. This industry, which until recent years satisfied the whole world's appetite for rubber and which will always have a vital part to play in world economics, now needs assistance. It needs a new partner to fill the gap between rising demand and, at the moment, almost static production.

But from what source will this vital supplement come? From a most unlikely source. From oil. From that versatile substance which gives us products as varied as petrol and bitumen, fuel oil and terylene, paraffin and plastics. Few substances are less alike, to the sight and to the touch, than rubber and oil; yet the research that goes on in the oil industry hour by hour and day by day has discovered, developed and perfected a process that enables these two great industries—natural rubber and oil—to enter into a new partnership to supply the needs of industry and transport.

The story of synthetic rubber is one of research and development that is typical of the dynamic character of the oil industry. Although synthetic rubber of a kind was produced as early as 1917, it was so bad that it was easy to believe stories that solid tyres made from it had to be jacked up at night in cold weather to prevent them from developing flat spots where they rested on the ground. But, historically, this was the beginning of the synthetic rubber that saved civilization twenty-five years later and that today comes to the aid of the natural rubber industry.

In the years between the two world wars research continued, new processes were discovered, some were discarded, some developed. Progress was steady but slow; nothing of any great commercial importance was produced; but a store of knowledge and experience was built up that proved of immeasurable value in the years ahead. For in 1942 the Japanese entered the war and cut off all supplies of natural rubber from the far East.

This threw into sharp relief the vital importance of rubber to a nation and to the world. Without it, industry and transport come to a full stop, and armies, which today march on their wheels, are rendered immobile. Something had to be done and done quickly.

Backed by painstaking research over many years and with only small plants producing small quantities of synthetic rubber, the American government set up plants for the production of this new commodity in vast quantities. It took eighteen months from the

attack on Pearl Harbour to begin making synthetic rubber successfully on the scale required. Another year later final victory was in sight, and in the second quarter of 1944 production caught up with demand. This synoptic account of the birth of a new industry in a time of peril can give only the vaguest idea of its dramatic and



*Part of a plant used for producing rubber from oil.*

absorbing character; but we are here more concerned with the part that this new industry must play in the rapid expansions and developments of post-war years.

The most successful of the synthetic rubbers produced during the war was GR-S, so designated by the American government when its plants produced rubber by the butadiene-styrene process. In this process, butadiene, a petroleum gas, is used in a proportion of about three to one to styrene. Styrene, on the other hand, is manufactured from ethylene and benzene, the benzene being produced from either coal or petroleum. The ethylene and benzene are combined to give ethyl benzene and this is subjected to high temperature, when some of the hydrogen is removed to form styrene.

Here we must say a word or two about the butadiene-styrene process, for it is by this process that the newly-formed International Synthetic Rubber Company is to produce rubber at Fawley. In simple terms, the butadiene and the styrene are brought together in a water emulsion. Here they are subjected to pressure and agitation so that they join up, or 'polymerize', to form a butadiene-styrene copolymer which is GR-S rubber. At this stage we have, in fact, a synthetic rubber latex which looks very much like milk. The rubber particles are separated by introducing acid—a process known as coagulation—which indeed has a similar effect to the souring of milk. The rubber particles are then readily filtered washed, dried and compressed to give slabs of GR-S rubber.

This GR-S rubber has proved to be a satisfactory supplement to natural rubber in a host of applications. It is now generally accepted, for example, that GR-S rubber gives a motor car tyre tread which is more resistant to abrasion, and therefore to wear, than a tread made of natural rubber. It is, in fact, expected that a large proportion of the 50,000 tons of GR-S to be produced by the International Synthetic Rubber Company will be used in the manufacture of motor car tyres, since in most countries transportation needs account for more than 50 per cent of all rubber consumed. The supply of natural rubber to this country is expected to remain as high as ever and even to increase; but it is unlikely to increase at the rapid rate of overall demand for rubber, and this is the gap that GR-S will have to fill. This is the measure of the help this completely new industry in this country will have to give if industries and transport systems are not to be seriously deficient in essential products.

The Government has given permission for 50,000 tons of GR-S to be imported into the United Kingdom from the United

*(Continued on page 19)*



# An Auster's part in the Argentine revolution of

By Arnaldo Varas

*During the uncertain days from September 16th to 22nd, 1955, when bloody battles were raging on land, sea and in the air, there were many contributions towards the common goal of freedom even in those provinces where the Revolution did not manifest itself in a warlike fashion.*

*The episode we are about to relate is an example of one of these contributions; an action that comes to light only after a year's silence due to the modesty of its protagonists who in those days preferred to remain anonymous.*

AT APPROXIMATELY 5 p.m. on the 20th September, 1955, an Auster Autocar, LV-FGL, was flying high over the ragged and inhospitable peaks of the Sierras del Pie de Palo. Only a few minutes before, it had taken off from the San Juan aerodrome, and was now climbing to 10,800 feet in order to clear the peaks of the Pie de Palo which reach up to 10,350 feet above sea level. The weather, apart from the typical conditions encountered with mountain flying, was excellent. The aircraft, with two occupants on board and loaded to maximum capacity, handled perfectly in the crisp air with the winter sunshine glinting on its silver wings.

Gazing down at the valleys bathed in the evening sun both pilot and passenger silently wondered whether or not they would return from their imminent task.

The mission entrusted to the small aircraft was one of utmost importance. It was the contribution of the San Juan Civil Aviation department towards the liberation of the country. The Auster's pilot, one of the many who fly for the sake of pleasure and sport at the Centro de Avacion Civil San Juan, undertook this mission only out of patriotism, for the only reward he expected was to be able to carry the mission to a successful conclusion.

The plan consisted of informing the population and the authorities of the adjoining Province of La Rioja of the triumph of the Revolution of Liberation. The Revolutionary Command of the



# liberation

Cuyo provinces was sending to the loyalist commander at La Rioja an intimation to surrender, since this was the only region in the country that still remained in the hands of those addict to the now crumbling dictatorship.

To this effect, civil pilot senior Ernesto Ruiz and an Army Captain were flying towards the city of La Rioja, capital of the province of the same name, to accomplish their dangerous task. Dangerous because La Rioja accom-

modated many bands of armed Peronist supporters including both anti-aircraft units and a fighter squadron. Apart from the order to surrender, 20,000 copies of the San Juan newspaper Tribuna were to be scattered over the city in order to inform the people of the collapse of the dictatorial regime.

The 199 miles separating San Juan from La Rioja were satisfactorily covered by the Autocar, and at sunset the objective had been reached. Flying at 11,800 ft. the pilot carefully checked the movements on the local airfield only 2 miles away from the city. Three fighters, presumably loyalists were parked there, but even after Senior Ruiz had circled the airfield a number of times, a lack of ground activity indicated little possibility of an interception taking place. As a precautionary measure, however, an escape plan had been devised which would, if need be, have taken the Autocar into the neighbouring range of Chilecito hills. A landing could have been effected in the hills due to the excellent slow flying characteristics, and the rugged undercarriage of the Autocar.

The reconnaissance complete, Senior Ruiz flew across the city scattering the newspapers over the most densely populated areas.



*Senior Ernesto Ruiz pilot of the Autocar holds a copy of the newspaper which he dropped over La Rioja.*

This accomplished, the aircraft flew directly over the military area where the captain dropped a red and green container which held the order to surrender. The occupants followed the drop of the container as far as their eyesight would permit, then satisfied that it had fallen within the limits of their objective and fearing a probable attack by anti-aircraft weapons, the pilot pointed the Auster's nose due south-west towards its base as the last of the evening sun disappeared behind the mountains.

The return flight would prove more difficult since it entailed flying over the mountains in pitch darkness, but the pilot, with a considerable knowledge of the terrain over which he was flying, and guiding himself by the lights of the few farms that existed under his flight path, managed to keep his course and land at a small emergency landing strip by the township of Valle Fertil 93 miles distant from La Rioja. Valle Fertil is in the San Juan Province. The landing took place at 9 p.m., the strip being plainly visible from the air on account of its whitish colour and the contrast it offered with the surrounding vegetation. In spite of the shortness of the strip, the aircraft touched down perfectly in the inky darkness.

On the following day, having flown back to their base in San Juan, the occupants learnt that their mission had been crowned with success. La Rioja had surrendered, and this meant that the Revolution was now victorious throughout Argentina. They also learned that whilst flying over the military area they were fired upon with small arms by the loyalist garrison, but this took no effect because of the high altitude maintained during the operation. The fighters observed at the aerodrome did not attack them because their pilots had been placed under arrest by the loyalists on account of being their revolutionary sympathisers.

Thus concludes this story which in a small way helped to cement the existing union of the Argentine democratic citizenship with its Armed Forces. Now, after a year, when the sound of battle is no longer to be heard, and the blood of brothers no longer flows over the land, the Autocar still carries out missions over similar territory. However, they are missions of mercy and the aircraft is used mainly in its ambulance version.

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### BOOK REVIEW

"Unarmed into Battle" is the appropriate title of a book recently published which covers the history and war-time activities of Auster Air Observation Posts. Many fascinating stories are told, perhaps for the first time, of the unarmed ventures over enemy territory by Auster pilots.

A comprehensive review of the book will appear in the next issue of the Auster News.

# TO ITALY AND BACK in an Auster

By the Air Correspondent of the *Birmingham Post*

**T**HREE members of the Warwickshire Aero Club at Elmdon Airport will be helping to keep themselves warm this winter with memories of a delightful holiday spent in Italy during August. A large number of people probably spent their holidays in Italy this year, but there can be very few who made the journey there and back in quite the same way as the aero club members, who set out in a three-seater Auster and returned eight days later.

The Auster was a new one and the trip to Italy and back was in the nature of a test flight. It was undertaken by Mr. Bill Reece, an English teacher at Moseley Grammar School; Mr. John Parker, a radio and television retailer; and Mr. Douglas Attwood, branch manager for an industrial firm in Birmingham. Their intention was to see Pompeii.

On August 17 the Auster took off, each of the men having agreed to take turns flying it during the 3,000 mile trip. They flew non-stop to Le Touquet, where they landed to refuel. The plan was to fly on to Lyons, but bad headwinds slowed the ground speed of the aircraft so a landing was made at a little club aerodrome at Nevers.

## **Fine Scenery**

Excellent progress was made during the rest of the flight to Lyons where the Auster was refuelled again and then flew on towards Cannes. It was "a little tricky" over this stretch of the journey, since the foothills of the Alps lay between the trio and their destination, and ugly looking cumulus clouds blanketed the tops.

They flew the Auster down the Rhone Valley to avoid the clouds and were rewarded, they said, by some of the most magnificent scenery they had ever seen. One of the three had made the journey by road, but the scenery was many times more breath-taking from the air, he said.

They spent the afternoon and evening in Cannes and were fortunate in being able to book in at a good hotel in spite of the popularity of the place. The only thing that annoyed them during their short stay was a charge of 25s. for three coffees!

## **No Radio**

From Cannes they followed the coast for a while, then crossed the Bay of Genoa and reached Florence. Flying conditions were now very turbulent and the weather extremely hot. After refuelling at Florence they flew down the centre of Italy, keeping to the valley lying between two mountain ranges.



Because the Auster was not carrying radio, they were not allowed to land at Rome's main airport, putting down instead at an aerodrome called Urbe. The Italians were rather horrified at the absence of the radio: they thought the three Birmingham men were taking a big risk.

Although they wanted to continue to Naples that day, the flyers had to stay in Rome for the night. Naples was open to non-radio aircraft only during certain hours of the day. When they did land they found themselves at an enormous airfield shared by civilian and military operators

They spent two nights in Naples, visiting Pompeii as they had intended, and doing a lot of other sightseeing as well. Then, off to Florence on the journey back. Here they were advised not to continue as the weather overland was bad. They decided to fly across the sea instead, in spite of the Italians' doubts about the advisability of continuing without radio.

### **Perfect Landfall**

Good navigation got them to Cannes after they had made a perfect landfall on the French coast. Perhaps made over-confident by this success, they planned to make Le Touquet in one hop. They were a little less ambitious when a meteorological report came in showing that headwinds from 50 to 75 m.p.h. were blowing down the Rhone Valley—and their air speed for cruising was only 75 m.p.h. They might not have taken off if an Englishman in a Tiger Moth had not arrived and reported that the wind was only about 20 m.p.h.

Although they found the wind was rather stronger than this, they managed to make Lyons, still intent on getting to Le Touquet by nightfall. They had been in flight for only an hour, however, when they found themselves being forced down lower and lower by cloud. There was rain, too, sleeting down with a force that made it difficult to see.

### **Down to 150 ft.**

By the time they had been forced down to only 150 feet above the ground with the grey clouds only just over the top of them, the three men were becoming a trifle anxious. They picked up a railway line and decided to follow it, dreading that it might disappear into a tunnel at any moment and leave them with no ground reference at all.

There were simultaneous sighs of relief when an aerodrome showed up to one side of the line. It was Auxerre. They landed the Auster and decided to call it a day.

The next morning saw them at Le Touquet, and they had soon crossed the Channel and were on their way to Elmdon. "It was all well worth while," they agreed. "Quite an enjoyable experience."



## Rubber from Oil—(Continued from page 13)

States this year. This tonnage is, in fact, the planned annual output of the new plant at Fawley which is due for completion in 1958, and so it can be seen that this new development will make a dollar-saving contribution.

Outside the United Kingdom, much the same kind of picture presents itself throughout Europe. For example, Germany plans to raise its modest 10,000 tons of GR-S a year to 50,000 tons by 1958. A plant to produce 30,000 tons a year is now being built in Italy. France and Spain also plan the production of synthetic rubber.

So it is that this new development at Fawley, this new industry, must take its place as an essential part of this country's economy. It will make a useful contribution to the maintenance and improvement of our living standards. And all because research has been able to develop ways and means of re-forming crude oil into a wide variety of forms. Thus of crude oil it may now be said that it bounces, because one of its many forms enables us to make rubber from oil.

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### **AUSTER CIVIL REPAIR MANUAL**

(Continued from page 22)

complete manual is £55s. 0d. (post and packing extra) and this covers the cost of Part 2 which will be issued subsequently.

Orders should be addressed to the Publications Department, Auster Aircraft Limited, Rearsby, Leicester, England.

### **ADVERTISING SPACE AVAILABLE**

A limited amount of advertising space is available in the 1957 issues of the Auster News. Details of advertising rates and circulation figures can be obtained from the Editor, Auster News, Rearsby, Leicester.

# AUSTER SERVICE BULLETIN

Auster Aircraft Limited,  
Rearsby, Leicester, England.

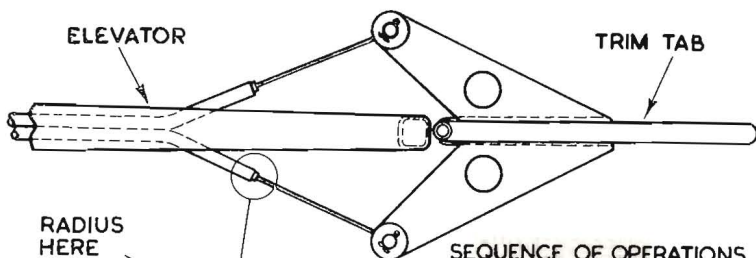
Issue No. 41  
Nov./Dec. 1956

## ELEVATOR TRIMMER CONTROL

(Applicable to all aircraft of the following types—  
J1, J1B, J1N, J2, J4, J5, J5B, J5P).

### Modification No. 3285

The cable stops at aft end of trimmer guide tubes on elevators are to be radiused as detailed below on or before March 1st, 1957.



### SEQUENCE OF OPERATIONS.

REMOVE TRIM TAB CABLE FROM TRIM  
TAB & WITHDRAW PIANO WIRE FROM  
ELEVATOR GUIDE TUBES.  
RADIUS CABLE STOPS AS SHOWN.  
ENSURE THAT ALL SHARP EDGES  
FILINGS ARE REMOVED.  
RECONNECT PIANO WIRE TO TRIM TAB  
& RIG IN ACCORDANCE WITH HANDBOOK.

ENLARGED DETAIL OF CABLE  
STOP, SHOWING RADIUS.

In view of the serious consequences that can result from loss of full trim owing to failure of control wire, it is most important that the circuit be frequently inspected and lubricated, especially at the location referred to in the sketch above.

Attention is drawn to the special bulletin issued on the 27th September requesting the replacement of trimmer control wires fitted during the years 1950-51-52. The full text of that bulletin is repeated:—

## SPECIAL BULLETIN

ALL AUSTER AGENTS AND OWNERS

*It has recently been confirmed from micro-examination of a specimen sample of piano wire that faults in the material have resulted in the*

occurrence of stress cracks during the cold drawing process. These cracks penetrated to the centre of the wire and must be intermittent throughout.

The piece examined was from a batch of wire which was supplied to us during the years of 1950, 1951, and 1952, and was, of course, used as a control wire for the operation of the elevator trim tab.

All owners of Auster aircraft, irrespective of type and fitted with this piano wire type control, built during the above years or were supplied with spare piano wire during this period should replace same immediately with later manufactured material.

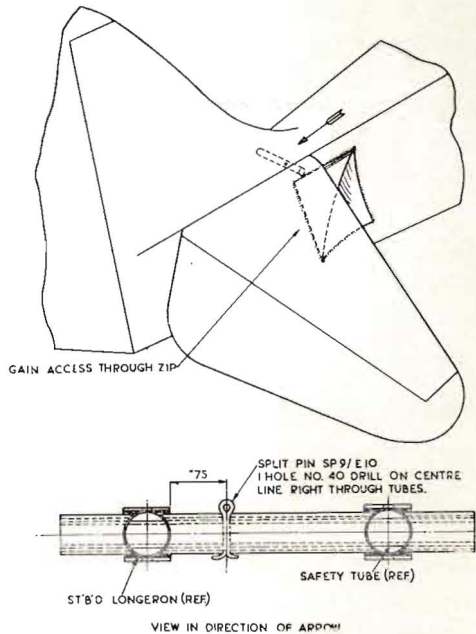
Further supplies of piano wire can be despatched immediately upon receipt or orders which should be addressed to the Service Department.

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### Modification 3234

Applicable to all Auster Types

To eliminate the possibility of the tailplane safety tube being omitted upon replacement of the tailplanes, the modification illustrated below must be embodied on or before the next C. of A.



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### DAMAGE TO LIFT STRUTS

All Auster types except Auster J5F, J5L, J5K (Trainer series).

When aircraft come into these works for repair or C. of A. renewal it has been noticed in quite a number of cases that the rear



lift struts are bowed considerably. This bowing, in our opinion, is caused through the aircraft being handled by these rear struts when on the ground. We have also seen photographs of people sitting on the struts.

It should be remembered that the maximum permissible bow is .3" over the lower portion of the strut from jury strut to fuselage attachment. In most conditions of flight these struts are in tension, when the amount of bowing is of little consequence. Owners should bear in mind, however, that the struts can sometimes be subjected to compressive loads, e.g. in down gusts, *and in these circumstances excessive bowing could lead to failure.* We would request all owners and operators to ensure that rear struts are not maltreated in any way.

We now have a scheme whereby the rear lift struts can be strengthened by inserting a steel liner through them. We strongly recommend that all owners and operators incorporate this scheme at the earliest opportunity. Anyone who is interested in having struts modified in this manner should contact the Auster Service Department for further details.

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## TECHNICAL PUBLICATIONS

### **Auster "Omnibus" Spares Schedule (Ref.: TAY/PUB/14)**

We are glad to announce that this publication, which covers the whole range of Auster Civil Aircraft, has now been entirely revised and reprinted in the form of Amendment No. 7, and is now ready for issue to all holders of the existing Spares Schedule.

It is to be regretted, however, that a considerable number of holders have, so far, failed to complete and return to us their Registration Cards (to be found in the front of every book issued). Will those who have not already done so please comply with this request as soon as possible so that all our customers may be brought up-to-date in this respect.

### **Other Auster Publications**

It will, incidentally, be noted that *all* Auster Publications are covered by Registration Cards inserted in the front of each book. If these are completed by recipients, extracted and returned to us it will ensure the automatic issue to these customers of all future amendments to whatever publication he holds.

### **Auster Civil Repair Manual**

Copies of the above publication are now available. It consists of two parts, namely Part 1 covering owner/user repairs of a minor nature and Part 2 dealing with major repairs needing special jigs, etc. Although Part 1 is not quite ready, we are not withholding issue of the manual which initially will consist of Part 1 only. The cost of the

*(Continued on page 19)*

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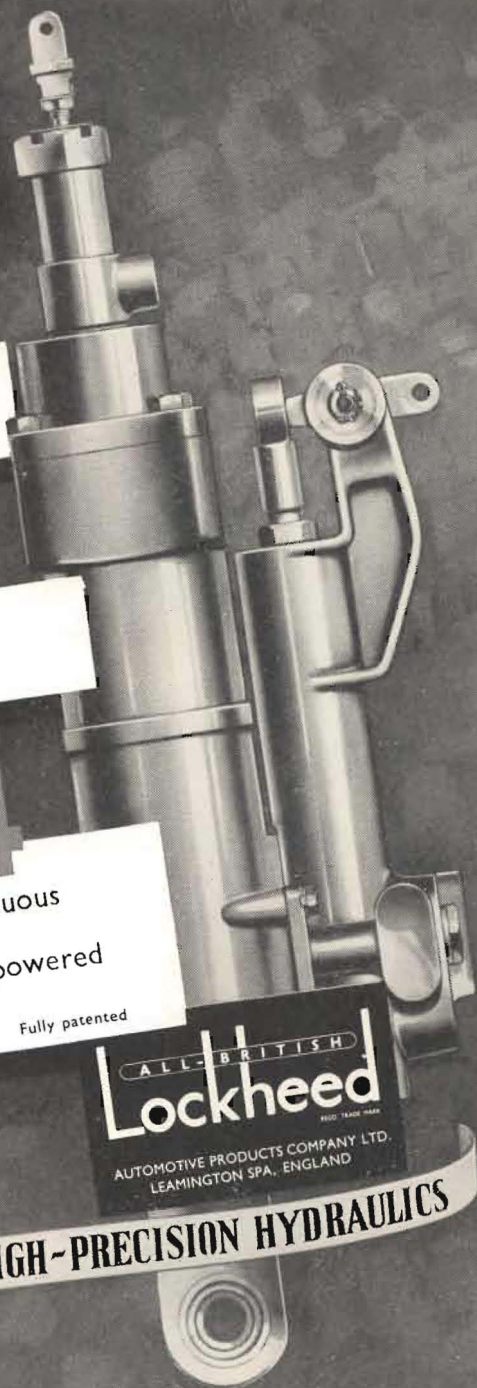
\*Regd. Trade Mark

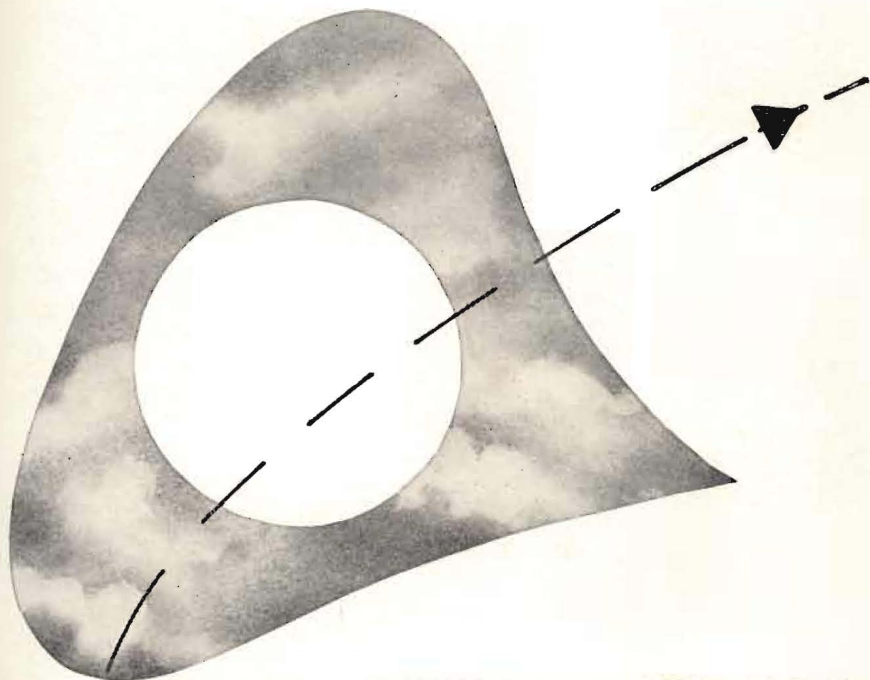
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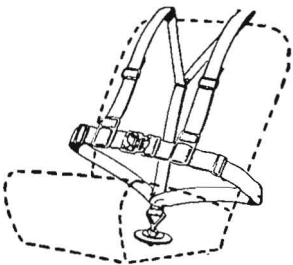
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