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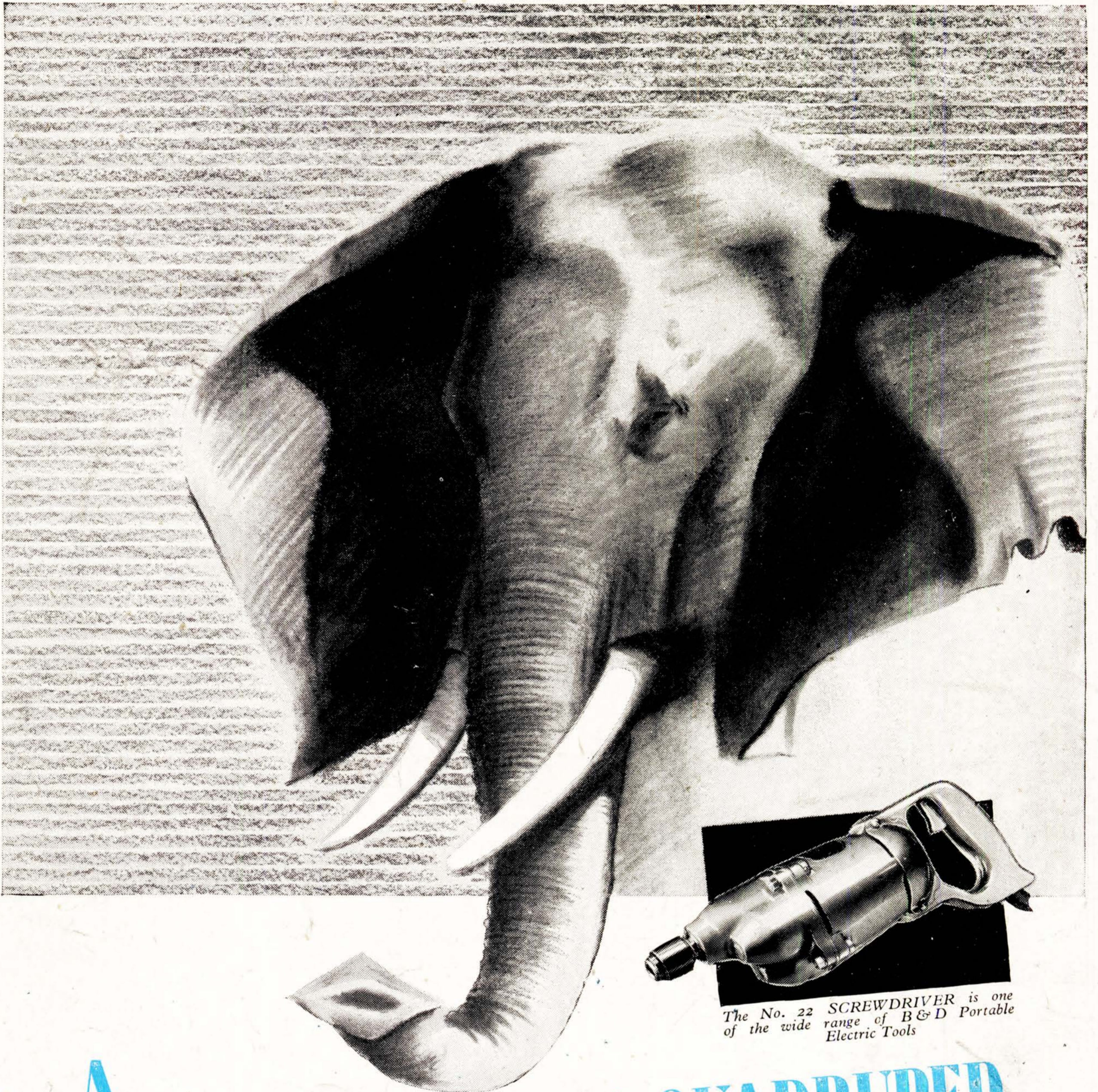
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THE CASE FOR THE ESTABLISHED AIR LINES

Last week THE AEROPLANE published an interpretation of a shipowner's views on post-War Air Transport.
This week, arguments on behalf of experienced and established air lines are given.

WHY SHOULDN'T SHIPPING COMPANIES run air lines? This is a free country and everyone should be allowed to try his hand at what he likes. The oil companies can mine for coal, the electricity supply companies can go in for gas, the brewers can market milk, the film companies can broadcast and fruit farmers can rear cattle. Oil and coal are both fuels, electricity and gas are both forms of power, beer and milk are drinks, films and radio are entertainment, and fruit and cattle production is farming; each pair must have much in common. If all this is going to happen Air Line Companies shall be allowed to operate shipping.

Before the War British shipping was far from healthy. Many people preferred to travel East by Dutch, German or Italian lines because they were better, cheaper and faster than British lines. During this War things have gone from bad to worse. We have lost a tremendous amount of shipping. In 1914 we had nearly nine times as much tonnage as the Americans; in 1939 we had only twice as much, while in 1944 the position will probably be reversed. For the first time in history Britain's mercantile marine tonnage may not be the greatest. The air lines have a world-wide organisation for passenger, mail and freight transport, and ought to be able to render yeoman service in keeping the red duster flying.

There is also room for a good deal of improvement on our railways. It is high time there was more electrification. England has only 806, out of 19,131 miles of railway electrified. Italy has 2,430, Sweden 2,241 miles of electrified railway, and America has more than either. Take a look at the trains out of Liverpool Street in London. They are hardly up to date. Apart from the pollution of the air caused by steam trains, surely the principle of blowing off energy in steam and smoke is long out-moded. The advances of science and technical achievement since Stephenson's Rocket first puffed over a hundred years ago make the present-day railway engines seem antediluvian. On June 14, 1891, the 8.0 a.m. train from Paddington arrived at Bridgwater at 1.30 p.m. To-day, 52 years later, the 9.15 a.m. train from Paddington reaches Bridgwater at 1.50 p.m. We in air transport have progressed a great deal more rapidly than that in only 20 years.

Here we come up against a difficulty. If air lines are going to run railway services it will be necessary to reverse the principles of the Railways Act, 1921, which were to eliminate competition and give the four main railways a monopoly over the territory that each served. Monopoly is a bad thing. Unless there is competition, service and progress are bound to deteriorate. There is a strong case here for the admission of healthy competition.

An air line is no more qualified to operate a shipping line than is a shipping company to operate an air line. They are entirely different industries. The difference in the commodity offered by each and the process of operation is self-evident. "The one and only common objective," as W. A. Patterson of the United Air Lines said, "is the desire for business."

Surface Transport

The following assertions of surface transport operators are self-condemnation:—

1. "To-day, when mechanical propulsion is fully established, the transition from sea-borne to air-borne vehicles involves a far less profound change of technique and outlook than did the change from sail to steam."

2. "The operation of air services by sea lines offers very substantial economies. Shipping companies with from 75 to 100 years' experience in a given trade will need no additions to their directorates to deal with the purely commercial aspects of air transport. Their freight and passenger managements and those concerned with routeing and despatching, victualling, publicity, statistics and accounts, will be performing identical functions, whether the vehicle be an aeroplane or a ship. Only in the strictly technical spheres of operation and maintenance will any new overheads be incurred. The terminals abroad will present no costly demands either of premises or local responsible management. Long-established branch offices and a network of experienced agencies will perform as

efficiently for airborne traffic the tasks which they daily perform for traffic moving by sea."

3. "If the object of air line subsidies be to assist the evolution of the aeroplane then the vast sums which the belligerents are now compelled to spend on aircraft development during the War must surely yield sufficient data to eliminate any further necessity for such subsidies on those grounds."

4. "The abolition of persistent and arbitrary subsidies must surely be a condition precedent of any confident investment of funds, whether public or private in civil aviation."

Consider the first statement. We are told that the steamship has more in common with the aeroplane than with the sailing ship. That needs no answer. As regards the second, if the commercial practice involved in operating an air line is as different from surface transport as is chalk from cheese.

The transit speed, the limited payload, the international formalities for both passengers and freight, booking and timetable procedure, quarantine restrictions, ground handling, schedule preparation, fleet application, to mention only a few points, are of a different order and require many years of study and practice to achieve efficiency. Catering for passengers in the air with a restricted weight allowance for food and equipment takes years of study to combine first-class service with limited facilities. Night-stop organisation at hotels and rest houses is a unique function of air transport.

Difficulties of Air Line Operation

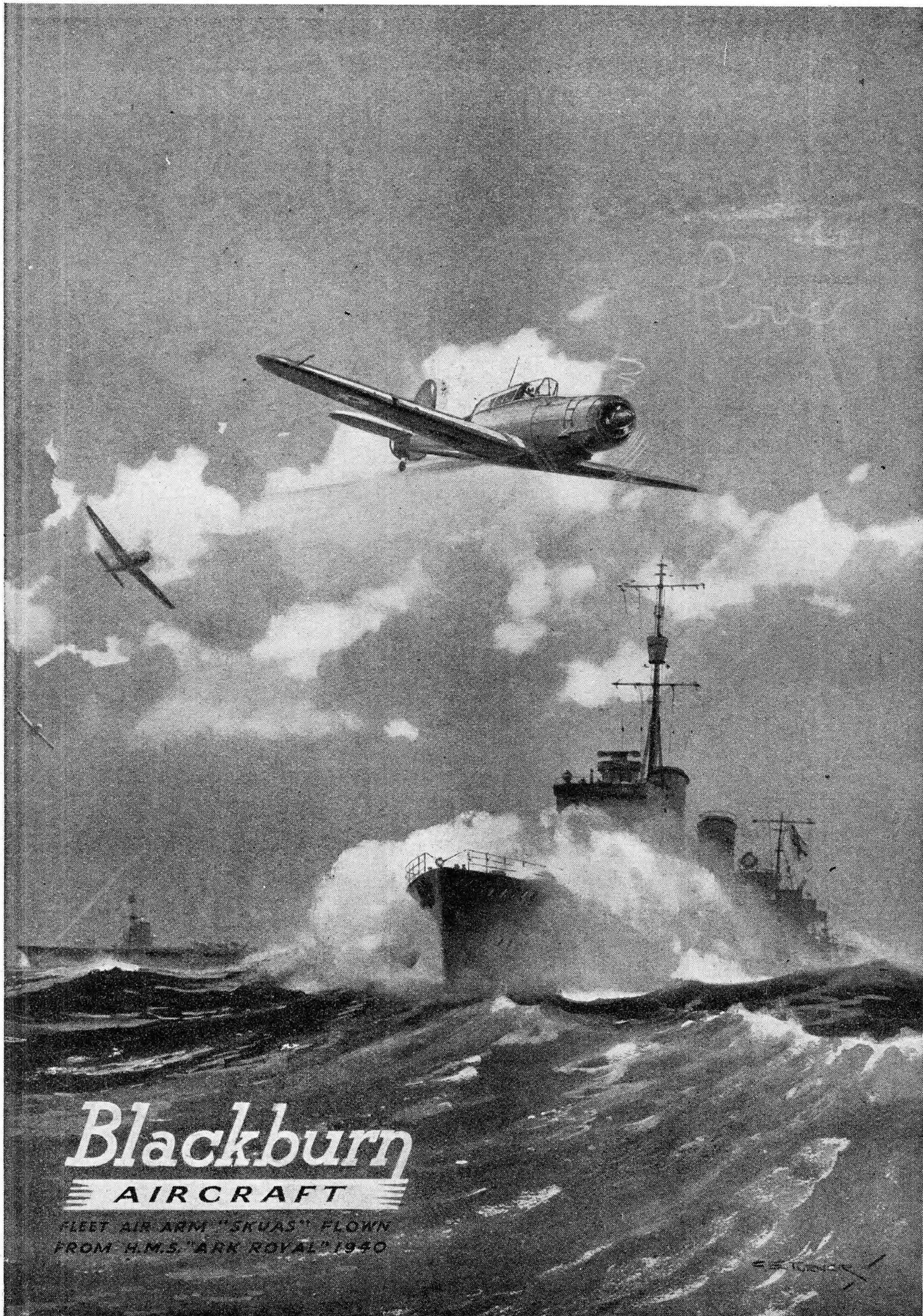
The shipowner is going to come an awful cropper if he assumes that he has only to turn his shipping men on to the commercial side of operating an air line. He would need a complete separate staff. He will make an even bigger mess of things if he thinks that the same premises, staff and management which serve his ships in the seaports can look after his air liners at the airports of the great cities. To begin with, most of the airports will be nowhere near the sea. Airport organisation is more than a whole-time job. Large airport offices are needed for the purpose.

Statements three and four can be taken together. Obviously the author of them has no knowledge of (a) the capital or the operating cost of a modern long-distance air liner and (b) of the cost of operating an overseas air service and the principle and basis of fixing subsidy, or he would not make such naïve assumptions. The progress of aeronautical technical achievement during the war has, if anything, increased costs. If he can however produce reliable figures to show that he can run our overseas air services after the War without subsidy, not only the Air Transport Industry, but the Government and the whole Nation will be profoundly grateful to him. He will have performed a miracle. The basic misconception here is due to the fact, that shipowners' only experience of subsidy consists of Government support to enable British Shipping lines to compete—that is the important word—with foreign shipping lines which were bolstered with subsidy not because they were unable to cover their costs of operation but because they wanted to undercut our rates.

If that were the reason why overseas airways were subsidised, there would indeed be no case for continuing the subsidy. But it is not the reason at all. Overseas Airways is subsidised, whether by direct subsidy or by suitably high mail payments (the difference in form is merely outward and visible), simply because otherwise they would not financially be able to function at all.

The end of this War will demand of the Nation a greater work of rehabilitation than ever before in history. Each industry will have an immense amount of work not only to regain ground in its own sphere, but also to compete with the industries of other nations. It will be a case of "each to his own task." And as indicated at the beginning of this article this will apply particularly to shipping, and railway services.

In the world of aviation inherited from this War there will be no lack of talent for building up a great British Air Transport Industry. The air is a medium essentially of its own. It has its own traditions and technique and must spread its wings unfettered by land or sea lubbers.



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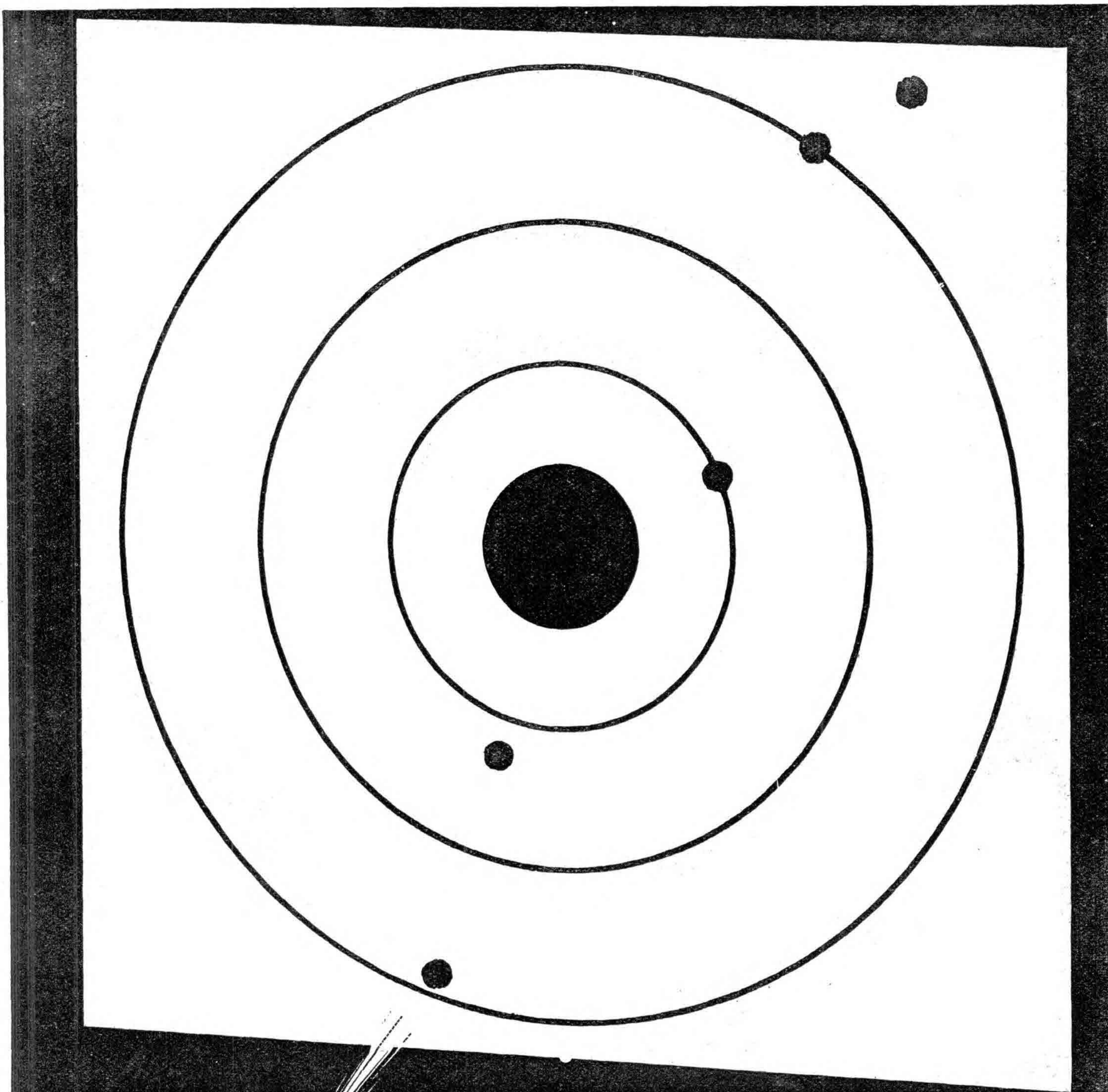
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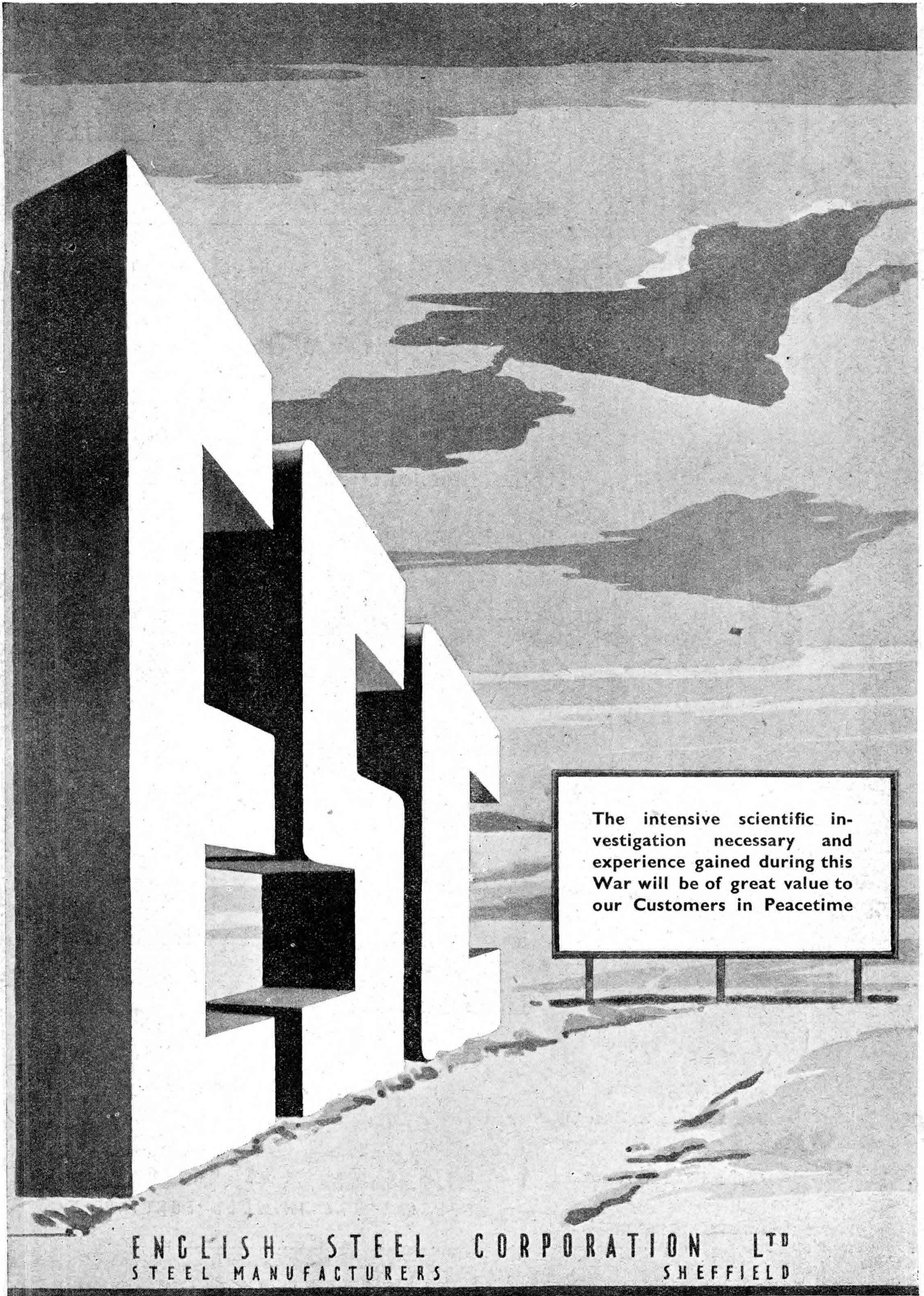
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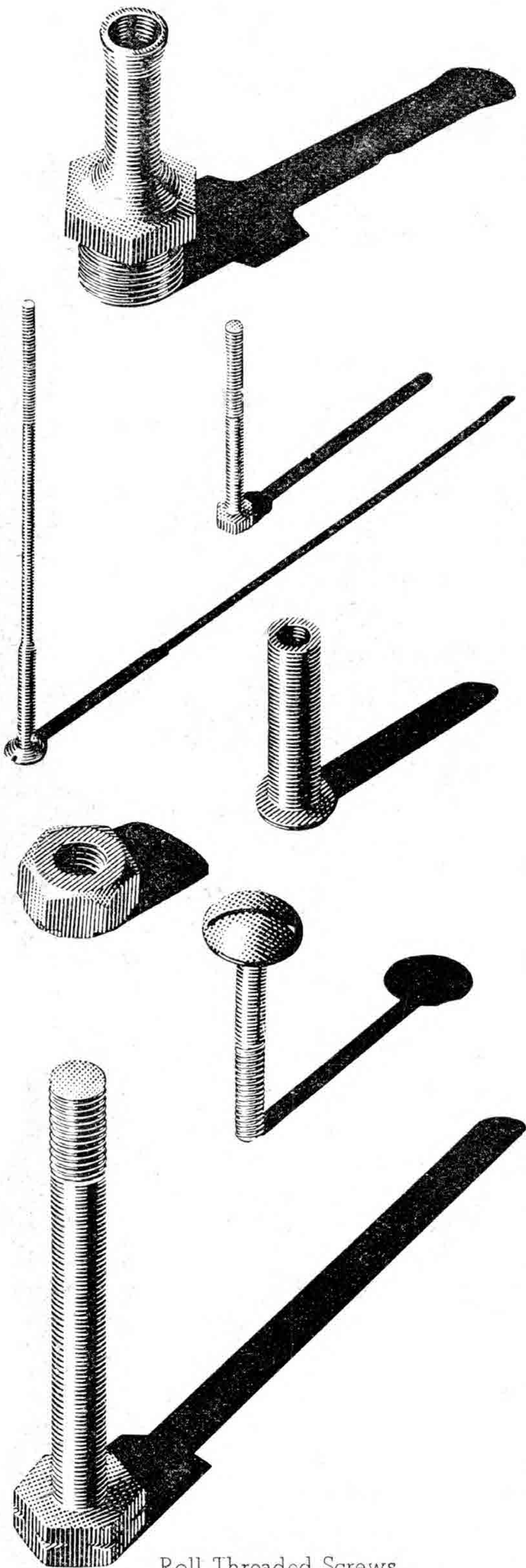
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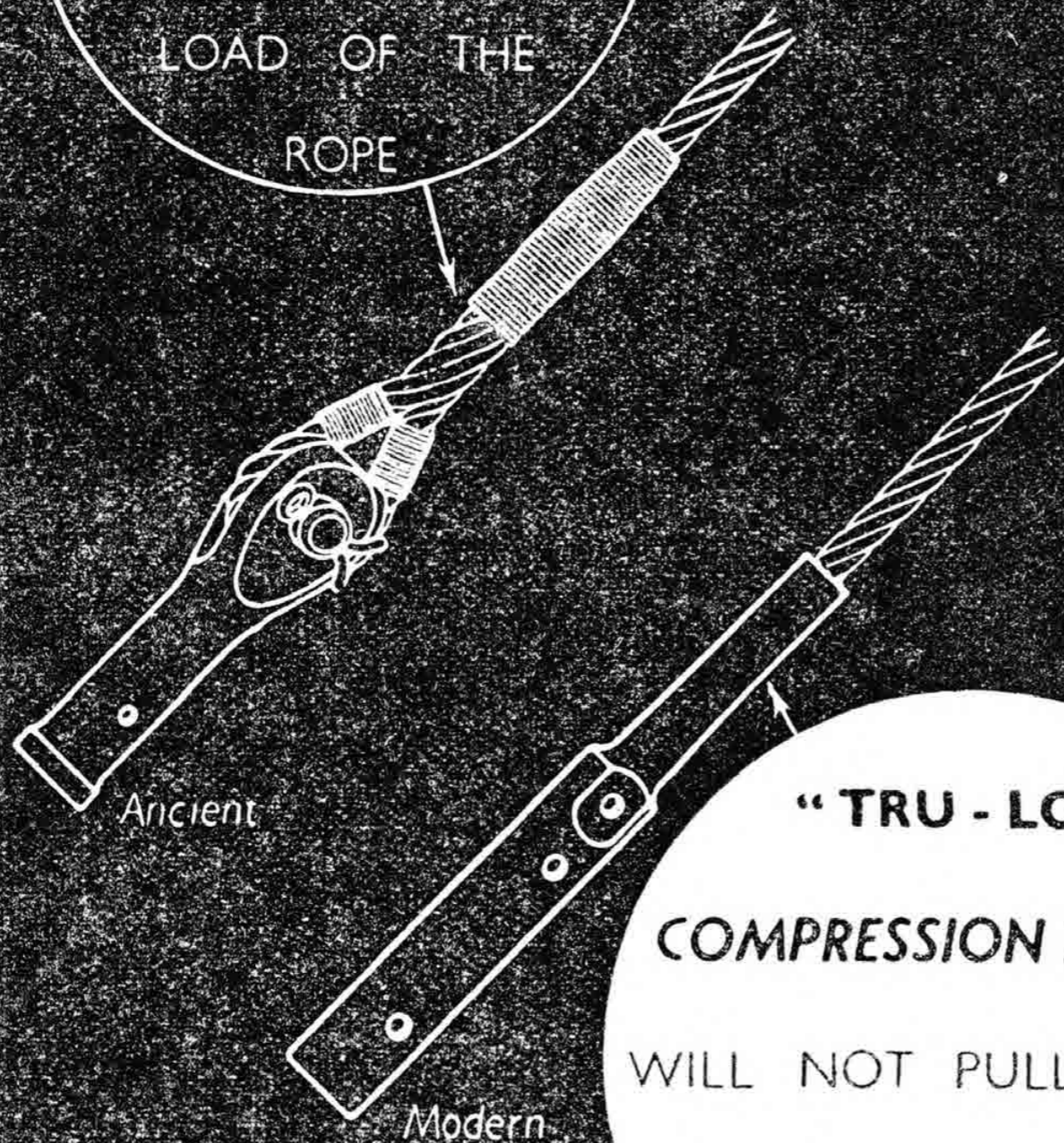
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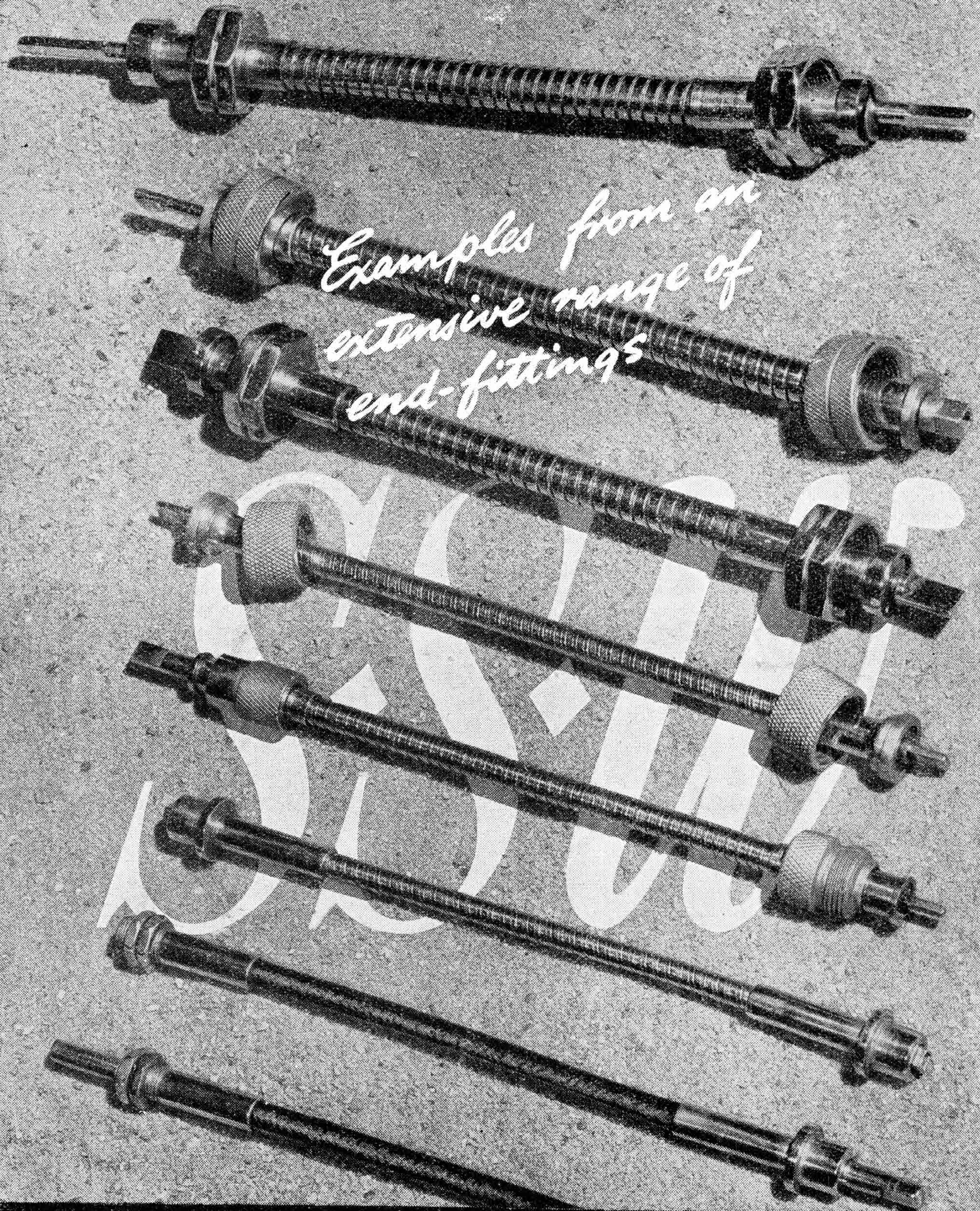
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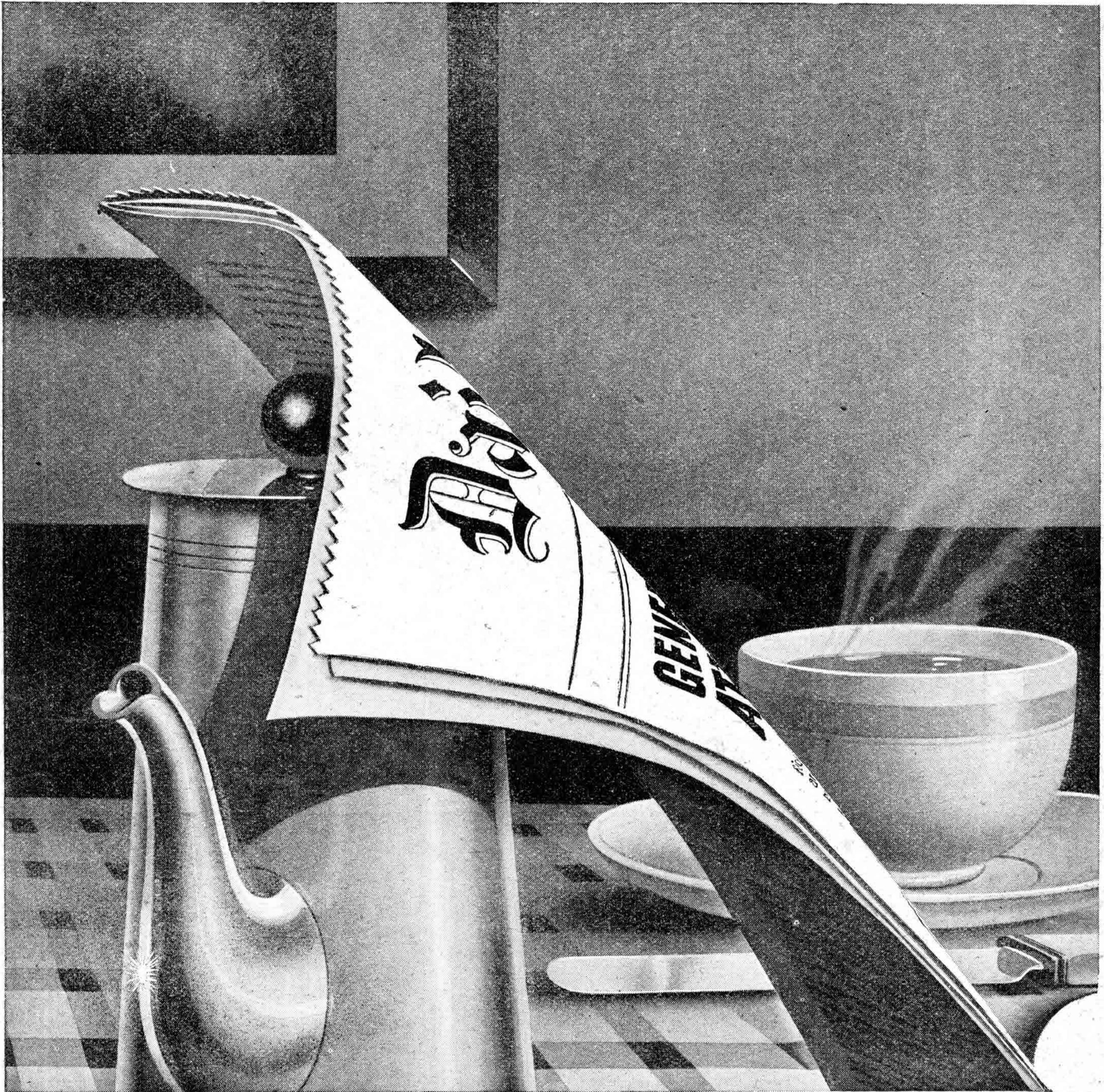
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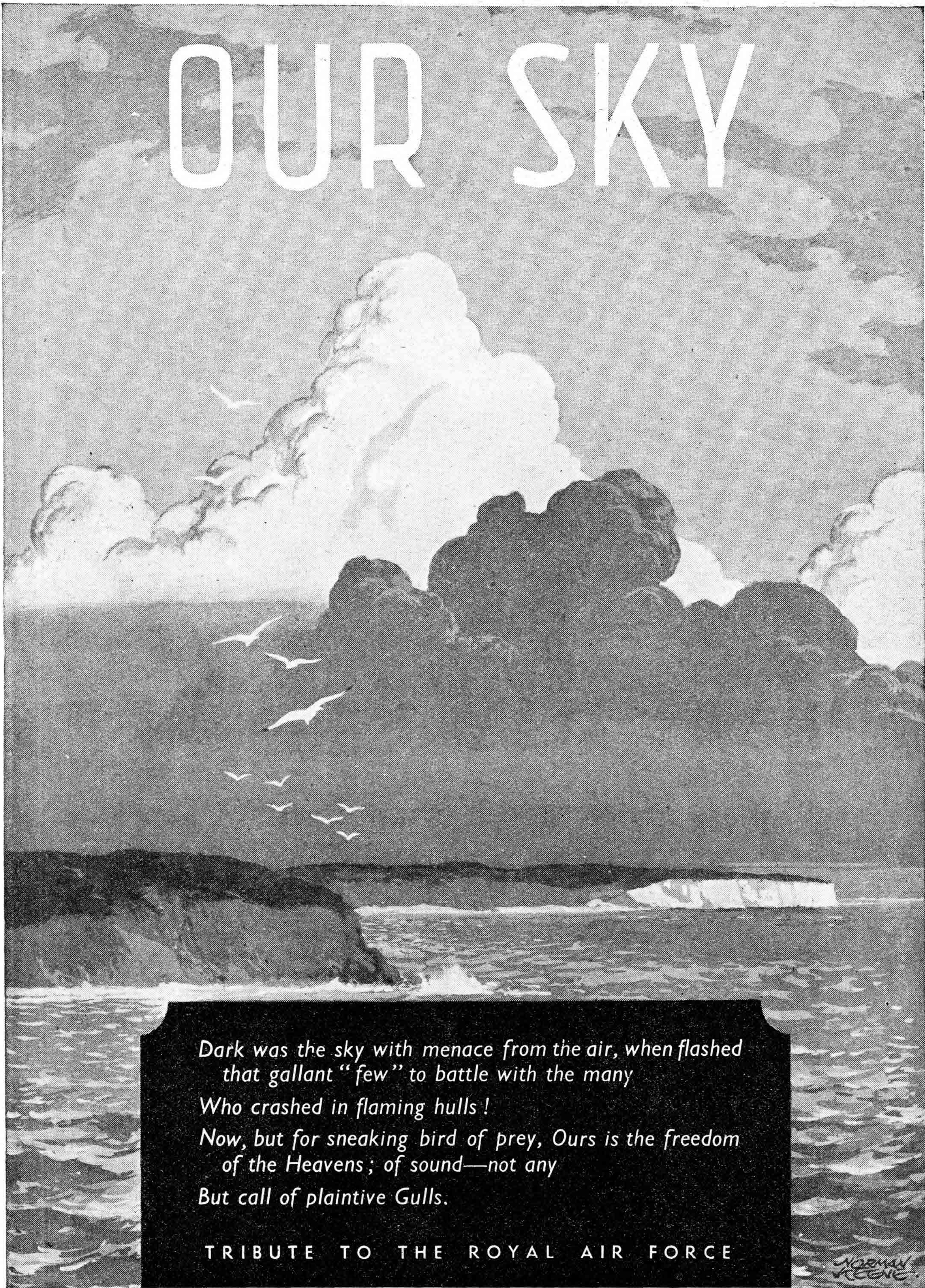
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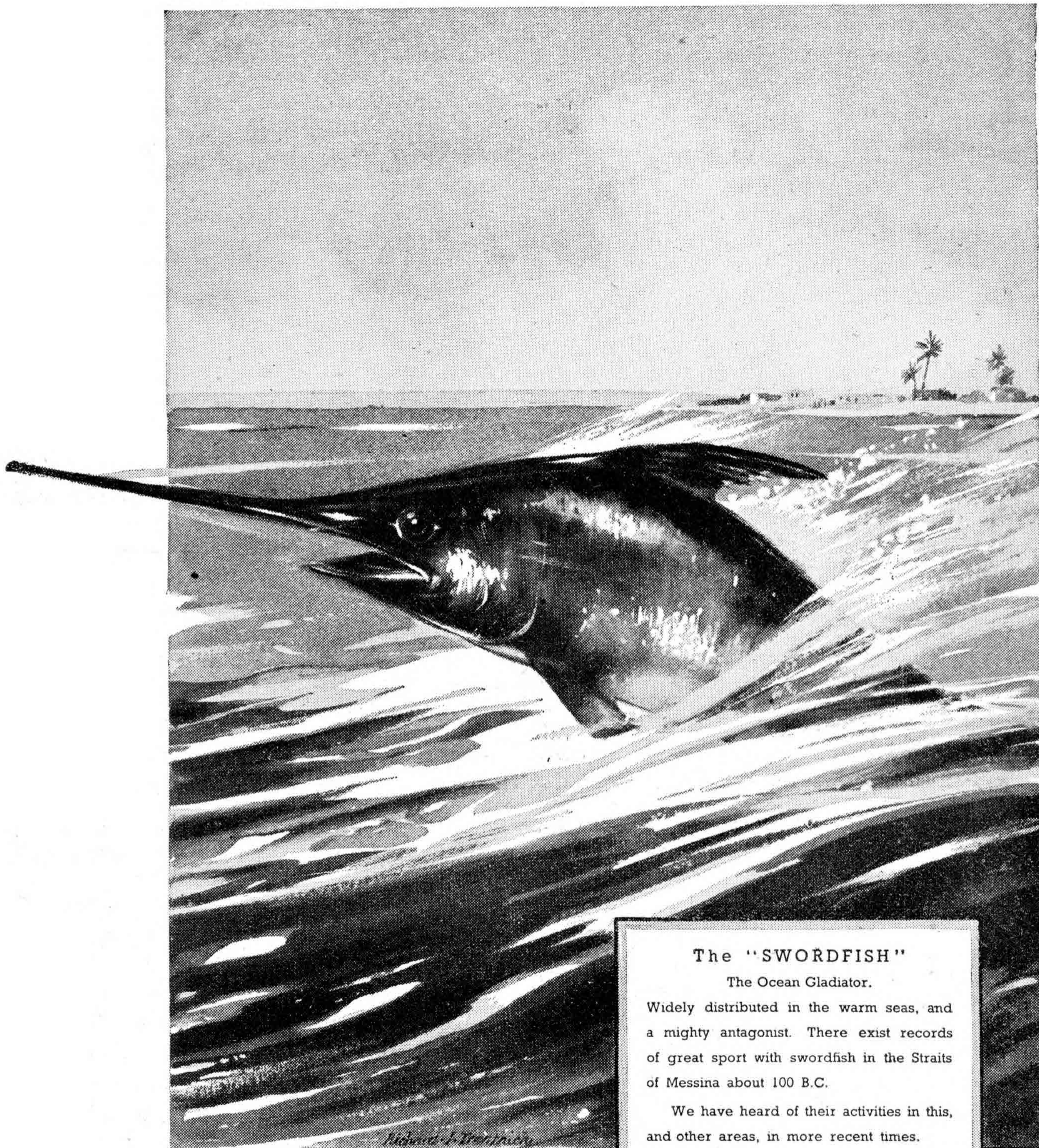
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VOL. LXV.

BOMBING POLICY

THE VAST MAJORITY of the British people are well satisfied with the present bombing policy of the Allies, but there is a small minority who are not quite happy about it. Some of the latter seem to have a prescriptive right to the deepest arm-chairs in London's Service clubs and detest anything to do with the air. War is, or was, their profession. While it was closely allied to that noble animal the horse it was an honourable calling, which had been followed by their forebears for generations. Now it has been debased by the internal-combustion engine. Sometimes our bombing policy is described as inhumane, at other times as ineffective; but invariably it is condemned.

This attitude of Colonel Blimp would matter little out for the fact that he is regarded as an expert on military affairs, and his views are sometimes quoted by others who have a genuine horror of war. They feel that if war is unavoidable it should be confined to the armed forces, and that the slaughter of civilians and the destruction of their cities by air attack cannot be justified. There must be much sympathy for this view, but war to-day is not fought between armed forces but between nations.

Distinction between armed forces and civilians in modern war is well-nigh impossible. Men who work in the mines, at the docks, or on the railways are only allowed to do so because there they are of more value to the Nation's war effort than they would be in one of the armed forces. Nor is it possible to differentiate between men and women. Members of the A.T.S. whose duty is to man anti-aircraft guns, and of the W.A.A.F. who provide a large proportion of our Radar (the agreed Allied word for radio location) operators, must be considered combatants. But their sisters who work as porters on the railways or as bus conductresses are pulling their weight just as much. The whole population, male and female, is required to help the Nation's war effort. Government policy here and in Germany is to remove children and others who cannot help the war effort from towns which are liable to attack from the air.

Books have been written in attempts to define, without much success, what should be considered a legitimate target for air attack. A factory producing munitions is clearly a legitimate target, and so must be a railway or other means of communication which bring the raw material to the factory and take away the finished product. The power, light and water supplies of the factory must come in the same category. Factories are seldom situated in open country, but are usually surrounded by the dwellings of the workers. Since the aim of air attack is to reduce the output of the fac-

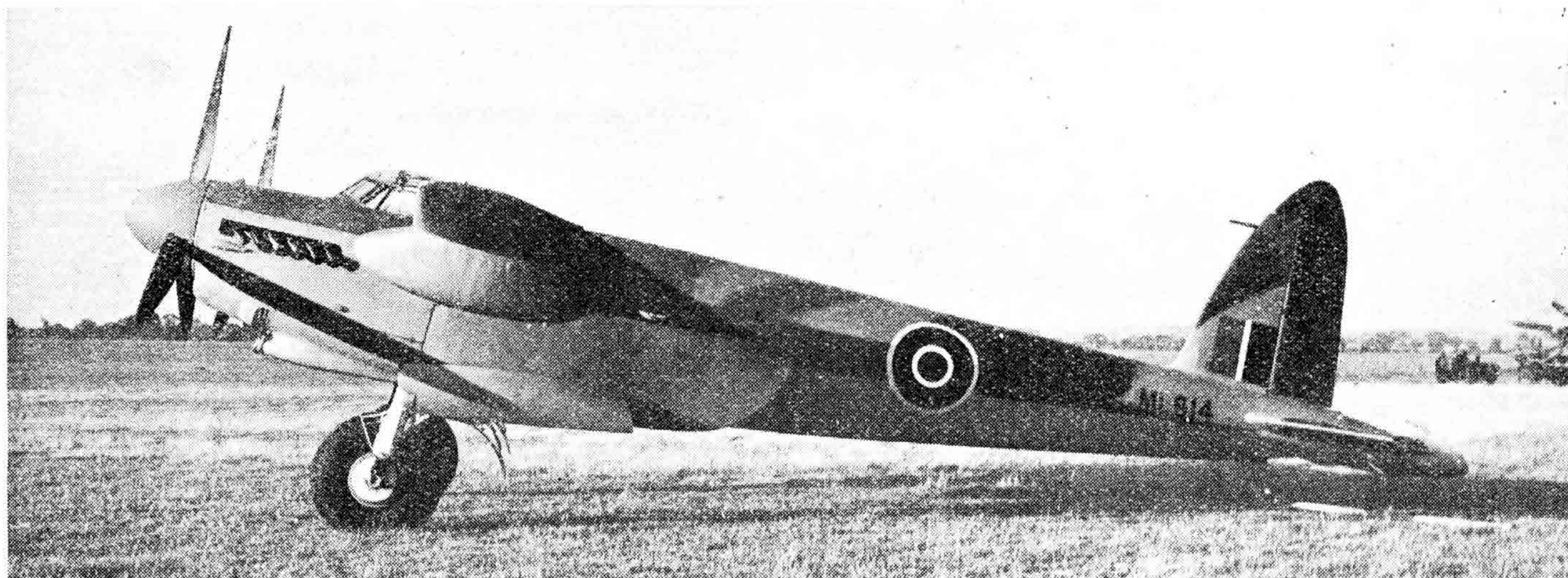
tories, it is obviously an advantage to damage these dwellings and to drive the workers farther away from their work, at the same time destroying their means of access to the factories. This is the intention in "area" bombing. Moreover, the production of weapons is not confined to large factories, but is dispersed throughout the industrial cities. There is scarcely a bicycle shop or garage in any of Germany's industrial cities which is not turning out some component part for an aeroplane or military vehicle. Industrial cities are, in fact, military arsenals and legitimate targets for air attack.

The man power of a nation at war can be divided into three classes—the armed forces, those who make the weapons, and those who provide the necessities of life. It is possible to augment one class only by drawing on the others, and in Germany the third class has been reduced to the bare minimum. War production is curtailed if the factory worker has to stop turning out weapons to repair his factory. The same is true of other damage to cities. Men must be drawn from factories or the armed forces to repair the damage. If the essential services of a city are damaged and such things as the distribution of food made more difficult, the output of its industry must be reduced until the amenities of life have been restored.

It has been said, rather loosely, that we intend to destroy each of the German cities in turn, but that will not be necessary. We need only reduce the output of munitions of war down to a level at which, even if the enemy still has the will to fight, he will not have the means to do so. Good progress is being made. About half the big German cities have been severely damaged and 17 have become a liability rather than an asset to war production. In acreage of devastated housing and other property Hamburg has suffered the equivalent of 60 Coventrys. Cologne 17, Düsseldorf 12, Essen 10, and several others have been damaged 7, 8 or 9 times as badly as Coventry. Damage to acreage is not the aim, but gives an idea of the reduction in war output which must already have been inflicted.

German propaganda describes our "area" bombing as "terror" bombing. This may have been the aim of the German air attack on this country, but we know that it failed to terrorise the British people and we are not so foolish as to waste effort in a similar attempt. Göbbels has also spoken of reprisals and has boasted that the Luftwaffe has carried them out. Reprisals are a stupid waste of military effort. The Allied bombing policy is working to a definite military plan to reduce the enemy's production of weapons of war, so that he will have grave difficulty in opposing our armed forces at sea, on land or in the air.

MATTERS OF MOMENT



CAMERA PLATFORM.—A de Havilland Mosquito of the type now used, among other duties, for photographic reconnaissance.

Sir Archibald Sinclair and the R.A.F.

SIR ARCHIBALD SINCLAIR, His Majesty's Secretary of State for Air, speaking at Cheltenham on Nov. 5, gave some details of the Royal Air Force's performance during the War.

He first of all praised the crews who have flown aircraft across the Atlantic. "In the 12 months ending Sept. 30 last," he said, "more than 99 per cent. of all the aircraft despatched from the American Continent reached these shores in safety." He mentioned also the scientists who have laboured with tireless energy to provide our airmen with improved aircraft and secret devices to frustrate the enemy. He told the story of a gallant doctor who, to test an emergency oxygen equipment, threw himself out of an aeroplane from over 30,000 ft.

Sir Archibald praised the work of the A.T.C. and emphasised that it must be fostered, helped and encouraged. Turning to the growth of the R.A.F., he said "it was at the beginning of the War about one quarter of the aircraft strength of the Luftwaffe. At the present time," he went on to say, "the Metropolitan Air Force, that is Bomber, Fighter and Coastal Command, is now more than four times as great as in the Summer of 1940 and the number of hours flown per month has increased since the start of the War by over 500 per cent." The Secretary of State for Air then praised the work of Fighter Command. "In September of 1940—at the height of the Battle of Britain," he told his audience, "Fighter Command made 19,760 sorties, all of them defensive. In September, 1943, Fighter Command and the Tactical Air Force made over 20,000 sorties, more than three-quarters of which were offensive."

Sir Archibald Sinclair mentioned the sneak raiders which have appeared during the last few months over Great Britain. "The Germans are now using," he said, "a new type of twin-engined Fighter Bomber—the Me 410—whose performance, armament and bomb load is something comparable to our own Mosquito." He went on to explain that from the French coast to Westminster Bridge is only 85 miles and an aeroplane travelling at 320 m.p.h. can cover this distance in 16 minutes, which gives our defences scanty warning.

There was no need to be depressed, he went on. "During October, of the enemy aircraft operating over this country at night, more than 6 per cent. were shot down. That figure is substantially more than the rate of loss suffered by our own heavy bombers in their devastating, far-ranging and accurately-directed attacks on Germany. Contrast it, too, with the harassing attacks by our own Mosquitoes in October—flying perhaps for three hours through the heavy defences of enemy territory they lost under 2 per cent."

After praising the brilliant performances of Coastal Command, which "are magnificent achievements which shatter Mr. Hitler's brightest hopes of winning the War," the speaker gave some figures to demonstrate the damage being caused by Bomber Command. "Five per cent. of Coventry was destroyed in the German attacks of 1940," he explained. "Forty per cent. of Essen has been virtually destroyed, 54 per cent. of Cologne, and 74 per cent. of Hamburg."

Speaking of Great Britain's Second Front, at present so active over Western Europe, the Secretary of State said: "In the critical battles of the Russian Front what would not

the German Commander-in-Chief give for some of the fighters, some of the guns and some of the men which have had to be withdrawn to defend the West? Two-thirds of the fighter strength of the Luftwaffe is facing West against the intrepid crews of the British and United States Bomber Commands." He disclosed that the Germans themselves had announced that the number of people bombed out and evacuated is almost seven millions.

The Polish Air Force Silver Jubilee

NOV. 5 marked the 25th Anniversary of the day when the first Polish-manned aeroplane took off from a captured Austrian aerodrome at Lwow during the Great War.

At a Press Conference in London, Lieut. General Kutiel, Polish Minister of National Defence, and Squadron Leader Skalski, the ace fighter pilot, gave a brief history of the Air Force and the magnificent work of Polish pilots.

The work of Polish airmen in the present War may be divided into three periods: the brief but terrible Polish campaign of Sept., 1939, the fighting in France and, finally, the glorious work they have done in company with their comrades of the R.A.F. since they arrived in this country.

During the first few years of Poland's regained independence, after Nov. 11, 1918, her Air Force had to purchase its machines and equipment abroad. Later, a national Aircraft Industry was set up and developed, gradually replacing imported machines with those produced in the country. By 1937, a number of superior types had been designed. Unfortunately, the latest types of Polish military aircraft were not in quantity production on the outbreak of this War, and those which Poland was able to throw into battle were inferior to the Luftwaffe in armament and speed as well as in numbers. Germany's sudden attack on Poland, without a declaration of war, was first directed against her Air Force and a considerable number of aircraft was destroyed on the ground.

In comparison with 3,000 first-line machines employed by the Luftwaffe, Poland had, at the outbreak of war, only 421 aircraft, of which a mere 36 were modern "Los" bombers. For all that, the Germans, according to their own figures, lost 430 aeroplanes during the Polish campaign. Polish losses in actual air combats amounted to 97 aircraft. At the end of Sept., 1939, the major part of the Polish Air Force received orders to cross over into Roumania and Hungary. The remaining serviceable aircraft were also evacuated to Roumania, but were requisitioned immediately on landing by the local authorities.

Simultaneously with plans for the re-creation of Poland's fighting forces abroad, arrangements were made to rebuild the Polish Air Force. This scheme provided for the formation of Polish bomber squadrons in Great Britain and the fighter squadrons were to be re-equipped and employed in France. This scheme was upset by the fall of France, but during the French campaign Polish fighter pilots achieved 56 victories for a loss of 15 aircraft.

During the Battle of Britain, Polish fighter pilots, at the side of their R.A.F. colleagues, performed magnificent work, their record for the Battle being 220 German aircraft destroyed, 45 probables and 32 damaged. The Polish "303" Squadron alone accounted for 123 Germans.

Polish bomber squadrons have participated in raids on 60 cities in Germany and German-occupied Europe; the night-

fighter squadron has destroyed 24 German bombers, probably destroyed seven others and damaged 16. Fighting side by side for over three years, British and Polish airmen have become fast friends and have set an example in international co-operation.

The Air League

THE VIEWS of the Air League of the British Empire with regard to post-War Air Transport were expressed by the President, the Duke of Sutherland, at a lunch given for Empire Press representatives in London on Tuesday, Nov. 2.

After a résumé of the work of the Air League since its inception in 1909, the Duke said that the Air League believed it could be "helpful to the Press of the Dominions in providing information by which policies may be tested and in mobilising public interest behind programmes of development which shall have vision as well as a true appreciation of the needs of the moment." He continued: "During the past four years the Empire has learned the importance of Air Power in international affairs. . . . Commercial Air Transport should gain in the long run from the interruption the War has imposed on it."

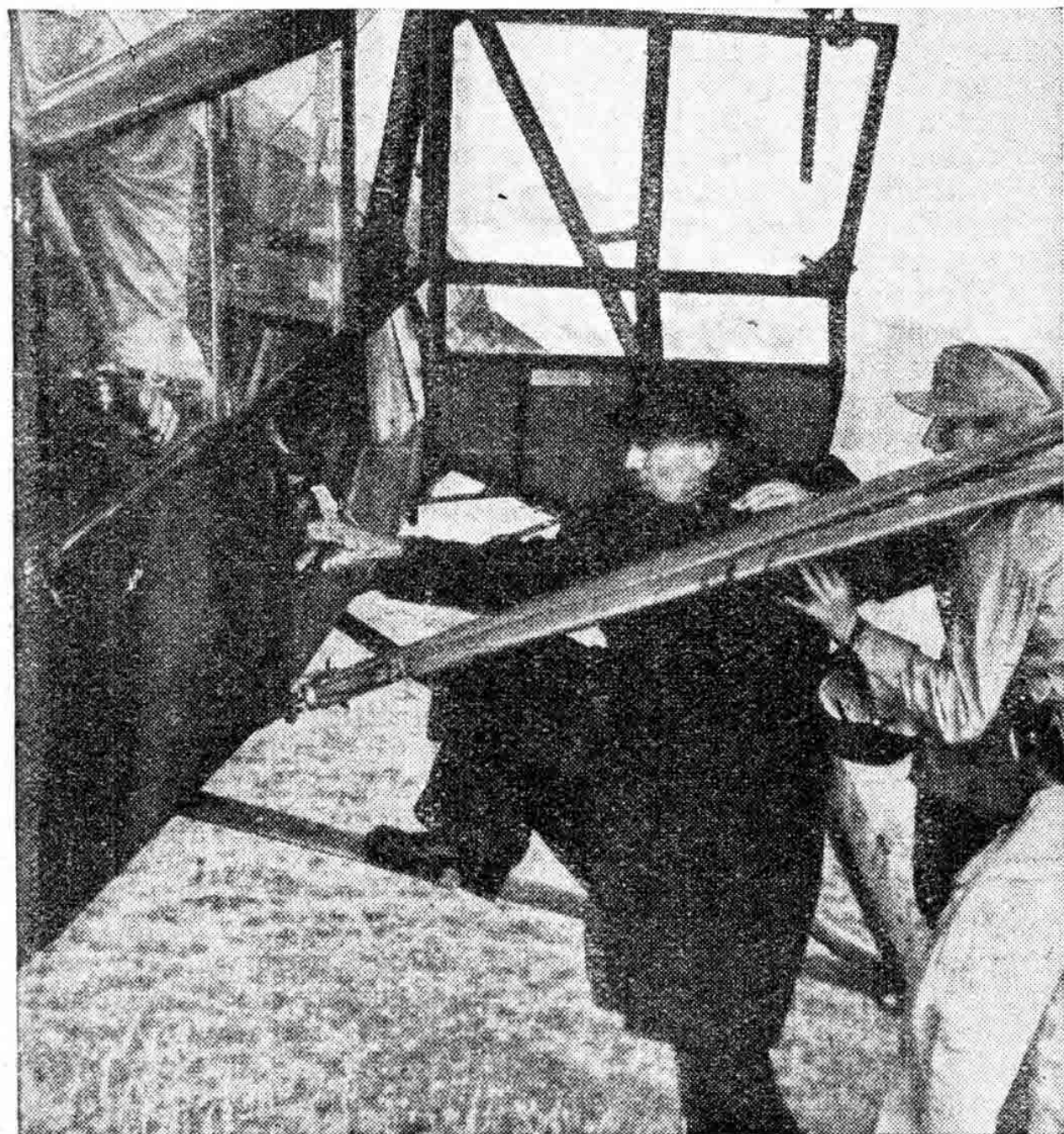
"We want to see the British Empire leading the way in the creation of air services that will bind us British closer to each other and to the great peoples who have become our friends in this fight for our lives. . . . There is an enormous difference between the organisation and operation of transport services in war and the running of truly commercial services in peace. . . . We hope to discover soon a firm resolution to provide for the Empire and for the external commerce which the Empire must have, a set of services calculated to meet competition no matter where that competition may come from. If we accept the ideal of freedom of passage for the aircraft of the nations, we have to accept the prospect of competition. And although that competition may not express itself in cut rates it may well yield a return in the form of revenue to the lines which, by offering the best service, can attract most traffic."

"We would not presume to tell the Dominions how they should organise their own air services. . . . But we do know that, so long as the Empire remains an association of nations, the health of Air Transport will depend largely on the enterprise, strength, inspiration and collaboration which are communicated from Great Britain."

"The Air League advocates the provision of efficient airports with meteorological information, radio location and facilities for landing all aircraft at moderate charges. It also advocates the allocation of air mail contracts equally to all British and Dominion Air Lines at rates which will be remunerative to such Air Lines."

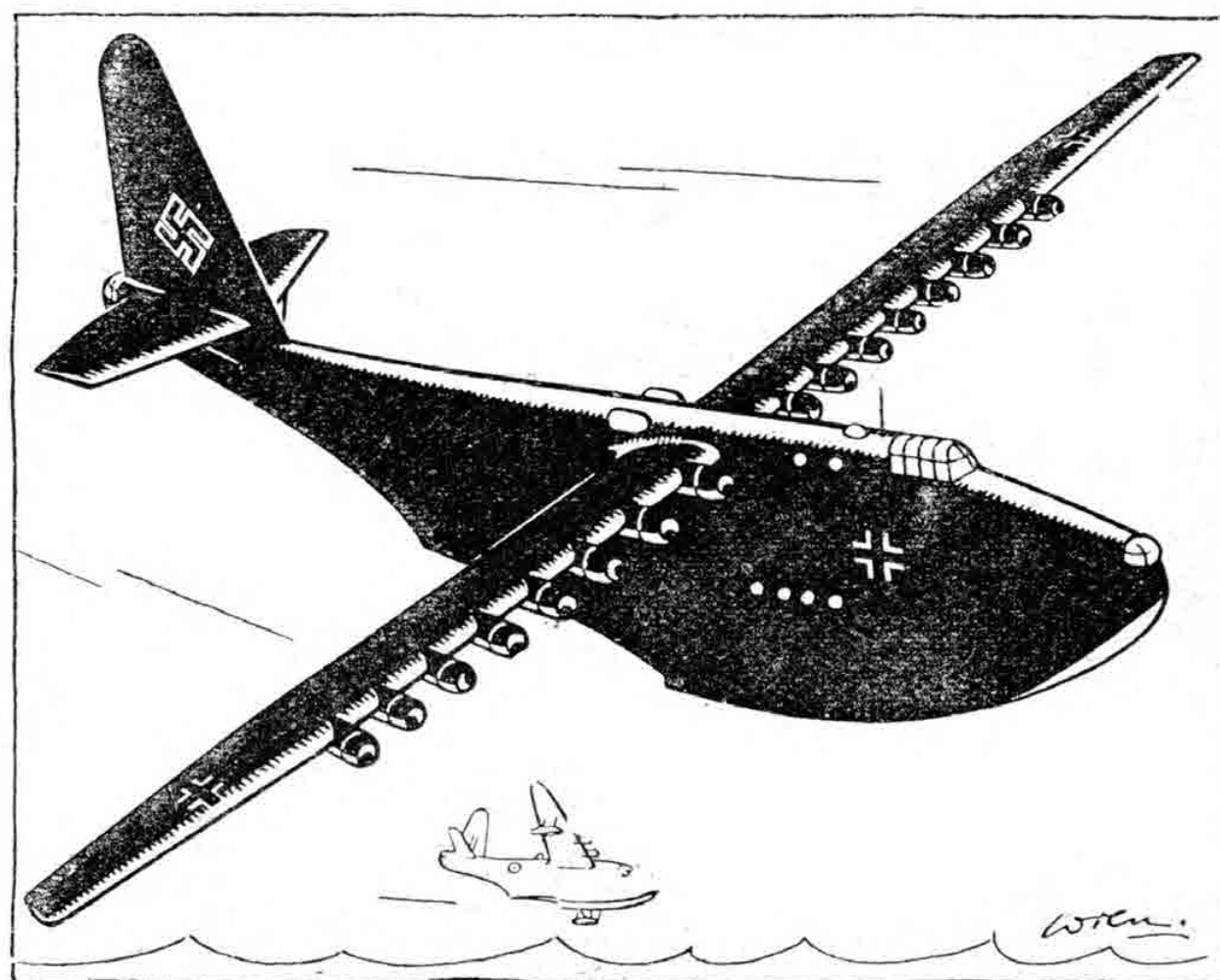
"The Air League also believes that the great established Shipping Companies of the Empire should have an opportunity of taking their share in establishing air lines for that section of their passengers and freight that prefer to make use of that means of transport."

A reply to the toast of "The Empire Press," proposed by the Duke, was given by Mr. M. E. Grant, of South Africa.



A VISIT FROM THE STORK.—Benito Mussolini is assisted into the Fieseler Fi156K Storch which "rescued" him from his hotel prison. The rescue was organised by General Student, of Flieger Korps XI.

ODDENTIFICATION CXXXVI



"Aeroplane" Copyright.

Not distant far with heavy pace the foe
Approaching gross and huge, in hollow cube
Which to our eyes discover'd, new and strange,
Two triple-mounted rows of engines laid
On wings (for like to engines most they seem'd,
Embawling with outrageous noise the air),
The flying-boat and transport of R. Vogt,
The Hun "Short" Blohm and Voss two-double-two.
(After Milton)

Air Commodore Helmore

GROUP CAPTAIN W. HELMORE, C.B.E., M.P., R.A.F.V.R., has been granted an honorary commission with the rank of Air Commodore. At present he occupies an important position at the Ministry of Aircraft Production.

Air Commodore Helmore has been acting as a technical adviser at the Ministry of Aircraft Production for some time and was Assistant Scientific Adviser to the Chief of the Air Staff from the outbreak of the War. He is the inventor of a number of war weapons and technical devices which are in use throughout the R.A.F., including a special flame trap for preventing fires in the air. He is an expert on organic chemistry and played a leading part in the development of searchlights carried in aircraft; as early as Feb., 1941, he tested one of these in the air.

He was largely responsible for the development of the Leigh Light used by Coastal Command which was described in THE AEROPLANE of Oct. 10.

The new Air Commodore is a Doctor of Philosophy and a Master of Science. He is a member of Lord Brabazon's Committee which is advising the Government about the future civil aircraft.

The Secretary of State for Air and the A.T.C.

SIR ARCHIBALD SINCLAIR, in answer to a question in the House of Commons, on Nov. 3, gave the information that up to the end of September, 1943, about 72,000 A.T.C. Cadets attested for service with the R.A.F. Some 55,000 of these have taken up duty. During the same period about 13,000 cadets left the Corps to join the Royal Navy, including the Fleet Air Arm and Merchant Navy.

In answer to a further question as to whether the A.T.C. would continue after the War, Sir Archibald replied, "It would not be proper for me to give such an assurance, but I hope it will."

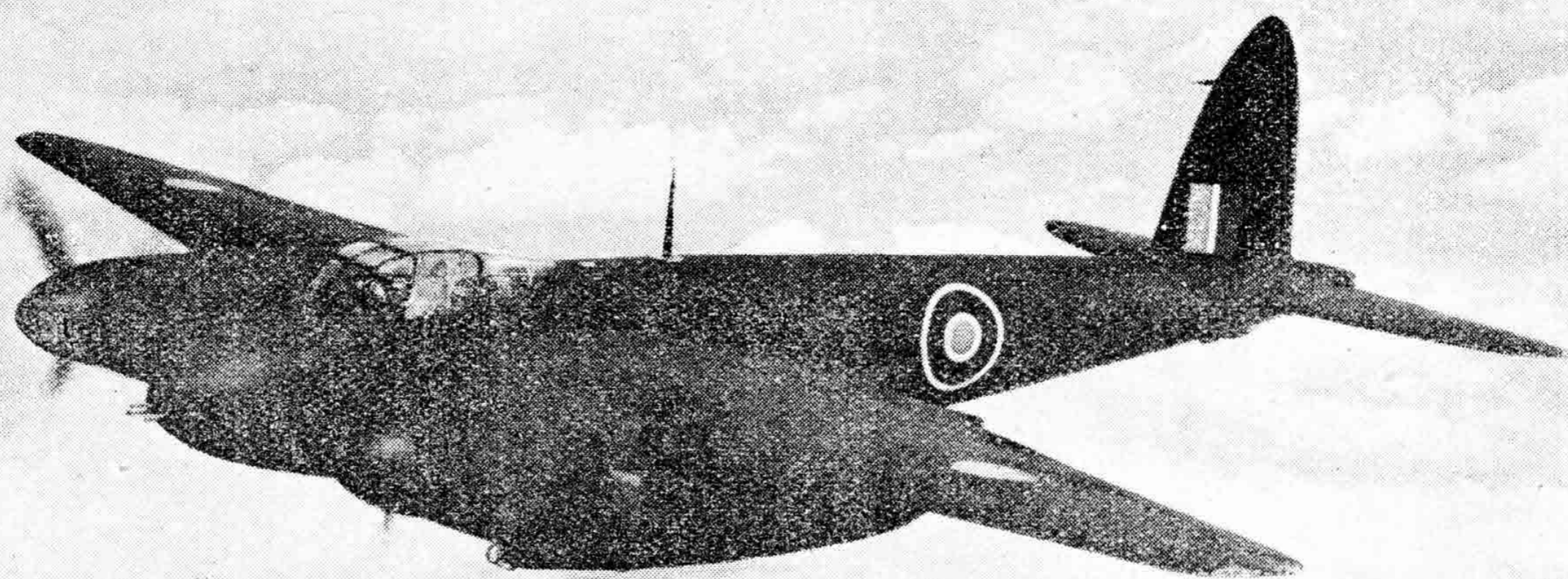
R.A.F. Pathfinder Flares

PATHFINDER FLARES, used by Bomber Command, are making bomb aimers independent of the weather. They are dropped from aircraft which fly over the target before the bombers arrive. These flares have been improved so that their glare over the target can be seen by the bombers' crew through fairly thick clouds.

A York on the Atlantic Run

RECENTLY an Avro York carried 50 passengers from Great Britain to Canada. The aeroplane was inspected at Ottawa by the Governor-General and leading officials of Canadian Civil Aviation. No other trans-Atlantic flights by Yorks have been reported.

THE WAR IN THE AIR



NIGHT FIGHTER.—de Havilland Mosquito II two-seat fighters, powered with Rolls-Royce Merlin 21 liquid-cooled upright-vee in-line motors, have been in operational service with R.A.F. Fighter Command for some time past. Already they have a considerable bag of victories, particularly against German high-speed nuisance night raiders.

LAST WEEK, the German people were given an excellent sample of what they will receive when a spell of reasonable flying weather comes along. Those addicted to the issue of Grave Warnings frequently tell us how toughly the Germans will fight when at last they are forced to defend their own frontiers.

By that time, with the steady rise in the rate of destruction achieved by British and American bombers, it seems likely that there will not be much left inside those frontiers to defend.

Towards the end of the week, the spotlight turned upon Turkey and Cairo, where Mr. Anthony Eden, on his way home from the Moscow Conference, met the Turkish Foreign Minister, M. Menemjoglu. Turkey has been a good friend to us in this War and her unswerving neutrality of greater value to the Allied cause than active participation.

German officialdom has been kind enough to suggest that the Turks may lend us aerodromes for the duration of the War, just as Portugal has provided them in the Azores. It is obvious that bomber bases in European Turkey would be of immense value at the moment, for Rumania could be reached from them as quickly as Western Germany from this country. Turkey's position is, nevertheless, very different from that of Portugal, and any such move would almost unquestionably involve her in the war on land.

The week ended on a note of justifiable optimism. The tremendous happenings in Russia, the sudden acceleration of our hitherto slow and difficult progress in Italy, hopes engendered by the Eden-Menemjoglu meeting and confirmation of the destruction caused by Allied night and day bombing of Germany, all contributed to this. It is a poor heart that never rejoices. We are well aware that Germany is still immensely powerful; if not, we ought to be, in view of the number of times per week that the fact is impressed upon us by official or semi-official spokesmen, but we can see Germany's power, and in particular her Air Power, melting before our eyes.

The fall of Kiev, announced on Saturday, was followed by Premier Stalin's remarkable pronouncement that Hitlerite Germany and her vassals see catastrophe staring them in the face—all of which did nothing to damp the general feeling of cheerfulness.

Northern Europe

Air reconnaissance over Germany on Monday, Nov. 1, showed Kassel was still burning, eight days after Bomber Command's great raid. Vast fires had evidently raged

unchecked through the industrial section of the city and industry in general appeared to be at a standstill. Amongst many specialised plants which made Kassel of outstanding value to the German war effort, the Henschel locomotive works was the most important. Said to be the largest establishment of its kind in Europe, the Henschel factory comprised three main factories, all of which were patterned by heavy bombs with most satisfactory results.

Two important engineering concerns building railway rolling stock, a big oil refinery, and other factories making precision instruments or small machinery were either completely destroyed or heavily damaged. Railway destruction was serious. The main passenger station and a large goods station received direct hits, while an important railway repair workshop was almost wiped out. The textile industry, for which Kassel has long been famous, also suffered severely.

Weak attacks on this country continue and Mosquito night fighters have increased their successes. The Luftwaffe's attempt to reduce its night-bombing losses by employing Me 410s has been countered by the Mosquito, a formidable machine for this purpose. Here are a few extracts from the combat reports of pilots in the Mosquito night-fighter squadrons:—A squadron leader reported that "The German saw us at the same time that we saw him and he took violent evasive action. I closed to 150 yards and my first burst set his starboard engine on fire. A second burst sent him down in flames." A Wing Commander said: "The enemy took no evasive action, apparently relying on speed. I closed the range and gave a two seconds burst. There was a vivid explosion, and flaming pieces flew off. He went down vertically." A Flying Officer reported: "I gave the enemy a burst at 50 yards. He blew up in flames and fell into the sea still burning."

On Wednesday, Nov. 3, in daylight, the strongest formation of American bombers ever sent out made a heavy attack on Wilhelmshaven, which was followed up at night by Bomber Command of the R.A.F.

British and American bombers gave Germany the heaviest plastering of the War. Well over 4,000 tons of bombs were dropped in a period of 24 hours. Düsseldorf was the main target of Bomber Command with diversionary raids on Cologne and other centres, and in daylight an enormous force of American bombers went to Wilhelmshaven. In view of the exceptional number of aircraft engaged, losses were relatively light.

For the night attack on Düsseldorf, 19 R.A.F. bombers failed to return, and in the daylight raid on Wilhelmshaven, the U.S. Eighth Army Air Force lost only five; more than

1,000 machines are said to have been sent out. R.A.F. bomber crews taking part in the night attack gave special credit to the skill of their pathfinders. Bomber Command broke all previous records for perfect timing. The whole of their load, representing considerably over half the 4,000 tons dropped in the two attacks, was put down in 27 minutes.

Apart from the smothering effect which this kind of cascade bombing has upon ground defence, rapid work was specially needed on this occasion as fog was expected at any time after midnight and any delay might have rendered the return trip hazardous.

On Friday, Nov. 5, the U.S. Eighth Army Air Force followed up their Wilhelmshaven effort with another raid on the same scale, employing over 1,000 bombers. On this occasion, Gelsenkirchen and Münster were the targets selected. On the same day, American Marauders, R.A.F. Mitchells and R.A.F. Typhoon bombers were over Northern France in great strength.

Italy and Southern Europe

The sudden burst of defensive air activity put up by the enemy during later stages of the Salerno battle, or series of battles, was short-lived, and last week the Luftwaffe seemed to have disappeared almost completely from the Italian sky. Early in the week, heavy bombers of the North-West Africa Air Forces, escorted by long-range fighters, attacked marshalling yards at Genoa, Imperia and Porto Maritzia, in addition to iron and steel works at Savona. Medium bombers went for railway yards and communications at Frosinone, and light bombers and fighter-bombers were constantly over the battle area in foul weather, attacking gun positions, troop concentrations and motor transport. Fighters also carried out shipping sweeps along the coast, and night bombers visited Perugia. During all these operations, by day and by night, not a single German aeroplane was encountered.

On Tuesday, Nov. 2, Wiener Neustadt was attacked in daylight by a strong formation of the newly created 15th U.S. Army Air Force. Boeing Fortresses and Consolidated Liberators were used in this raid, the third that Wiener Neustadt has had. The attack is stated to have been highly successful. Wiener Neustadt is an important target, for, in addition to the Messerschmitt factory, there are large engineering works, iron foundries, and paper mills in the town.

The 15th U.S.A.A.F. supplements the existing 12th Air Force and the two now form an all-U.S.A. Mediterranean

force, commanded by Lieut.-General Carl Spaatz. The new "15th" is a strategic air arm. It will concentrate on bombing Germany and military targets in enemy-occupied territory. Both American Air Forces will operate in conjunction with R.A.F. and French units, under a unified Command.

The long-expected general offensive broke out towards the end of the week, with a general advance all along the line. The key-point of Isernia was taken, together with Venafro, some distance to the South. Fighting in the neighbourhood of the Adriatic coast was particularly fierce and big tank battles developed there.

Russia

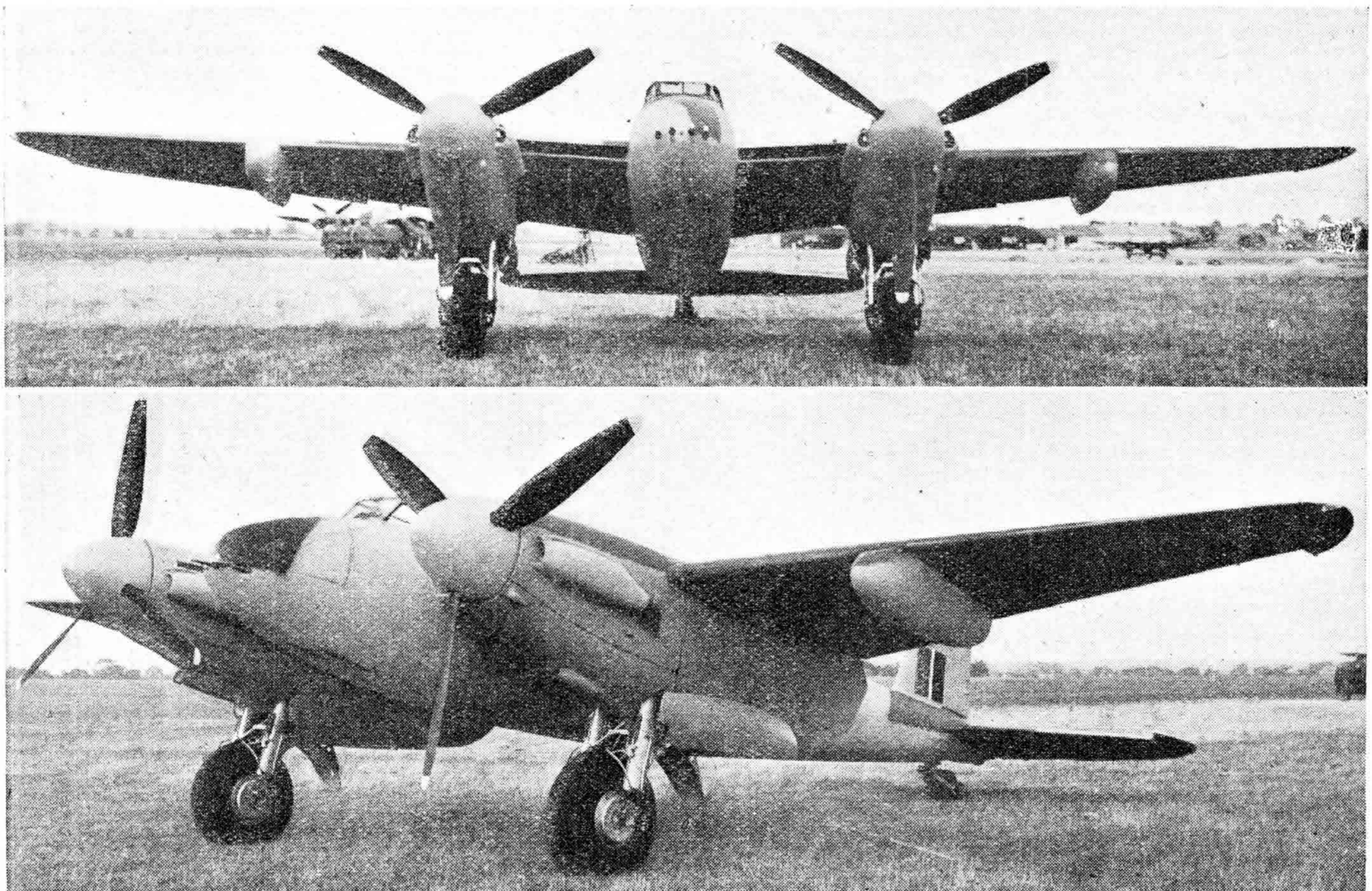
Russian air strength in the great Southern push has been formidable. Attempted crossings of the Dnieper at many points along its last Westward sweep to the sea became targets. Scenes of confusion, significant in the German Army, were reported by Soviet air crews returning from flights over the district between Perekop and the river. Targets beyond their wildest hopes were provided by jammed masses of German transport around the Dnieper crossings. These they bombed again and again, and the enemy was seen to be burning great quantities of equipment which could not be ferried across, a not unpleasant reminder of our own plight in the last days of the B.E.F. retreat from France.

By Friday, the main road of retreat behind Kiev had been cut and the fate of that great city became sealed. It fell on Friday. At the same time Soviet Armies had reached the extreme end of the peninsula South of the Dnieper estuary and the Crimea was left to its fate, while a general advance continued almost everywhere. Breaks through were reported from the sectors of Kiev, Krivoi Rog and Kherson. Meanwhile, away up in the north, other Red armies continued to advance towards the Polish frontier.

After the fall of Kiev, Soviet troops, pushing forward at record speed across level country, penetrated beyond the Dnieper for more than 40 miles, taking the important junction of Fastova in their stride.

Far East and Pacific

As an example of the steady and unrelenting pressure put upon the Japanese by British and Allied Air Forces in the Far East, an Australian Beaufighter Squadron on train-busting work in Burma is reported to have put out of action recently



LONG-RANGE DAY BOMBERS.—Many de Havilland Mosquito two-motor day fighters (two Rolls-Royce Merlin 21 motors) are now fitted with long-range fuel tanks slung externally beneath the wings outboard of the motor nacelles. Armament is concentrated in the nose.

well over 100 locomotives. A total of 11 locomotives made up one day's bag for this Squadron, which is commanded by W./C. J. B. Nicholson, V.C

Patrol activity continued along the Burma front, particularly in the Chin Hills and Arakan sectors. Japanese troop positions and communications in Burma were the principle targets for the R.A.F. throughout the week. Bombing and machine-gun attacks were made by Vultee Vengeance aircraft on a position in the Mayu peninsula and all bombs were seen to burst on the target.

Fighters and fighter bombers, in attacks on enemy-occupied villages in the Chin Hills area, left large fires burning. This worrying of the enemy was maintained by night, when Vickers Wellingtons raided a hutted camp near Akyab, while by day fighters continued their regular shooting-up of rail, road and

river communications. On the line from Mandalay to Myitkyina two locomotives were damaged and over 40 river craft were successfully attacked on the Chindwin and Irawaddy rivers. No aircraft were lost in all these operations.

A great air-sea battle off Rabaul was reported on Sunday, in which the Japanese Eighth Cruiser Fleet is said to have been practically eliminated as a fighting force.

The first attack by Allied bombers hit five heavy cruisers and light cruisers with torpedoes or bombs. A sixth heavy cruiser and a destroyer were torpedoed and another light cruiser damaged with bombs, according to official communiqués. Two cruisers were seen to sink. One hundred naval aircraft were employed in this action. Twenty-six Japanese fighters were shot down and another 24 probably destroyed. Allied losses were nine aeroplanes.

Diary of the 218th Week of War

Offensive Operations of Fighter, Coastal and Bomber Commands of the Royal Air Force and of the U.S. Army Eighth Air Force. From Oct. 31 to Nov. 6, 1943

Sunday, October 31

DAY .. R.A.F. and R.N.Z.A.F. Typhoon bombers, escorted by fighters, attacked the enemy airfield at Lessay (N. France). Other Typhoons attacked railway targets in Northern France. R.C.A.F. Mustangs, on offensive patrol over N. France, destroyed two enemy aircraft. Two of our fighters were lost.
NIGHT .. Mosquitoes attacked objectives in W. Germany. One Mosquito was lost. One enemy bomber was destroyed during slight activity over South and S.E. England.

Monday, November 1

DAY .. Typhoons and Spitfires destroyed one Junkers 52 and damaged several locomotives and barges during offensive patrols over N. France and the Dutch Islands. One fighter was lost.
NIGHT .. Two enemy aircraft were destroyed during slight enemy activity over Southern England.

Tuesday, November 2

DAY .. Typhoon bombers and fighters attacked two enemy merchant ships off the Brest peninsula. Mustangs and Typhoons on patrol over France and the Low Countries destroyed three enemy aircraft and damaged a number of locomotives. One fighter was lost.
NIGHT .. During slight enemy activity over S.E. England, one enemy bomber was destroyed.

Wednesday, November 3

DAY .. Typhoon bombers and fighters attacked enemy shipping on the Seine and on a Dutch canal. Other Typhoons later bombed a power-station at Antwerp. One Typhoon was lost. U.S.A.A.F. Fortresses and Liberators, escorted by Thunderbolts and Lightnings, attacked Wilhelmshaven and other objectives in N.W. Germany. The bombers shot down 18 enemy fighters and the P-47s destroyed 16. U.S.A.A.F. Marauders, escorted and covered by R.A.F. Dominion and Allied Spitfires, attacked airfields at St. Andre de l'Eure and Tricqueville, in France, and

Amsterdam-Schipol, in Holland. The medium bombers shot down two enemy fighters and the Spitfires destroyed 12. American losses were five heavy bombers, two medium bombers and two fighters. One Spitfire was also lost.

NIGHT .. Main target: Dusseldorf. A small force attacked Cologne, and Mosquitoes bombed objectives in the Ruhr and Rhineland. Mines were laid in enemy waters. Four enemy aircraft were destroyed by the bombers. Fighter Command intruders attacked targets in France and the Low Countries and destroyed one enemy aeroplane. Nineteen of our aircraft were lost.

Thursday, November 4

DAY .. Nothing to report.
NIGHT .. Bomber Command Mosquitoes attacked objectives in W. Germany. Mines were laid in enemy waters. Four aircraft were lost.

Friday, November 5

DAY .. Beaufighters of Coastal Command attacked E-Boats off the Dutch coast. One Beaufighter was lost. U.S.A.A.F. Fortresses and Liberators, escorted by U.S.A.A.F. Thunderbolts and Lightnings, attacked Gelsenkirchen and the railway yards at Munster. Twenty enemy fighters were destroyed by the bombers and eighteen by the P-38s and P-47s. Ten heavy bombers and four fighters were lost. U.S.A.A.F. Marauders, R.A.F. Mitchells, and Typhoon bombers attacked military targets in N. France. Many squadrons of R.A.F., Dominion and Allied Spitfires covered the operations. Two Marauders were lost. Mustangs attacked locomotives and other targets in N. France and Belgium. One Mustang was lost.

NIGHT .. Mosquitoes of Bomber Command attacked targets in W. Germany. One Beaufighter was lost on patrol over the North Sea.

Saturday, November 6

DAY .. Typhoons, Mustangs and Spitfires attacked targets in N. France. Two fighters were lost.
NIGHT .. Three enemy aircraft were destroyed during enemy activity over S.E. England.

U.S. ARMY EIGHTH AIR FORCE

In operations during the week October 31 to November 6, the U.S. Army Eighth Air Force lost ten heavy bombers, two medium bombers and four fighters. Total reported losses now stand at 742 heavy bombers, 23 medium bombers, and 55 fighters. Reported successes in combat stand at 2,594 enemy fighters shot down.

AXIS AND ALLIED LOSSES—OCT. 31-NOV. 6, 1943

Date	Axis (N. Europe)		Axis (Medit.)		Allied (N. Europe)		Allied (Medit.)	
	Aircraft	Personnel	Aircraft	Personnel	Aircraft	Personnel	Aircraft	Personnel
31-10-43	3	9	2	2	3	4	—	—
1-11-43	3	9	4	10	1	1	2	8
2-11-43	4	7	37	58	1	1	11	35
3-11-43	5	5	1	1	20	134	—	—
4-11-43	—	—	5	5	4	8	1	4
5-11-43	39	42	—	—	19	120	7	23
6-11-43	3	12	4	4	2	2	6	26
Totals	57	84	53	80	50	270	27	96

TOTAL LOSSES IN THE AIR WAR* (To Dawn, Nov. 7).

	Axis Air Forces	Allied Air Forces
Aircraft destroyed in combat or by A.A. gunfire	18,184	12,258
Personnel	80,445	48,948

* Excluding Russia and the Far East.

THE WEEK'S LOSSES.—Oct. 31 to Nov. 6, 1943.

THE WEEK'S LOSSES AT A GLANCE.—Comparative losses in the Air War for the week Oct. 31 to Nov. 6, 1943, inclusive. The chart does not include aeroplanes destroyed on the ground or those destroyed in Russia and the Far East. The figures for Northern Europe are: Axis (night offensive) 8 bombers; (defence by day) 1 bomber and 43 fighters; (defence by night) 5 fighters. Allied (daylight offensive) 12 bombers and 13 fighters; (night offensive) 25 bombers. The figures for the Mediterranean theatre are: Axis, 9 bombers and 44 fighters. Allied, 20 bombers and 7 fighters. Approximate personnel losses are: Northern Europe: Axis, 84; Allied, 270; Mediterranean theatre: Axis, 80; Allied, 96.

NEWS OF THE WEEK

The **Victoria Cross** has been conferred on Acting Flight Sergeant Arthur Louis Aaron, D.F.M., R.A.F.V.R. (No. 218 Squadron).

On the night of Aug. 12, 1943, Flight Sergeant Aaron was captain and pilot of a Stirling detailed to attack Turin. When approaching to attack, the bomber received devastating bursts of fire from an enemy fighter. Three motors were hit, the windscreen shattered, the front and rear turrets put out of action and the elevator control damaged, causing the aeroplane to become unstable and difficult to control. The navigator was killed and other members of the crew were wounded.

A bullet struck Flight Sergeant Aaron in the face, breaking his jaw and tearing away part of his face. He was also wounded in the lung and his right arm was rendered useless. As he fell forward over the control column, the aeroplane dived several thousand feet. Control was regained by the Flight Engineer at 3,000 ft. Unable to speak, Flight Sergeant Aaron urged the bomb aimer by signs to take over the controls. Course was then set southwards in an endeavour to fly the crippled bomber, with one motor out of action, to Sicily or North Africa.

Flight Sergeant Aaron was assisted to the rear of the aeroplane and treated with morphia. After resting for some time he rallied and, mindful of his responsibility as captain of aircraft, insisted on returning to the pilot's cockpit, where he was lifted into his seat and had his feet placed on the rudder bar. Twice he made determined efforts to take control and hold the aeroplane to its course, but his weakness was evident and with difficulty he was persuaded to desist. Though in great pain and suffering from exhaustion, he continued to help by writing directions with his left hand.

Five hours after leaving the target the petrol began to run low, but soon afterwards the flare path at Bone airfield was sighted. Flight Sergeant Aaron summoned his strength to direct the bomb aimer in the hazardous task of landing the damaged aeroplane in the darkness with undercarriage retracted. Four attempts were made under his direction, and on the fifth Flight Sergeant Aaron was so near to collapsing that he had to be restrained by the crew and the landing was completed by the bomb aimer.

Nine hours after landing, Flight Sergeant Aaron died from exhaustion. Had he been content, when grievously wounded, to lie still and conserve his failing strength, he would probably have recovered, but he saw it as his duty to exert himself to the utmost, if necessary with his last breath, to ensure that his aeroplane and crew did not fall into enemy hands. He showed the greatest qualities of courage, determination and leadership and, though wounded and dying, he set an example of devotion to duty which has seldom been equalled and never surpassed.

The **Victoria Cross** has been conferred on Flying Officer Lloyd Allan Trigg, D.F.C., Royal New Zealand Air Force, missing, believed killed (No. 200 Squadron), in recognition of most conspicuous bravery. The official citation reads as follows:—

Flying Officer Trigg had rendered outstanding service on convoy escort and anti-submarine duties. He had completed 46 operational sorties and

had invariably displayed skill and courage of a very high order. One day in August, 1943, Flying Officer Trigg undertook, as Captain and pilot, a patrol in a Liberator, although he had not previously made any operational sorties in that type of aircraft. After searching for eight hours, a surfaced U-boat was sighted. Flying Officer Trigg immediately prepared to attack. During the approach, the aircraft received many hits from the submarine's anti-aircraft guns and burst into flames which quickly enveloped the tail.

The moment was critical. Flying Officer Trigg could have broken off the engagement and made a forced landing in the sea. But if he continued the attack, the aircraft would present a "no deflection" target to deadly accurate anti-aircraft fire, and every second spent in the air would increase the extent and intensity of the flames and diminish his chances of survival.

There could have been no hesitation or doubt in his mind. He maintained his course in spite of the already precarious condition of his aircraft and executed a masterly attack. Skimming over the U-boat at less than 50 feet with anti-aircraft fire entering his opened bomb doors, Flying Officer Trigg dropped his bombs on and around the U-boat, where they exploded with devastating effect. A short distance farther on, the Liberator dived into the sea with her gallant captain and crew.

The U-boat sank within 20 minutes and some of her crew were picked up later in a rubber dinghy that had broken loose from the Liberator. The Battle of the Atlantic has yielded many fine stories of air attacks on under-water craft, but Flying Officer Trigg's exploit stands out as an epic of grim determination and high courage. His was the path of duty that leads to glory.

Air Commodore G. A. Walker, D.S.O., D.F.C., has been appointed an A.D.C. to the King. The Air Commodore, who lost his right arm in an explosion at a station he formerly commanded, was one of the most experienced pilots in Bomber Command before he was promoted Group Captain and now, as Air Commodore, he is probably the youngest to hold that rank.

The use of plastics for drill jigs and stretch moulds by the Brewster Aeronautical Corporation has proved its value in speeding up production of Corsair fighters for the U.S. Navy. Originated by Leonard Weiss, director of Brewster training programmes, and extended by the late Daniel Mancuso and William Barrow, the idea is revolutionary but simple. Given an approved sample part, a drill jig fixture is made which employs a cold cast, non-shrink, thermosetting compound by which all drill holes are precision-fixed and held to location. Being unrestricted material, the plastic permits speed and economy in the making of such drill jigs, hundreds of which are now used by Brewsters in building the Corsair. So well have these jigs and stretch press moulds done their job that other aircraft factories have sent engineers to the Brewster Corporation to study the methods employed.

An extension of the system developed by Mancuso and Barrow makes possible the stretching of leading-edge skin from one piece of heavy duralumin. Such an operation, power-hammered by experienced sheet metal men, formerly required

hours of work in splicing and riveting two joining pieces of skin to assure a perfect fit at the seam.

Soviet air actions at the capture of Zaporozhe on Oct. 14 were directed by Lieut.-General of Aviation Sudets and Major-General of Aviation Tolstikov. Units engaged included the 305th Pavlograd Assault Aviation Division (its new commander is Lieut.-Colonel Studenischev), the 295th Novo Moskovsk Air Fighter Division (Col. Seliverstov), the Fifth Guards Assault Aviation Division (Maj.-General Mironenko), and the 34th Fire Correcting Air Squadron (Capt. Udichev). The first two units have been recommended for the Order of the Red Banner and the last two have been given the name Zaporozhe.

In the capture of Dnepropetrovsk, on Oct. 25, air units were again commanded by Lieut.-General of Aviation Sudets, and two of them were the Third Guards Long-Distance Aviation Division (Maj.-General Brovko) and the 11th Guards Fighter Aviation Division (Col. Osadchego). Both units now take the name Dnepropetrovsk.

Reports of earlier actions include:— Capture of Barvenkovo, Chaplino, Volnovakha and Mariupol on Sept. 10, with air units under Lieut.-Gen. of Aviation Sudets, Lieut.-Gen. of Aviation Khryukin and Maj.-Gen. of Aviation Tupikov. A distinguished unit was the Ninth Guards Fighter Aviation Division (Col. Dzosov).

Flying Officer George Beurling, D.S.O., D.F.C., D.F.M. and bar, the Canadian fighter pilot with a total of 29 enemy machines destroyed, has been promoted Flight Lieut. and given command of a Flight in the "Wolf" Squadron of the Royal Canadian Air Force.

Air Commodore D. C. T. Bennett, C.B.E., D.S.O., is now known to be the Commanding Officer of Bomber Command's Pathfinder Force. He was a civil air-line captain in Imperial Airways before the War, and piloted the Mercury on its record flight from Dundee to South Africa in 1938. Later he flew the same aeroplane across the Atlantic. In 1939 he commanded the Cabot on its first trans-Atlantic flight. He picked up General Sikorski, the Polish leader, and flew him from Bordeaux two days after the fall of France. In Nov., 1940, he inaugurated the Atlantic Ferry Service by leading seven Hudsons which crossed from Newfoundland to Great Britain and were the precursors of thousands of aeroplanes delivered from the U.S.A. by air across the Atlantic. He was born in Australia, and is now 33.

R.A.F. personnel at a Fighter Command station in the South of England have for some time past been working a 25-acre farm on land adjacent to the aerodrome. Using their own horse plough and other implements, airmen and members of the W.A.A.F. have raised crops worth £1,300 during the present year. The accountant officer at this station, chief organizer of the farming venture, has been able to allocate £1,000 towards the purchase of a talkie machine for the camp cinema. This year's farm produce included, amongst many other items, 120 tons of potatoes, 23 tons of cabbages, 15 tons of carrots, 3 tons of turnips, and 2 tons of beans.

The Spanish Civil Air Transport Co., Iberia, which stopped its service between Lisbon and Madrid last April, is resuming traffic on Nov. 15.

Pioneers of Flying in the U.S.A.

By Griffith Brewer

THE STORY of American aeronautics as described by Mr. Milbank (in the "First Century of Flight in America") suffers, as most works relating to flying before flight was attained often do, from mixing actual aeronautical history with pictorial imaginations of the period. It is not always easy to know whether one is reading history or fiction. For instance, in attempting to find who was the first in the United States to go up in the air, we learn that James Wilcox made a balloon ascent on Dec. 28, 1783, and then, when the interest of the reader is engaged, we are told that the entire story was afterwards found to be a hoax, perpetrated through the agency of the "Journal de Paris."

We start again, and find that the first authenticated ascent was made only a few months later, on June 24, 1784, by Edward Warren, a boy of 13, whose fearlessness prompted him to volunteer an ascent in a balloon when the courage of the owner Carnes forsook him at the crucial moment. We are told, however, that when he returned from the ascent he was rewarded by money from the spectators. Mr. Milbank very properly mistrusts this ascent, because he knows that balloons do not return when once they get away, and so he suggests that the ascent may have been a short captive one. We are then told that Carnes a month later made a valiant ascent in a fire balloon, but the estimated height attained was only 10 to 12 ft., when it struck the prison wall surrounding the place where the ascent was made and Carnes was jolted from the basket. The balloon, relieved of his weight, ascended, caught fire, and then fell.

Mr. Milbank seems to have been too kind to both of these pioneers, because he tells us that the balloon was a small Montgolfier about 35 ft. in diameter and 30 ft. high. This gives a capacity of about 21,000 cubic ft. We remember when Percival and Stanley Spence used a Montgolfier balloon for lifting themselves with a parachute, but without a car, they required a balloon with a capacity of 80,000 cubic ft., and, finding this too small to give sufficient lift on all occasions, constructed their next balloon of 100,000 cubic ft. The problem of how Carnes could have succeeded in lifting the boy or himself in a car with a Montgolfier balloon of one-quarter this size makes one sceptical as to the authenticity of these alleged ascents. It is a relief, therefore, to find that Blanchard made the first actual aerial voyage in America on Jan. 9, 1793. Then America took a recognised place in the history of aeronautics, for George Washington witnessed Blanchard's ascent.

There is a most intriguing picture illustrating Charles T. Ritchel's flying machine, showing a cylindrical balloon with a man sitting in a frame. A propeller on the end of the frame was turned by pedals and controlled by a handwheel, so that the propeller could draw the machine in any direction. We are told that after Ritchel had successfully exhibited his apparatus in the Concert Hall at Philadelphia (and we fully believe that he did exhibit his machine in the Concert Hall) he took it back to Connecticut on June 12, 1878, and "it was taken up for its initial outdoor flight over Hertford, landing within a few feet of its starting point."

If this statement were true, then Ritchel would have done what has never been done before or since. He would have manually operated a dirigible balloon, flying over a town, and returning to land within a few feet of the starting point. Before crediting Ritchel with this unique performance, one must consider whether the specification which is given is one which it is reasonable to suppose might have enabled him to do this astounding feat. The hydrogen cylinder supporting the apparatus is stated to have been 25 ft. long and 13 ft. in diameter, which gives a capacity of 3,325 cubic ft. The gross lift of this hydrogen would be about 240 lb. We are told that the gas cylinder weighed 66 lb. and the weight of the machine and stay rods was 48 lb., thus leaving a margin of 127 lb. to provide for the lift of the man and the indispensable fittings which must be applied to a

flexible dirigible. Anyone with any experience of lighter-than-air craft must ask for more proof than the unsupported statement that this airship made this record-making flight. The scheme is an intriguing one which has been the dream of every balloonist and looks pretty in a picture, but it should not be brought forward seriously as an accomplished fact without evidence that it did actually accomplish a man-operated dirigible flight and return to the starting point.

The excellent writing and laborious notes in this book indicate that Mr. Milbank, Jr., is an historian well qualified to collect information, but his sifting of the material collected shows that he is not a balloonist and does not understand the basic problems of aerostation.

Towards the end of the book we are told that "by 1891 Sir Hiram Maxim in England had patented the second of his flying machine designs and had begun experimenting with small-scale models in wind tunnels." The authority Mr. Milbank gives is "Aeronautics," by Brewer and Alexander, published in London in 1893. Although it is over 50 years since I wrote this book, I can say definitely that it contains no statement that Maxim had begun experimenting with small models in wind tunnels in 1891.

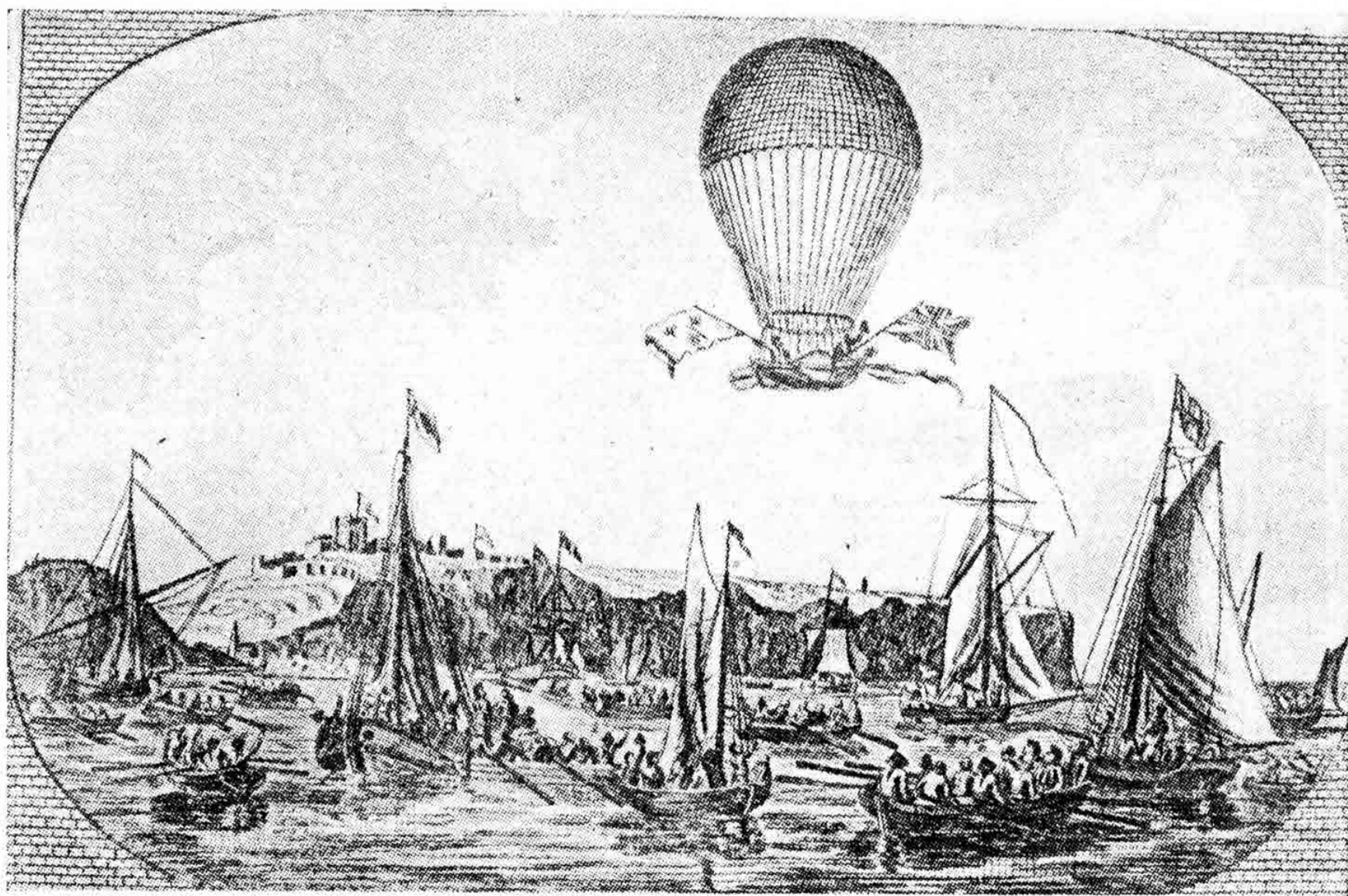
A chapter on Flying Professors gives the adventures of Durant, Elliott, Mills and Clayton in the 1830s, Thurston's death, hanging to a balloon, in 1858, and observation ascents from the armed transport U.S.S. Fanny. John Wise, who lost his life in Lake Michigan in 1873, is deservedly given a prominent place and an illustration of the interior of the car of the "Daily Graphic" balloon is interesting for the details imagined by the artist.

The Civil War in America gave an opportunity to test the balloon's value for observation and Lowe made many captive ascents for this purpose. Later we are reminded of that lovable pioneer parachutist Captain Tom Baldwin, who later delighted the London public by jumping from the clouds at the Alexandra Palace.

Montgomery, Chanute and Langley end the century with their attempts at mechanical flight.

Mr. Milbank's book is delightfully written and should be bought by all who wish to make their aeronautical libraries complete. My criticism should make "The First Century of Flight in America" of greater value for reference, by saving readers from quoting as history those portions which are artistic imaginations rising from the romantic character of the period.

[For a comparison of early British balloon ascents James Tytler, a Scotsman, made an ascent from Comeley Gardens, Edinburgh, on Aug. 25, 1784. His balloon travelled half a mile before coming safely to earth. James Sadler, a native of Oxford, about the same time made a balloon flight of about five miles—on Oct. 4, 1784.—Ed.]



PIONEER AERONAUTS.—On Jan. 7, 1785, Dr. Jeffries of Boston, U.S.A., and J. P. F. Blanchard, a Frenchman, made the first crossing of the English Channel in an aircraft. This well-known print depicts the start of the flight from Dover. Subsequently Blanchard made the first balloon ascent in America on Jan. 9, 1793.

"The First Century of Flight in America."—By Jeremiah Milbank, Jr. 5½ in. x 8½ in. 248 pp. Illustrated. Published 1943 by Princeton University Press (Humphrey Milford—Oxford University Press). Price \$2.75 (18s. 6d.).

HERCULEAN PRODUCTION

BRISTOL aero-motors are being produced in ever-increasing numbers. The Hercules 14-cylinder two-row air-cooled radial is probably now used as the power unit of as many first-line aeroplanes as any other single type. This represents yet another triumph for the British Aircraft Industry. The Hercules is playing a great part in the bomber offensive of the Royal Air Force, and it symbolises the successful culmination of a long and arduous research undertaken by the Bristol Company to produce an air-cooled radial motor with sleeve valves.

Long-term development of the single sleeve was started by the Bristol Aeroplane Company in 1926. Interest in the radial air-cooled aero-motor had taken practical shape at Bristol's when the Company acquired the designs and staff of the Cosmos Engineering Company in 1920. Investigations had convinced the Company's engineers that a cylinder bore of over five in. was a prime essential in the development of the perfect radial type. Further, the conclusion was arrived at that the four-valve head provided the greatest efficiency. But mechanical difficulties in adapting four-valve mechanism to the radial became apparent. The Bristol Company, in its effort to find alternatives to poppet valves, eventually decided that the single sleeve of Burt-McCollum design was the most promising of all.

After a period of research into the problems of adapting the sleeve valve to large air-cooled cylinders, a complete motor known as the Perseus emerged from the Bristol factory in 1932. This type proved satisfactory in service, at first with Imperial Airways and then in a Vickers Vildebeeste torpedo-bomber Squadron of the Royal Air Force. The Hercules prototype developed an initial 1,290 h.p., and at the Paris Salon in November, 1936, it was shown, type-tested to an output of 1,375 h.p. Progressive development of this powerful motor is shown in the table as follows:—

	Prototype	II	IV	XI	XVI	XVII
B.H.P. ...	1,290	1,325	1,380	1,560	1,635	1,680
Wt./h.p. ...	1.29	1.28	1.24	1.2	1.15	1.12

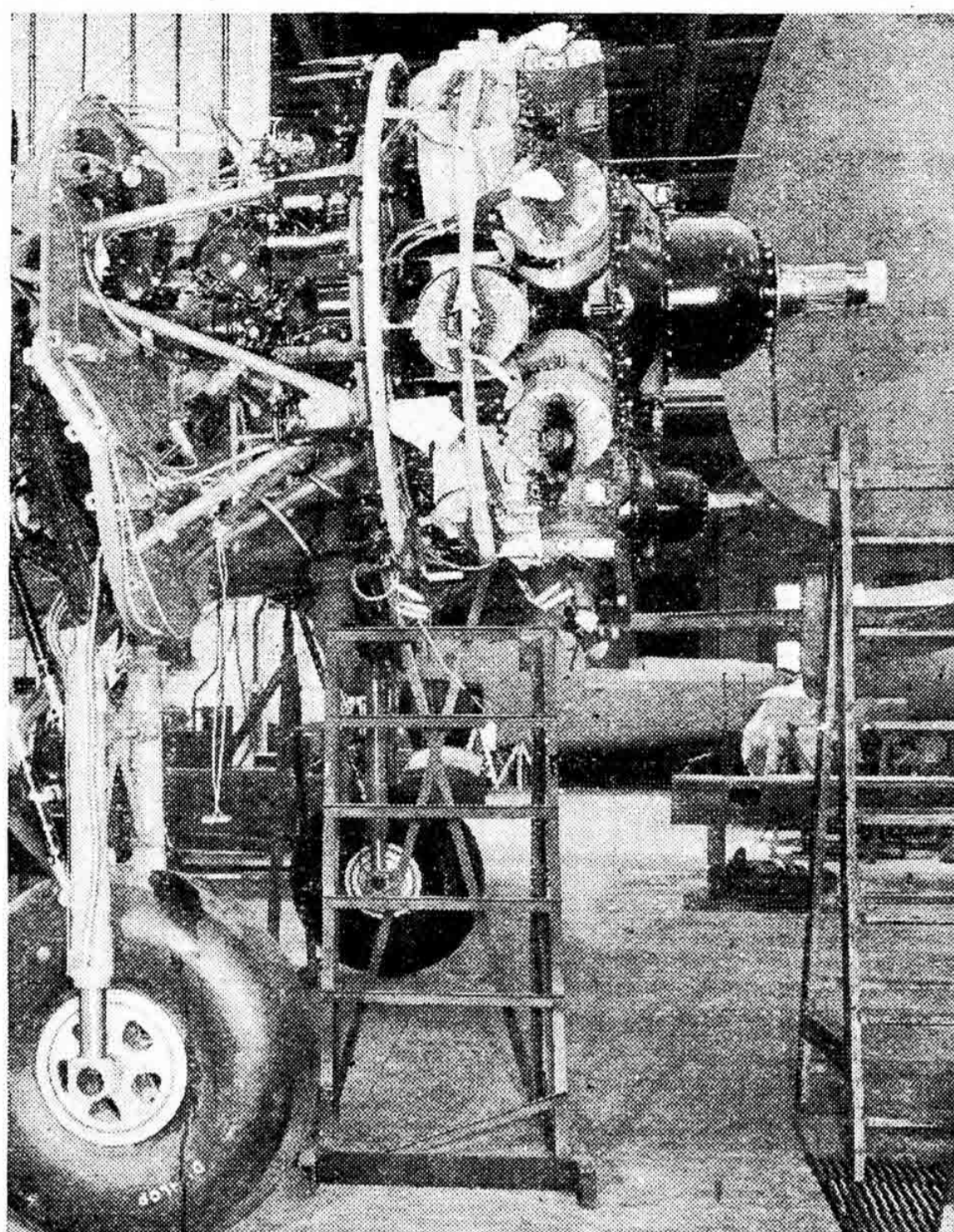
Fuel consumption is less than one half-pint per b.h.p. at cruising speed. Lubricant is no doubt light with sleeve-valve mechanisms.

No further figures may be given, but Bristol policy is summed up in the phrase "development continues."

Advantages claimed for the Bristol design of high-powered aero-motor include the simplicity of assembly of individual cylinder units; the elimination of complicated secondary cooling by using air-cooled cylinders; and the reduction of the number of valve-gear parts in the sleeve-valve system.

Of the 7,180 individual parts which go to make one Hercules motor only 1,089 are different from one another. There is no need to stress the importance of reducing the number of parts from the production angle, but in relation to service and maintenance, the gain is inestimable. Hercules motors are now replacing other power units in some of the more important types being used by the R.A.F. The choice of the Hercules for providing greater power for the take-off and speed and load on operations must be welcome to air crews. The saving of many hours in maintenance must also be appreciated by Service ground staffs. In this connection the universal adoption of the power egg unit assembly of an aero-motor with all its subsidiary assemblies and accessories is to be commended. The Bristol "power egg" is now a feature of current design and with its four simple attachment points to the airframe renders possible the changing of a complete power unit in operational types in a matter of two or three hours.

In the immediate post-War period there will be a demand for reliable high-powered aero-motors requiring little maintenance between long overhaul periods. The Bristol sleeve-valve design seems to fit the picture admirably. The great experience of the Company in providing such a motor for War operations will not be wasted, nor, we hope, will the ground



engineers, who have serviced so many thousands of Bristol type of aero-motors be forgotten. Absorption of motor and its servants into post-War air transport organisations should be a simple process.

Turning to the technical details of the Hercules, we are permitted to give a certain amount of additional information which will serve as a guide in comparison with other types of aero-motors. It has 14 cylinders arranged radially in two rows of seven, with a bore of 5 $\frac{3}{4}$ in. and a stroke of 6 $\frac{1}{2}$ in. This gives a total capacity of 38.7 litres. The cylinder barrel is a light alloy forging with close pitched deeply machined fins. Extra depth is provided at the exhaust zone. A special "automatic" has had to be devised to form the fins. This machine has gang cutters placed opposite on each side of the billet and a cutting fluid torrent has to be used to wash away the swarf. Much experimental work has been done on the finning of air-cooled cylinders and the ultimate development has brought in its train this machining problem.

The cylinder head of the Hercules is a light alloy die-casting with an internal spigot on which the sleeve oscillates. A relief valve has to be provided for the releasing of lubricant trapped in the sleeve passage. The sparking plugs are located in the centre of the head. Interesting features of the cylinder sleeve are the peculiar contours of the ports required by its curvilinear motion. These ports are now successfully "punched" out. The sleeve crank drive is taken from half-speed gearing off the crankshaft; a floating phosphor-bronze ball joint provides the link between this gearing and the sleeve itself. The devising of this mechanism must have given many headaches to the research engineers, but it must rank with many other features of detailed design in aeronautical engineering that have provided the right answer to difficult problems. Another difficulty overcome has been the production of special steel for the sleeves giving the same coefficient of expansion under heat as that of the light-alloy cylinders.

A built-up two-throw crankshaft permits the use of a one-piece master connecting rod with articulated subsidiary rods linked by wrist pins. The crankcase, of forged light alloy machined all over, seems of such light construction that its rigidity in such a high-powered motor as the Hercules is nothing less than a remarkable tribute to the progress of foundry work in aeronautical engineering. Bristols have a section of their foundry exclusively devoted to research in casting light alloys for their aero-motors.

A two-speed centrifugal-type supercharger is gear driven from the crankshaft. Torque is transmitted by a spring drive, three double-acting clutches, and a centrifugal clutch. This specially designed drive precludes transmission of crankshaft vibrations and excessive gear tooth loading. The reduction gear is, essentially on a large radial motor, a bevel epicyclic concentric with the crankshaft, and has a ratio of 0.44. Provision is made for the fitting of constant-speed multi-blade airscrews.

Magnetos, fuel and lubricant pumps are mounted on the rear cover, together with an accessory gearbox.

When Bristols embarked on their perilous journey into the unknown regions of sleeve-valve research they little visualised the enormous demand that would eventually arise for a motor based on that design in the operations of war. With the assistance of the Directorates of Scientific Research and Technical Development, then under the Air Ministry, the Bristol Company persevered and produced a power unit of outstanding merit. This must go down into contemporary history as one of the technical achievements of this country which paved the way to victory. In the Bristol sleeve-valve aero-motor, the air-cooled radial design has reached a new peak of efficiency. Mr. Rowbottom and his team of engineers have ample evidence on which to base their opinion that such a type of propulsion is likely to have plenty of development left in aeronautics.

AEROPLANES OF THE RED AIR FORCES—I

THE ANT-9

Designed by A. N. Tupolev
(Three 300 h.p. M-26 motors)

TYPE.—Transport.

CREW.—Two. Accommodation for nine.

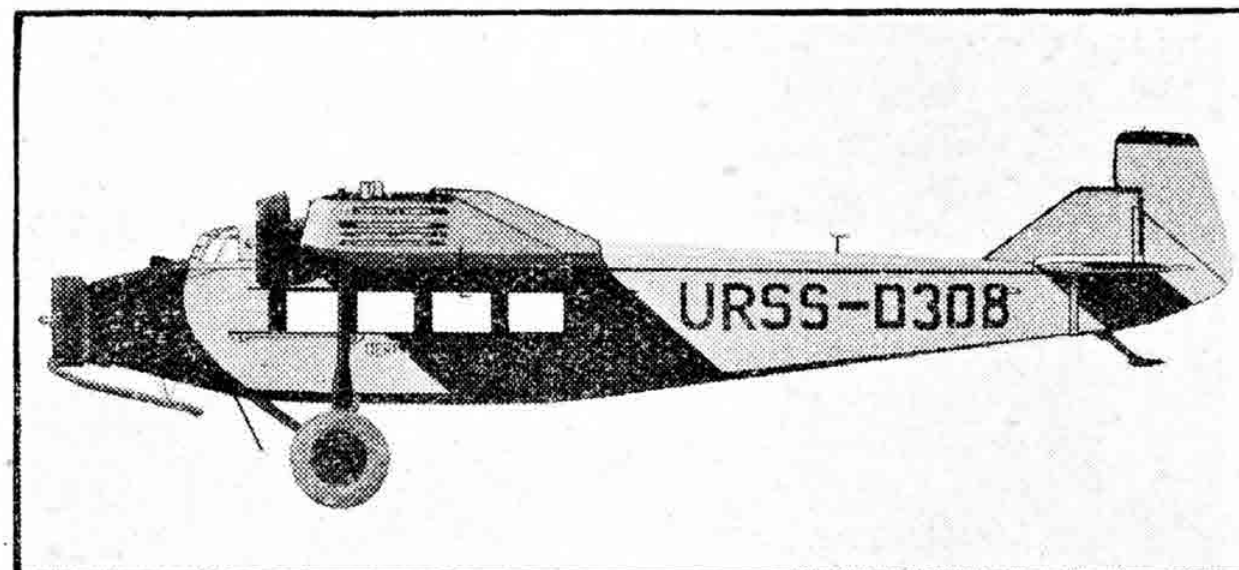
DIMENSIONS.—Span, 77 ft. 10 in.; length, 55 ft. 9 in.; height, 15 ft. 10 in.; wing area, 904 sq. ft.

WEIGHTS.—Empty, 7,376 lb.; loaded, 11,088 lb.

PERFORMANCE.—Max. speed, 129 m.p.h.; range, 558 miles at 106 m.p.h.; climb to 6,560 ft., 15.48 mins.; service ceiling, 12,500 ft.

Used in peace-time on the Derulft Berlin-Moscow service.

A two-motor version is also in service.



THE ANT-20bis (L-760)

Designed by A. N. Tupolev
(Six 1,100 h.p. M-100 motors)

TYPE.—Transport.

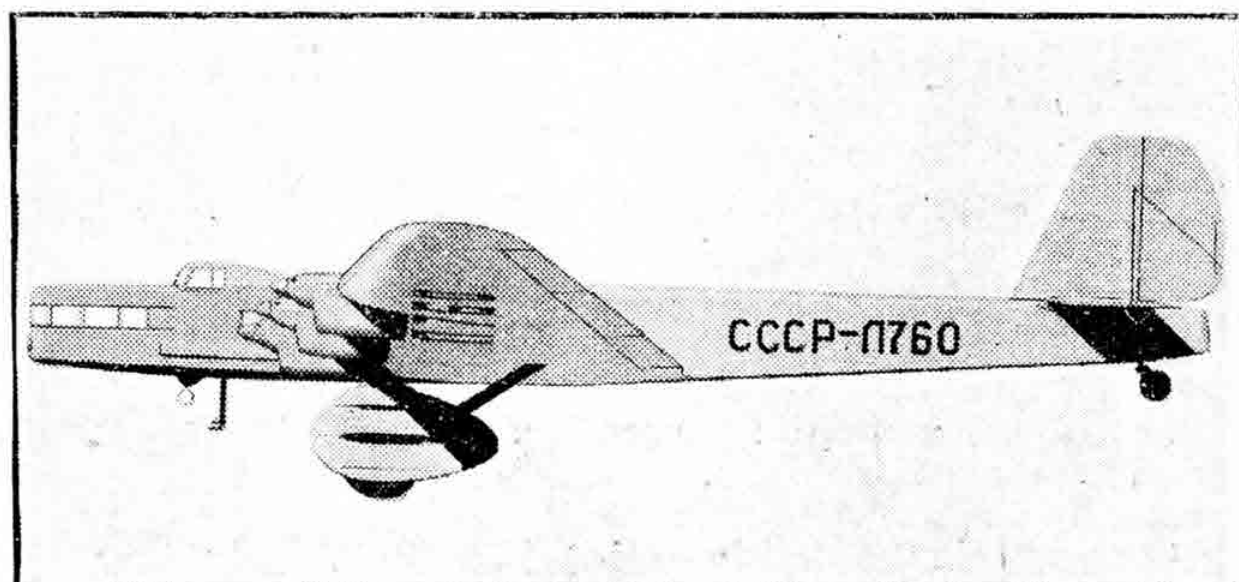
CREW.—Ten. Accommodation for sixty-four.

DIMENSIONS.—Span, 210 ft. 0 in.; length, about 108 ft.; height, about 29 ft. 6 in.; wing area, 5,228 sq. ft.

WEIGHT.—Loaded, 103,000 lb.

PERFORMANCE.—Max. speed, 186 m.p.h.; range, 1,864 miles.

Developed from the *Maxim Gorki* which was lost in 1935, sixteen of the ANT-20bis type were laid down but only one, No. SSSR-L 760, was built. Used in peace-time on the Moscow-Caucasus service.



THE AR-2

Designed by A. N. Tupolev
(Two 1,100 h.p. M-105 motors)

TYPE.—Dive bomber.

CREW.—Three.

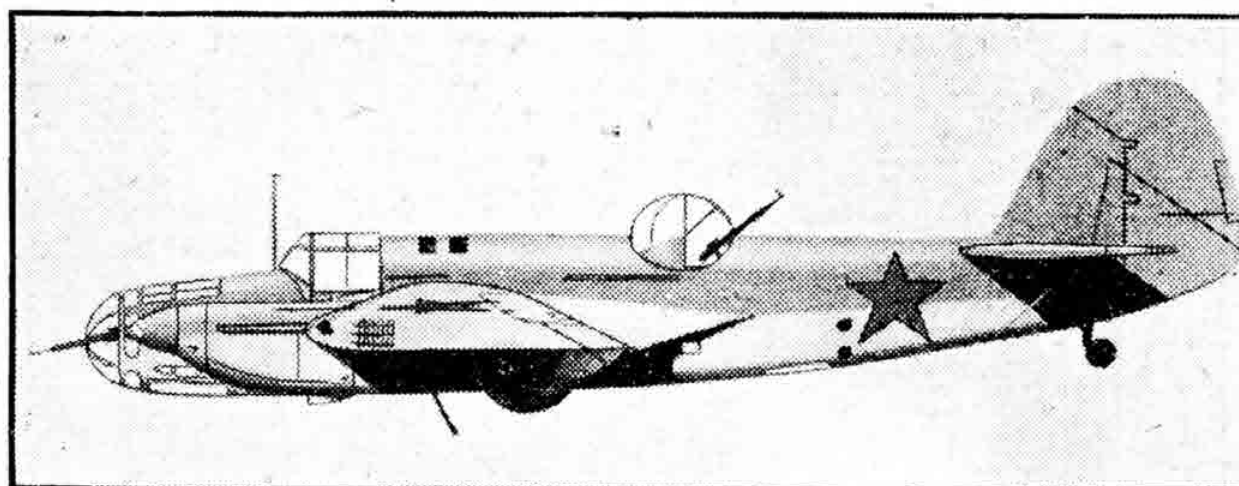
ARMAMENT.—Believed three machine-guns.

DIMENSIONS.—Span, 70 ft. 6 in.; length, about 40 ft.

WEIGHT.—Loaded, about 15,000 lb.

PERFORMANCE.—Max. speed, about 280 m.p.h.; range, 500 miles at 217 m.p.h.; service ceiling, about 25,000 ft.

Dive bomber version of SB-2bis. Early reports called this aeroplane the SB-RK.



THE ARK-3

Designed by I. Tchetverikov
(Two 630 h.p. M-25 motors)

TYPE.—Arctic flying-boat.

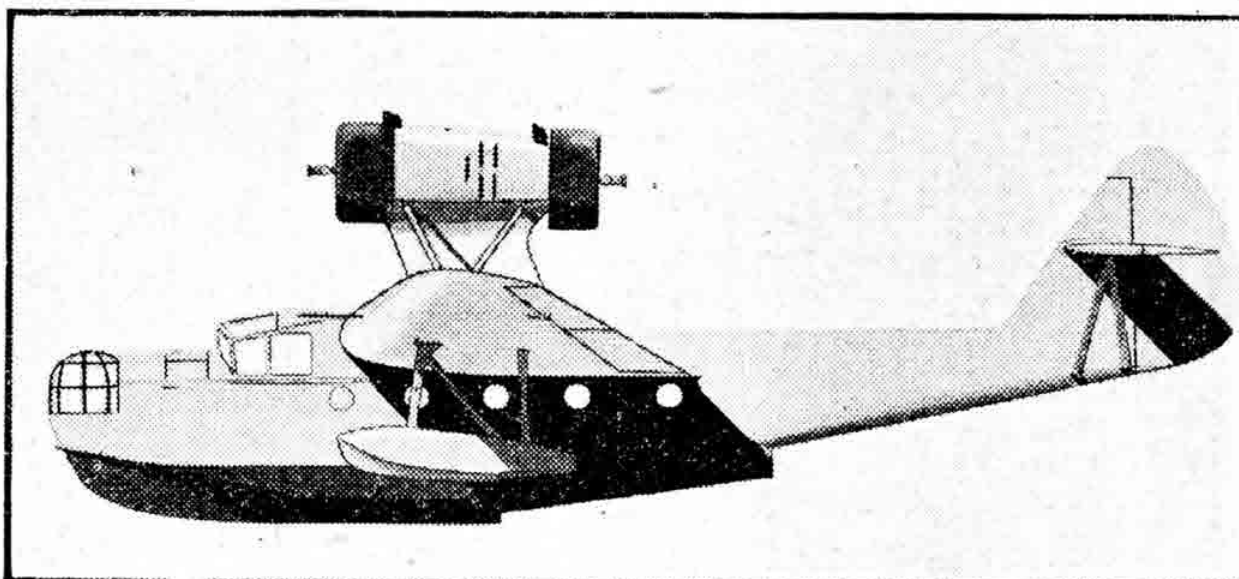
CREW.—Two.

ARMAMENT.—In forward turret and possibly amidships.

DIMENSIONS.—Span, 65 ft. 6 in.; length, 47 ft. 5½ in.

WEIGHT.—Loaded, 11,286 lb.

PERFORMANCE.—Max. speed, 200 m.p.h.



THE BELL P-400 AIRACOBRA

Designed by Bell Aircraft Corporation
(One 1,150 h.p. Allison V-1710-35-E4 motor)

TYPE.—Fighter.

CREW.—One.

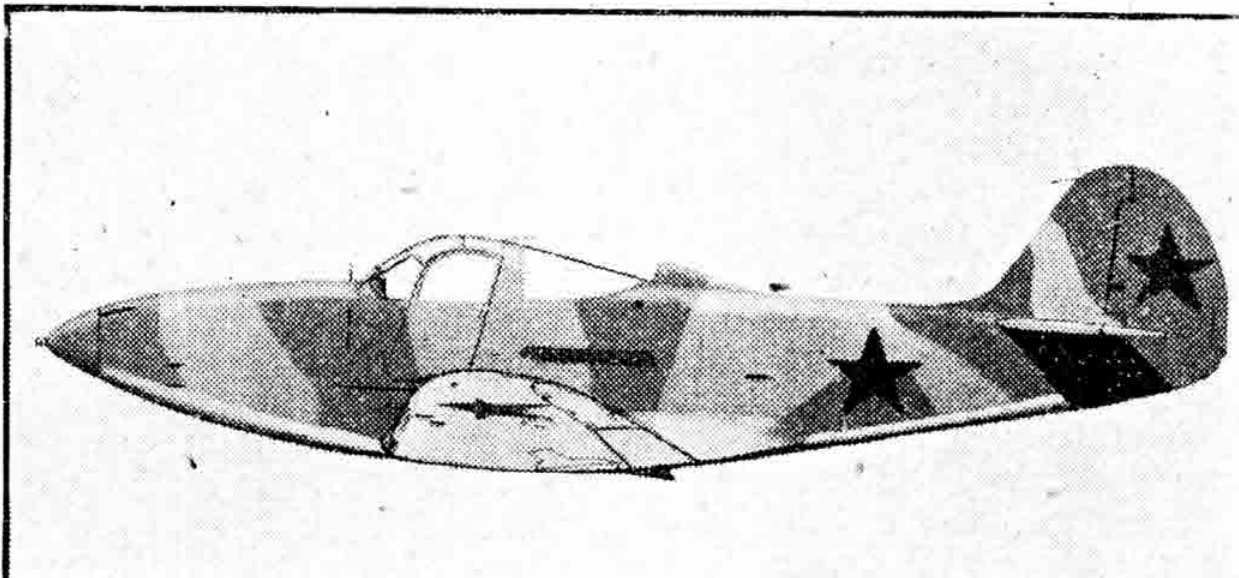
ARMAMENT.—One 20 mm. cannon, two 0.50-in., and four 0.30-in. machine-guns.

DIMENSIONS.—Span, 34 ft. 0 in.; length, 30 ft. 2 in.; height, 9 ft. 3¼ in.; wing area, 213 sq. ft.

WEIGHTS.—Empty, 5,360 lb.; loaded, 7,380 lb.

PERFORMANCE.—Max. speed, 358 m.p.h. at 12,300 ft.; range, 600 miles at 245 m.p.h.; initial climb, 2,500 ft. per min.; service ceiling, 30,000 ft.

The armament quoted is for the Airacobra I (P-39D). It is possible that the Soviet operated Airacobras have modified armament.



THE CURTISS HAWK 87A3

Designed by The Curtiss-Wright Corporation
(One 1,150 h.p. Allison V-1710-F3R motor)

TYPE.—Fighter.

CREW.—One.

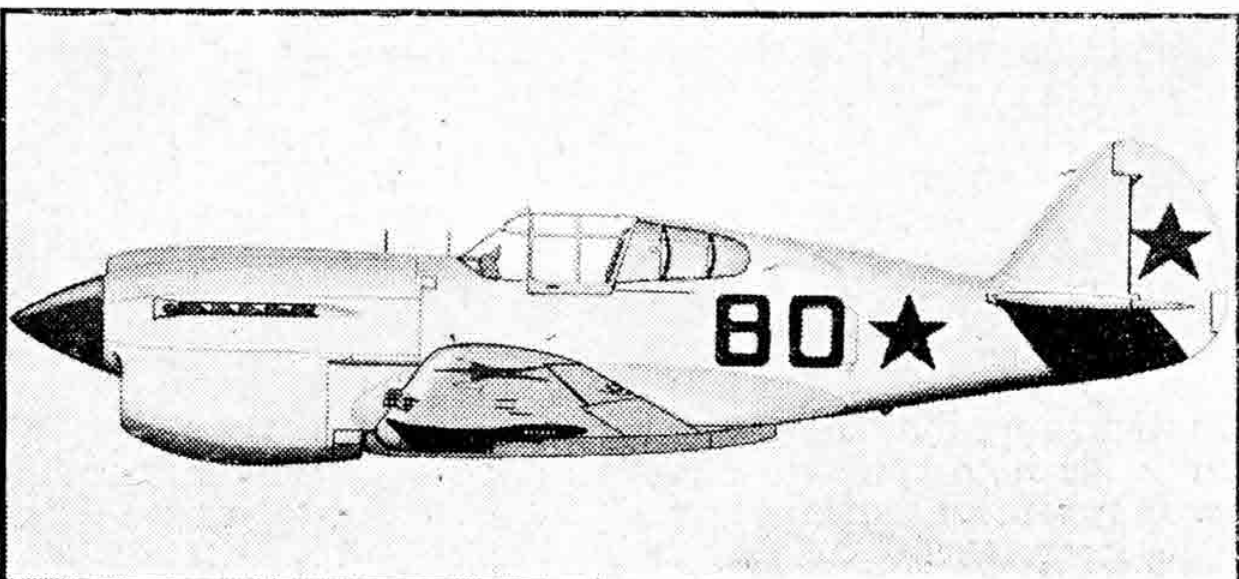
ARMAMENT.—Six 0.50-in. machine-guns.

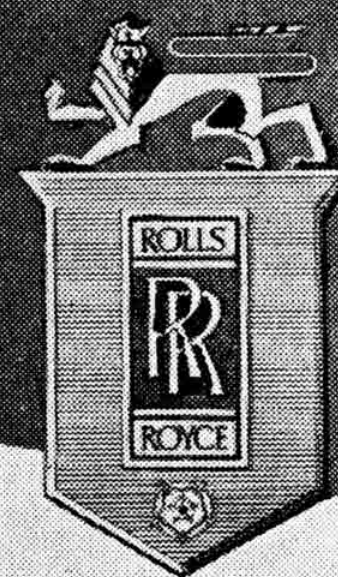
DIMENSIONS.—Span, 37 ft. 4¼ in.; length, 31 ft. 8 in.; height, 10 ft. 9 in.; wing area, 236 sq. ft.

WEIGHT.—Loaded, 8,809 lb.

PERFORMANCE.—Max. speed, 360 m.p.h.

In service with the U.S. Army as the P-40E and with the R.A.F. as the Kittyhawk I.





HURRICANE

SPITFIRE

MOSQUITO

BEAUFIGHTER

WHITLEY

WELLINGTON

HALIFAX

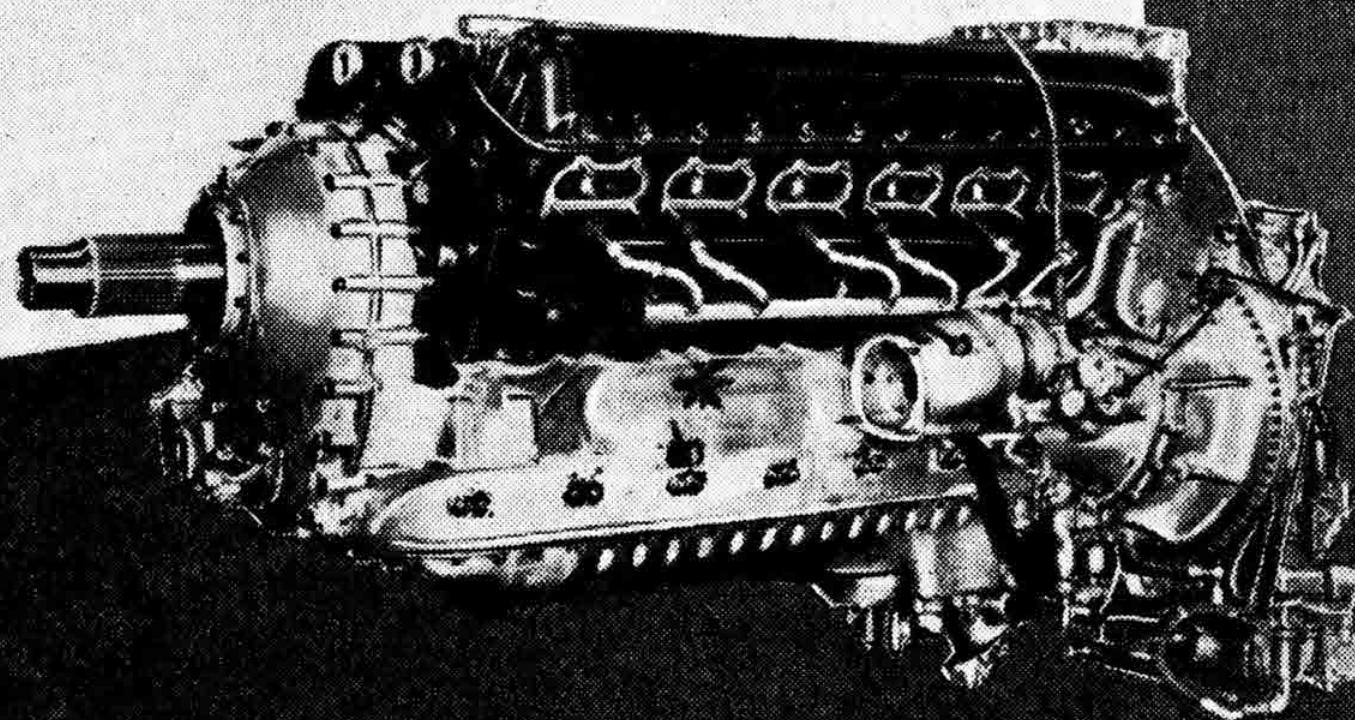
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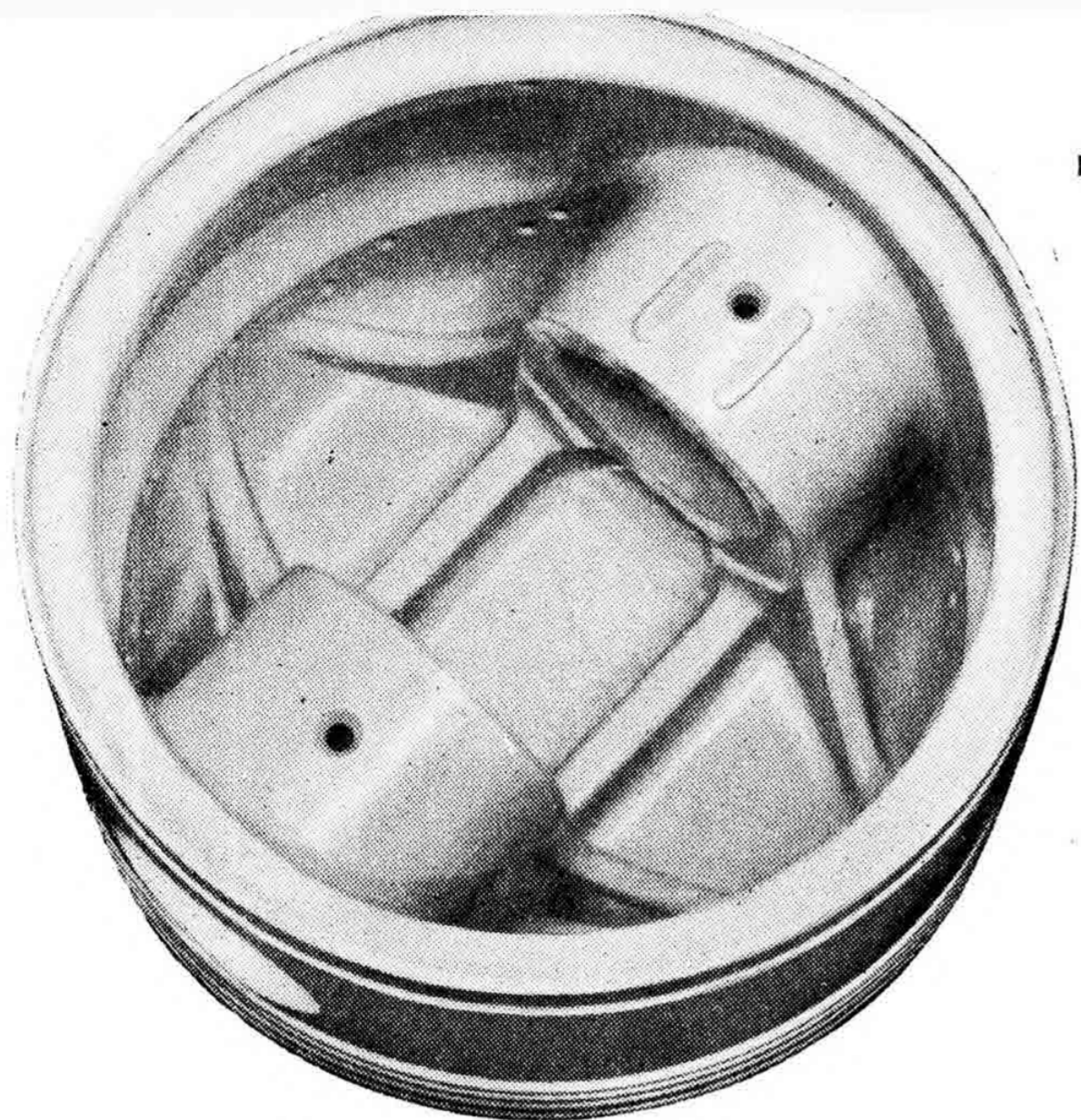
Raid on Le Creusot

by Lancaster Heavy Bombers

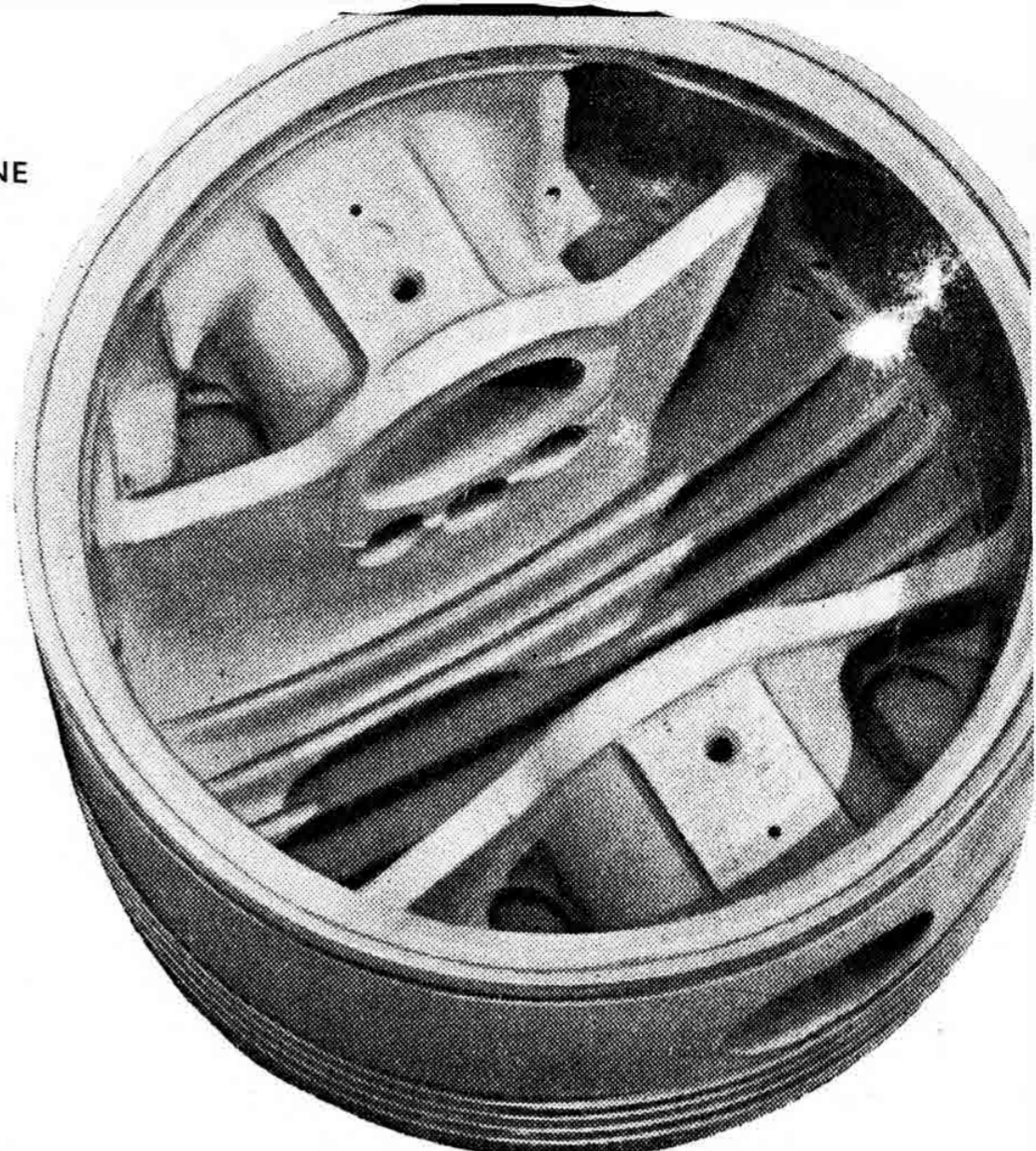


AERONAUTICAL ENGINEERING

GERMAN AERO- MOTOR PISTONS



Piston from BMW 801A1 radial aero-motor fitted to the Dornier Do 217E1.



Piston from Junkers Jumo 211 F1 in-line aero-motor fitted to Junkers Ju 88A1.

FOLLOWING ITS COMPREHENSIVE REPORTS on enemy aero-motors, published in recent issues of THE AEROPLANE, the Ministry of Aircraft Production is sponsoring investigations by specialists into components of the motors. The first report, dealing with pistons, is now available. The investigations were conducted by the Research Department of High Duty Alloys, Ltd., under the direction of Dr. C. Wilson, Ph.D., A.R.S.M., D.I.C.

Seven pistons, taken from four basic types of motor, were examined. All seven had been die-cast to close internal limits with the object of reducing machining time. The crown, in each case, was reinforced by ribs formed in the dies. Little internal machining was evident, the finish produced by the forming dies being considered satisfactory for duty under conditions of high temperature and great stress. With the exception of that of the Bramo-Fafnir, the material used in all the pistons was the eutectic silicon-aluminium type, containing additions of copper, nickel and magnesium.

Mechanical Tests

Mechanical tests were carried out with tensometer test pieces obtained at selected positions. The test positions (see table) were selected to determine effect of operating temperatures on the properties of the material. Test results obtained at the base of the skirt or at the lower portion of the gudgeon pin boss usually provide a close indication of the original properties and, by comparison, the gradual deterioration of the centre of the crown, normally the hottest zone, can be assessed. The results quoted in the Table represent an average from at least two tests. A further average at Position 4 indicates that the strength of the silicon-aluminium alloy was about 21 tons per square inch Ultimate Tensile Strength with an elongation value of 3 per cent.

Considerable softening takes place at the crown of a piston during service and when hardness tests are made on a cross

section a marked hardness gradient between the crown and the skirt is observed. Usually, at the base of the skirt, the material suffers only a slight deterioration in hardness, and from this value an indication of the original hardness of the piston can be gained. Values within the range 90-120 Brinell have been provided by the samples in silicon-aluminium alloy.

The pistons may be regarded as of good general quality, although the rather inferior microstructure discovered in BMW, Mercedes-Benz and Jumo pistons would hardly be accompanied by the best properties. Apparently, German manufacturers do not consider modification of the eutectic silicon-aluminium alloy to be important and allow coarser particle size than is normally considered acceptable.

MECHANICAL TEST RESULTS

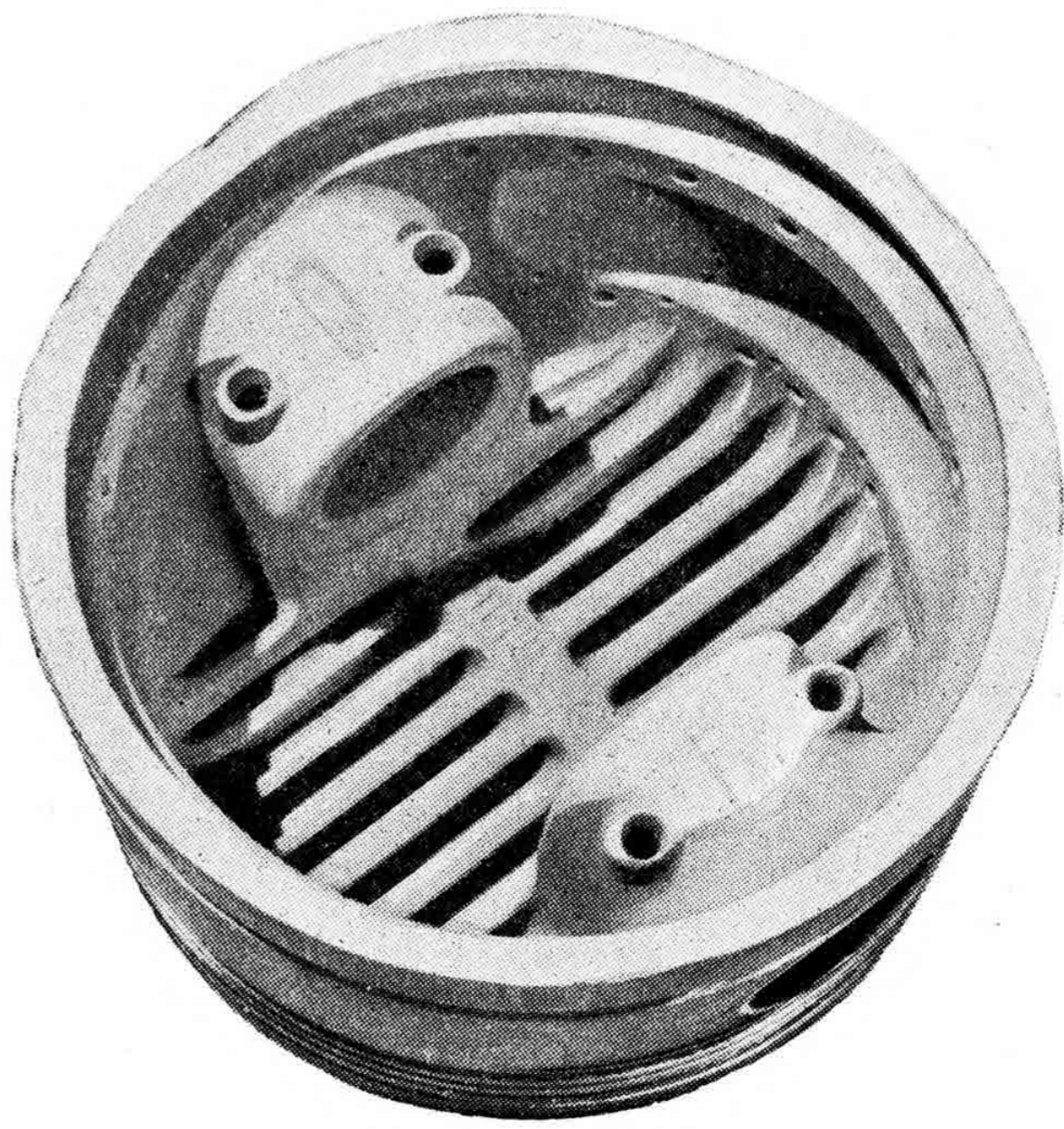
Motor	Position	Yield Point tons/in. ²	Ultimate Tensile Strength tons/in. ²	Elongation per cent.
BMW 132	1	10.4	14.1	7.0
	4	17.8	20.5	3.5
BMW 801A1	1	11.5	15.2	5.5
	2	16.3	19.0	3.0
Mercedes-Benz DB 601N	1	8.9	12.8	9.0
	2	10.9	14.1	4.0
	3	12.6	15.5	3.5
	4	16.0	19.5	2.0
Mercedes-Benz DB 601	1	13.8	16.1	3.5
	3	16.9	18.3	2.8
Jumo 211A1	1	10.1	13.3	6.0
	3	11.0	18.5	2.5
	4	23.0	24.2	2.5
Jumo 211F1	1	17.5	13.7	3.5
	2	15.3	18.6	2.5
	3	15.3	17.3	3.5
	4	18.3	19.9	3.5
Bramo-Fafnir 323P1	1	13.0	19.4	11.7
	3	15.0	19.7	6.8
	4	23.5	26.7	8.0

Test positions: 1, centre of crown; 2, gudgeon pin boss, normal to crown; 3, gudgeon pin boss, parallel with crown; 4, lower skirt or lower gudgeon pin boss.

Piston from Bramo-Fafnir 323 P1 radial motor.



Piston from Mercedes-Benz DB 601N in-line motor fitted to the Messerschmitt Me 109F2.



THE A.T.C. OF THE FUTURE

By C. G. Grey

MANY A TIME AND OFT have I said in this paper that the House of Lords talks more common sense in one day's sitting than does the House of Commons in a week or even a month. And when the Lords are talking about Service matters they are even farther in front of the Commons because a higher proportion of them have served the King, and some of them the late Queen Victoria, on land, on sea, and in the air, all over the World.

This article was written before the debate in the Lords on Cadet questions generally. So it is quite uninfluenced by anything that may have been said during the debate, which, no doubt, will be reported as fully as the paper supply allows this paper.

Unfortunately things have not been going too well with the A.T.C. during the past year or so. Numbers have fallen off, which was natural, but to a considerable extent enthusiasm has fallen off. And both those troubles have to be put right or there will be no A.T.C. after the War.

One obvious reason for the falling off in numbers is that when the A.T.C. was formed it took in all the air-minded youngsters of Great Britain who had not reached military age. Which meant all the 16s and 17s and just 18s. The original Air Cadet Corps, formed by Air Commodore Adrian Chamier, while he was Secretary-General of the Air League, got a good start, and the popularity of flying among youngsters of the better types and of all classes brought in thousands who, if the Air Cadet Corps had not existed, would have gone into the Army Cadet Corps or the Sea Cadets or the Church Lads Brigade, or something of that sort, or they would have remained in the Church Lads Brigade or the Boy Scouts till they were older.

The Age Problem

As soon as the A.T.C. was formed, with the blessing and backing of the Air Ministry, all those youngsters rushed to join. But within a few months the older boys became of Service age and went directly into the Air Force. Within a year all those who were a year younger went in, and at the end of the third year all these upper-age reserves, so to speak, vanished, and there could be no in-take to the A.T.C. except the boys who were growing up year by year. In other words, the A.T.C. began with the accumulation of three years, plus the yearly in-take, and now that those have gone it can only keep going on the yearly in-take.

That would be all right in itself but for the fact that the Sea Cadets and the Army Cadets take youngsters in at 15, which is a year younger than the A.T.C. Theoretically the Army Cadets have the right, if they wish, to go into the A.T.C. when they are 16. To use the abominable official jargon, they can "opt" for the A.T.C. But, in fact, after twelve months' training as soldiers they naturally acquire a strong Army spirit along with their Army training. Their officers are generally Army men, and they have learned not to be scared of Army Drill Sergeants, and so, when the time comes, a high percentage of them choose to go into the Army and do not exercise their option to go into the Air Force. And I believe that Sea Cadets are even more Navyminded than the Army Cadets are Army-minded.

Consequently the A.T.C. in-take does not represent all the air-minded youngsters who grow up year by year. It merely represents those who have not been infected by the Navy or the Army. Moreover, the A.T.C. Cadets themselves have the option to go into the Fleet Air Arm from the A.T.C., and a lot of them do so.

The Short War Fallacy

On top of that, there is a definite falling off in enthusiasm among the growing-up youngsters, for which we must blame the Press and the cinema largely. Thousands of them, like millions of the fool population of this country, have got into their silly heads the idea that the War is going to be over early next year, and that consequently there is no good in their joining the A.T.C. because the R.A.F. will not want them.

They have not the sense to see that, in any case, the training that they will get with the A.T.C. will be useful in civil life even if they do not go into the R.A.F., because they will acquire mechanical knowledge, and knowledge of navigation and various other subjects which they would never get in any other way. And even though that knowledge in itself may not come into their future civil life, acquiring it will have taught them how to learn.

The small classes and the enthusiastic teaching of the A.T.C. instructors gives a much higher type of education than can be got from the much-too-big classes and the not-by-any-means-enthusiastic teaching of the primary and secondary schools. So, anyhow, a youngster is all the better for having done a couple of years in the A.T.C.

But the idea that the R.A.F. will not want them is itself erroneous. There will be no chance, after this War, of the R.A.F. being cut down to 3,000 officers and 30,000 men. If Germany cracked to-morrow, which is not likely, we should still need Air Forces stationed in Central Europe to keep order.

Room By Demobilisation

On top of all that, when Germany does collapse we still have to tackle Japan, and even if we can afford to reduce the size of the Air Force, the older men, and the men who have got jobs waiting for them, and the men who will be needed in various industries to rebuild the country, or to help to build up industries which will re-establish our overseas trade, will naturally be released from the Air Force first. But remembering how things were done after the last War (and remembering that we have made just the same mistakes all through this War that we made in the last War, and a lot of fresh ones as well), I hardly expect that demobilisation will work as smoothly as we are told that it is going to work on paper.

There is a delightful scheme to release men from the Services, and women I suppose, on points. So many points for years of service, so many points for value in civil life, so much for family obligations, and so on and so on. It all sounds very pretty and it reminds me of an old soldier who, in the days of my youth, used to pretend to sell matches at a street corner. He carried a placard which read: "Age 70. Years service 25. Campaigns 9. Battles 20. Medals 10. Wounds 6. Wives 3. Children 12.—Total 155." I suppose that people will be demobilised on some system like that.

But, when the older men and the key men and the trades men have been demobilised, there will be plenty of work in the R.A.F. for the youngsters to do who are keen on aviation as such. For remember that quite a lot of the best men, purely as mechanics, in the R.A.F. are not in the least interested in flying. They are there because they are good mechanics, and they would much rather be working in a garage or in a factory. So there is no need for youngsters to lose interest in the R.A.F. because they think that there will be no room for them when they are at the age of passing out from the A.T.C.

Nevertheless, the A.T.C. must have a square deal from those in authority. It must have a fair chance of getting its share of the best youngsters of the country. That means either that the A.T.C. must lower its age of entrance to that of the Navy and Army Cadets or there must be one joint Cadet Corps from which youngsters can proceed to whichever Service they choose when they reach the age of 16.

Combing the Commissioned Ranks

There is obviously a need for a pretty drastic comb-out of the commissioned ranks of the A.T.C. Most of the officers are thorough good chaps. Very many of them (I do not know the percentage) are ex-R.A.F. of the last war who know their jobs thoroughly and are doing valuable work in passing on the tradition and the experience of the old R.A.F. to the youngsters. But there are others, comparatively young men some of them, who might be doing better work in other uniforms, or in plain clothes or overalls.

There are yet others who can be no use in uniform of any kind, however useful they may be at their own particular job. That sort just has not the knack of handling men or boys, and there are too many of them who joined the A.T.C. for the fun of having a uniform to wear and, in plain language, swanking about it. They are not all young men by any means, and there is a lot in the saying that there is no fool like an old fool.

And Lastly

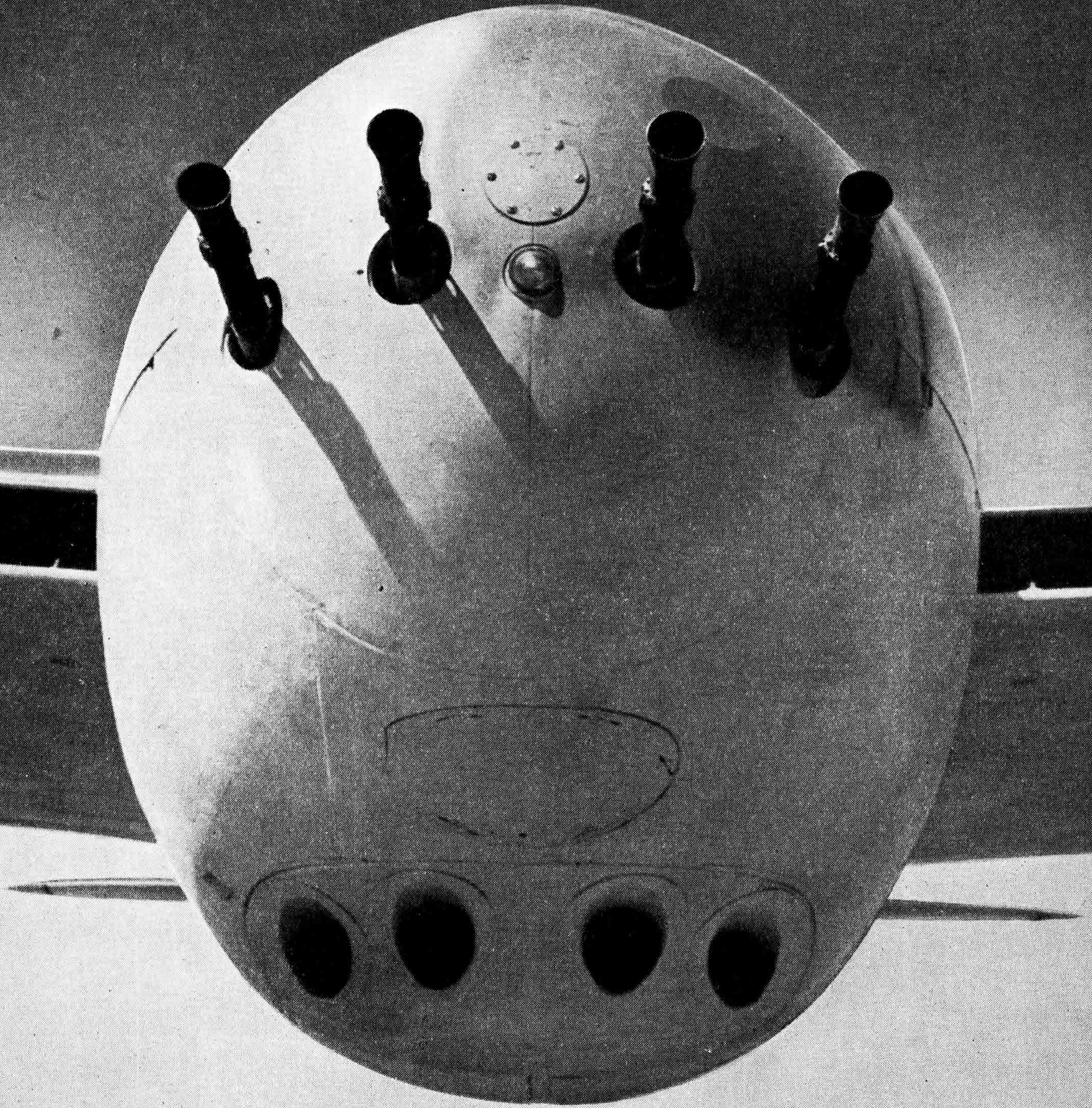
To sum up—(A) There is no need for youngsters to think that the war will be over before they can get into the R.A.F. and that, therefore, there is no need for them to join the A.T.C. (B) There is a serious need for an alteration in the age at which youngsters can come into the A.T.C. so that it may compete fairly with the other Cadet Corps. (C) There is need for an overhaul of the whole body of officers in the A.T.C. so that the efficiency of squadrons may be raised and loyalty to the Corps may be increased.

Lastly, and this applies to the officers just as much as to the youngsters, dig up from your local library, if you have not got it yourself, Kipling's story "The Army of a Dream":

"The Army of a Dream" was written shortly after the Boer War and before even the Wright brothers could claim to have flown, so the question of Air Cadets does not enter it. But the general principle is there, and if you read it you will be a wiser man.

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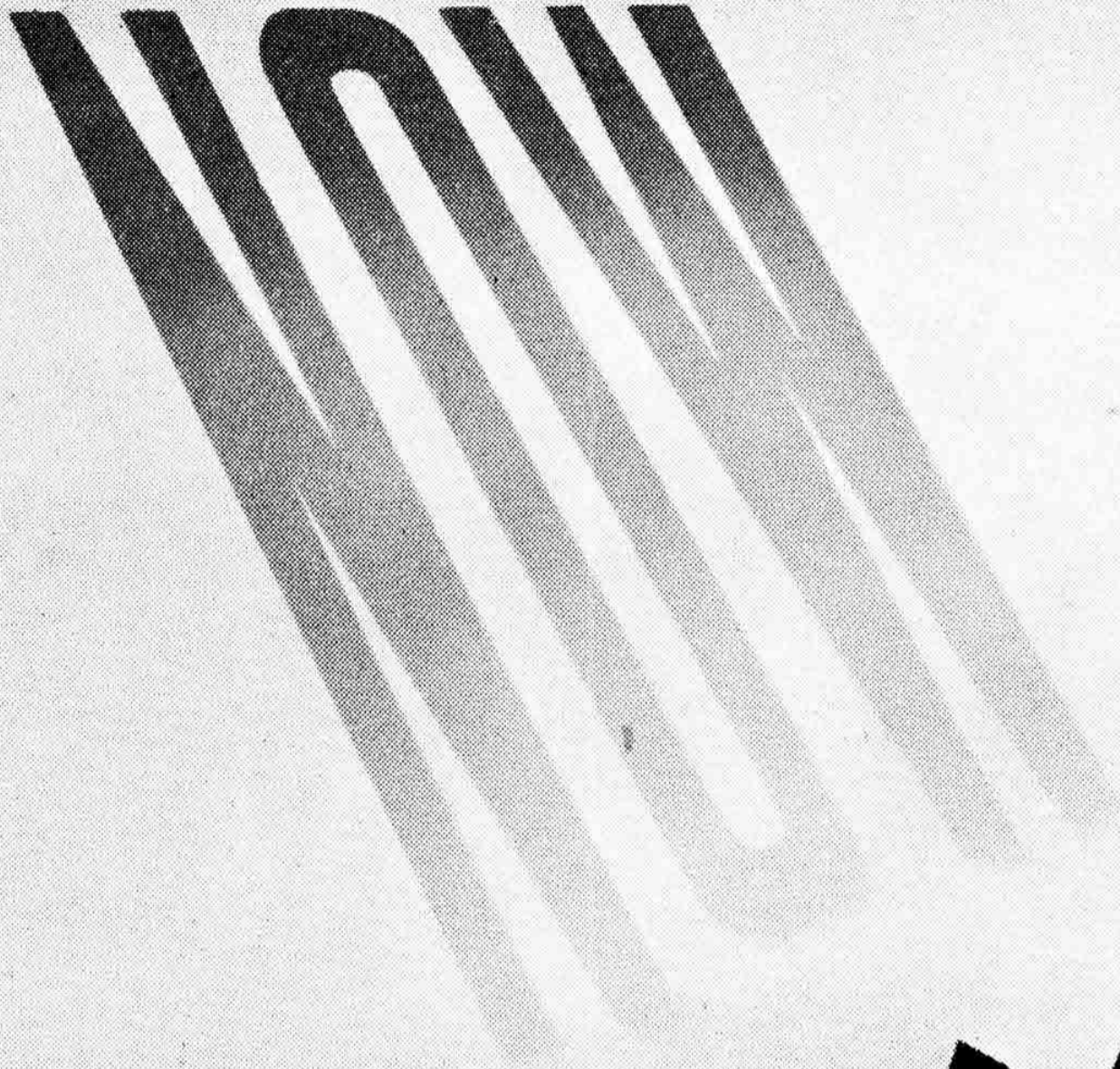


DE HAVILLAND

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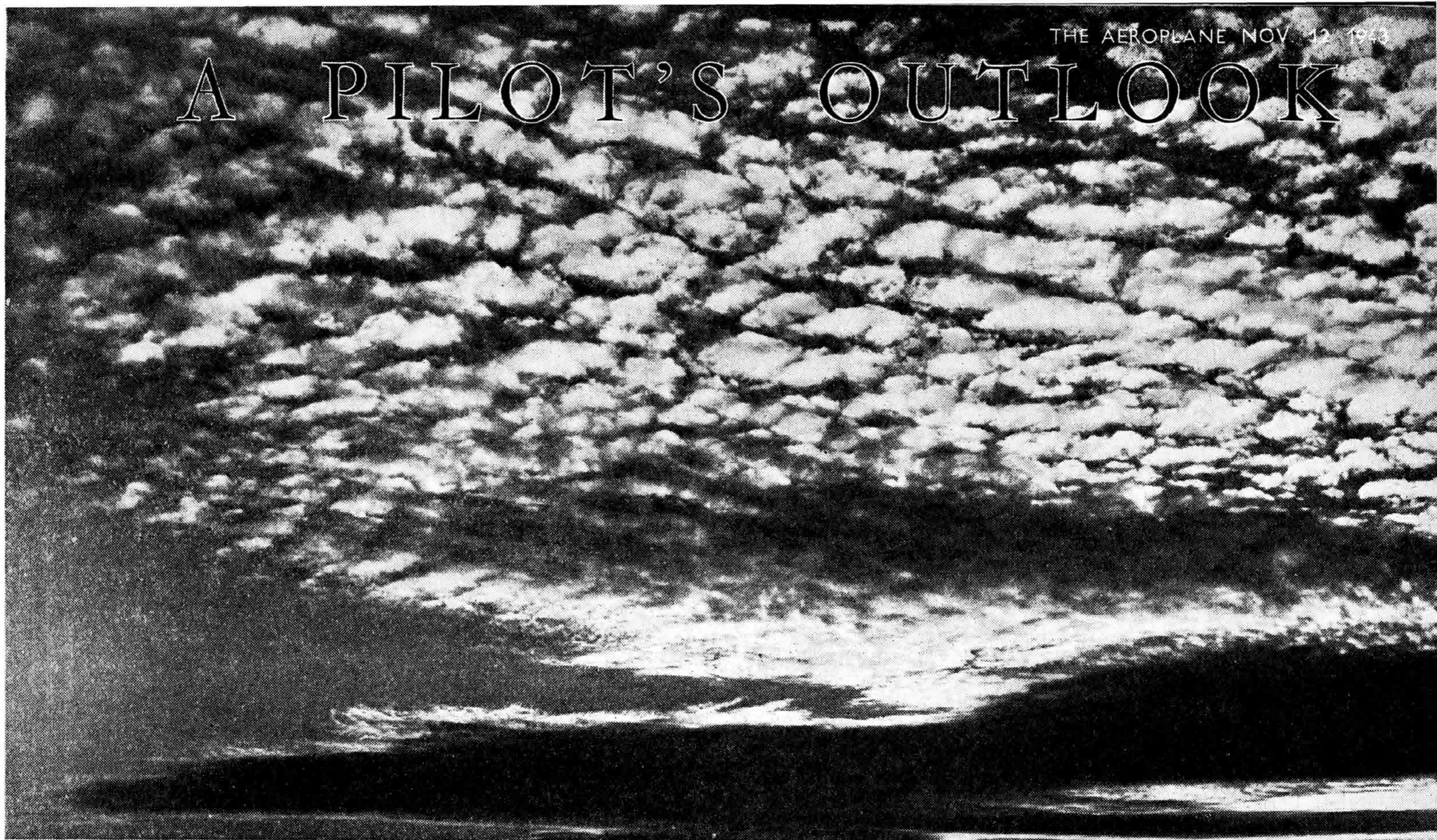
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A PILOT'S OUTLOOK



AFTER A LONG, COLD FLIGHT over very high hills, with the wind rushing down my neck, I arrived at an aerodrome in the North-west. There was a white sea haar, 300 ft. deep, coming in. I quickly counted the number of aircraft in the circuit and was compelled to resort to mental arithmetic. Below me was a comfortable lunch, a glass of beer with a friend, and a long runway. One Liberator stood between me and this. In a short while the aerodrome would be invisible. After a delay, probably of only several minutes, the bomber landed and I was still watching the haar. It was just fringing the town by now; at the most I had 10 minutes more. While thus flying around I thought of the controller smoking a cigarette, standing in a well-heated office, probably a very nice chap. I landed, and glad I was too, for the haar got there about the same time as I did.

Over a glass of beer before lunch I said to my passenger (who by the way was a barrister): "Landlubbers will never understand the problems of pilots." He picked me up at once. It seemed to interest him. Here was a cliché of many a pilot's room brought to light, and several beers were consumed before I could find a satisfactory answer. Tentatively I offered a psychological explanation. The opening passed without being questioned, so I continued in this strain.

Why does anyone begin to fly? In my opinion because of a natural urge to do, instead of just being something. During my early youth I had always admired boys in the school teams. To me it meant they had spirit, courage and probably a superficial disregard for books, regulations and the master's smiles. A lot of them were in trouble, but it did not seem to upset them. Now to a man whose views are thus founded, the outlets in life are small. A farmer? Rather prosaic. The Services? But here regulations and regulations surround you. The British Dominions? Yes, but what is there different in life there? Nothing really, except that dinner jackets and bowler hats are not worn much. Then I turned to flying. I was sure that was my cup of tea.

It offered freedom, the vast spaces of blue sky, cumulus clouds, and the chance to avoid nagging elders. Nobody up there to be polite to and against all my inner feelings! Nobody up there to be forever offering good advice in the form of disciplinary sermons! I could let off steam to my heart's content and have a motor of a few hundreds of horse-power (as they were in those days) to obey my commands. My father would never do more than 50 m.p.h. (he was probably right). There I could do 150, perhaps even 200. All this was immensely attractive, as no fetters bound my wrists or ankles. Once up I could please myself and spell enjoyment with my own letters and leave grandfather's to go mouldy in the cupboard. I cannot help feeling this spirit to be strongly akin to that of Raleigh or of Drake.

Later on, the repressed exuberance of youth became tempered with a little wistfulness, a little experience and vocational outlook. The first attractions, so compelling, gave place to new and deeper feelings—the appreciation of the

World's beauty both on the ground and in the air—to fly towards London on a beautiful summer evening in the shadow of a glowing red sunset and see the Thames, the Houses of Parliament, St. Paul's and Westminster Abbey, silhouetted and predominant; to look down and see the streets crowded with shining cars; or again, to see the beauty of the country, trees, hedges and fields of many colours, mottled and everywhere good to the eye; or flying over the hills of Cumberland with the thought that they would still be there long after I was dead—very humbling, but so is all flying. Nature is always in the forefront, with hills, rivers and trees, but man, whether he be duke or peasant, is no longer a personality when seen from 2,000 ft. up.

The Psychological Effect

In this way flying affects my outlook on men. Before a pilot respects anyone, as opposed to merely being obedient, that person must earn respect. Throwing weight about because a position allows it causes mostly unprintable comments but little respect. If it comes to a competition a pilot is not usually lacking in initiative, so that as a profession pilots are called argumentative, whereas really the argument is a clash of egos. A pilot is bound to be part individualist because there is no "passed to you for advice" tray in the air. If a pilot does not "cope" he goes, or at least finishes his life on crutches. People on the ground in a sticky place try to pass the baby. Pilots cannot, so landlubbers irritate them and are perhaps unjustly called "spineless."

Talk about people on the ground and irritation! Any pilot, landing after a really sticky flight and having been frightened, finds the comments of most landlubbers extremely annoying. First, landsmen consider a pilot rude if he snaps an answer to a really fatuous remark—and lots of their remarks are fatuous. Usually the pilot's neck has been in the balance. What would the average man do if a wheel rolled off his car? Well, why not understand us? It is not very difficult if you try. Or why not incorporate ALL the safety devices you can? To the pilot the answer is clear. It is his neck against some personal or firm's reputation. What's the landlubber's answer? Ours is the same.

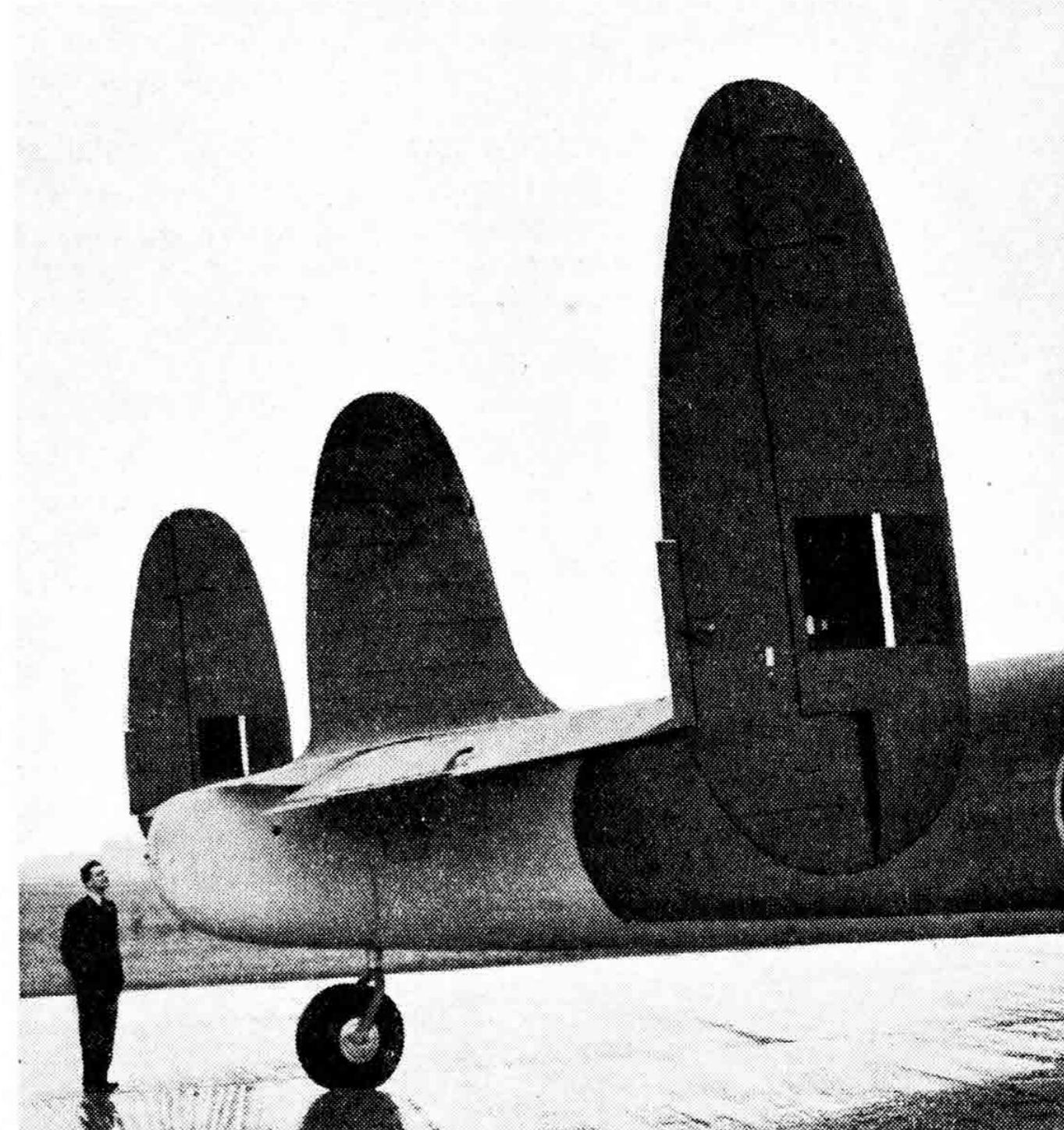
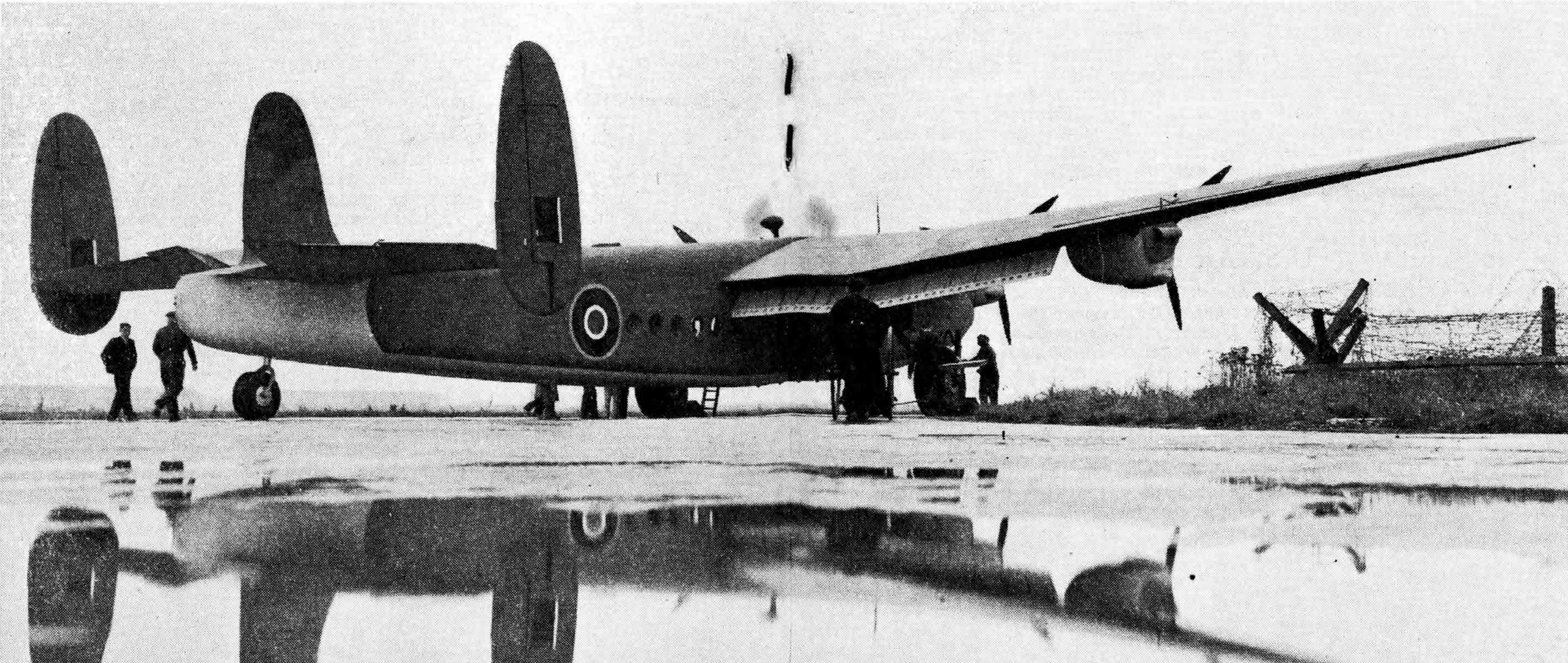
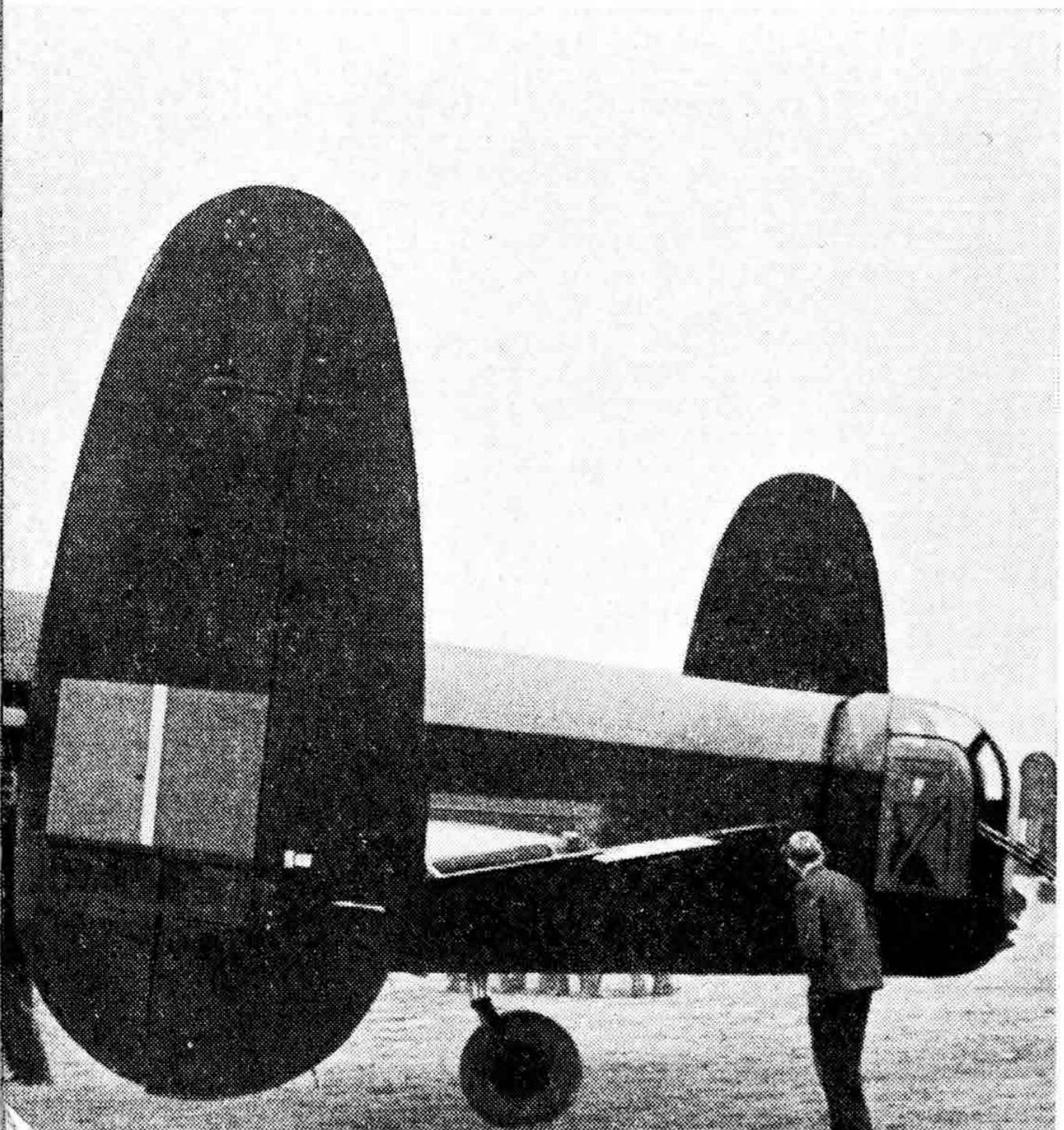
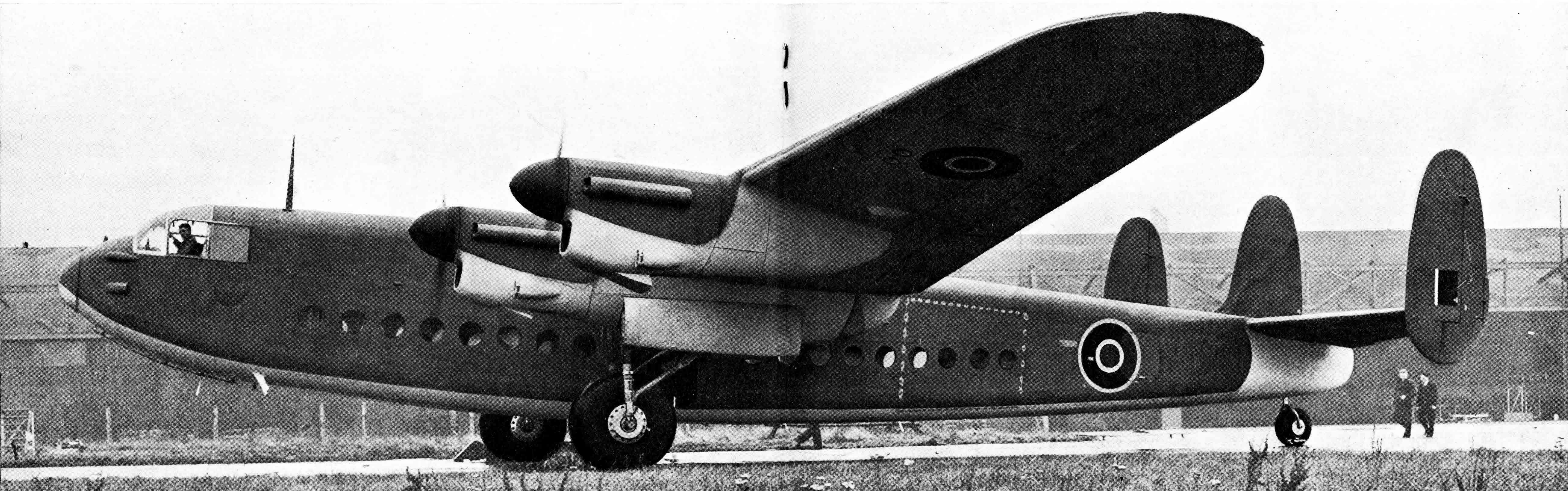
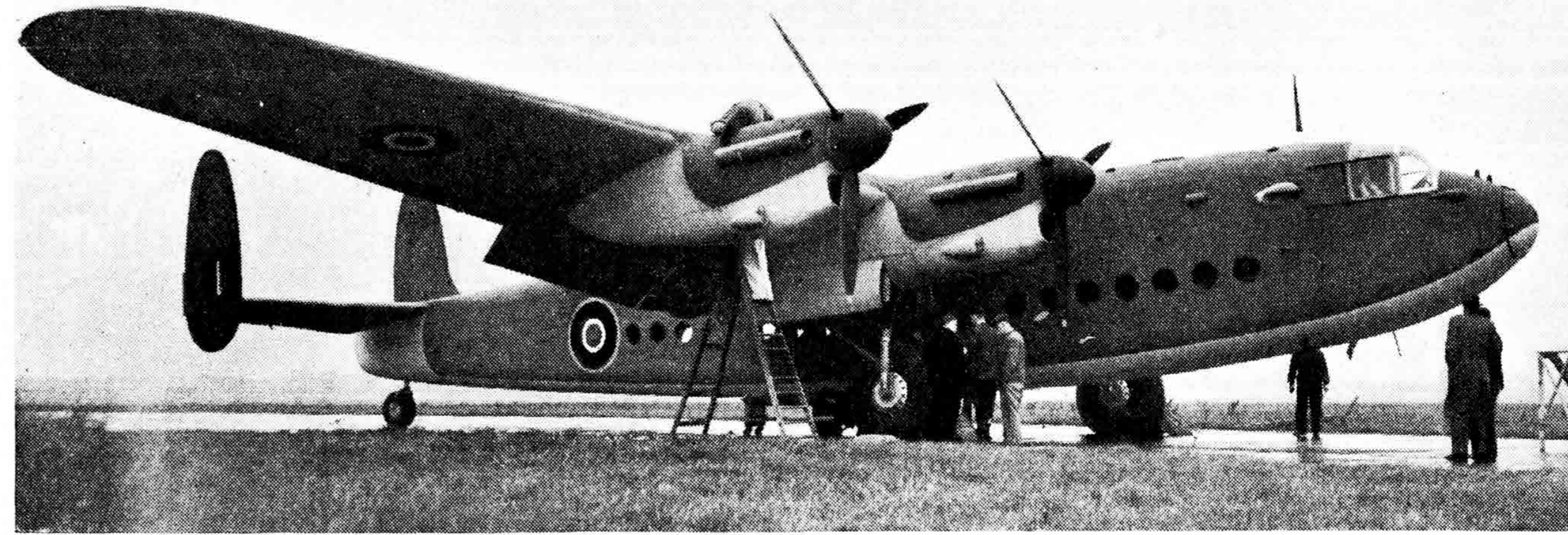
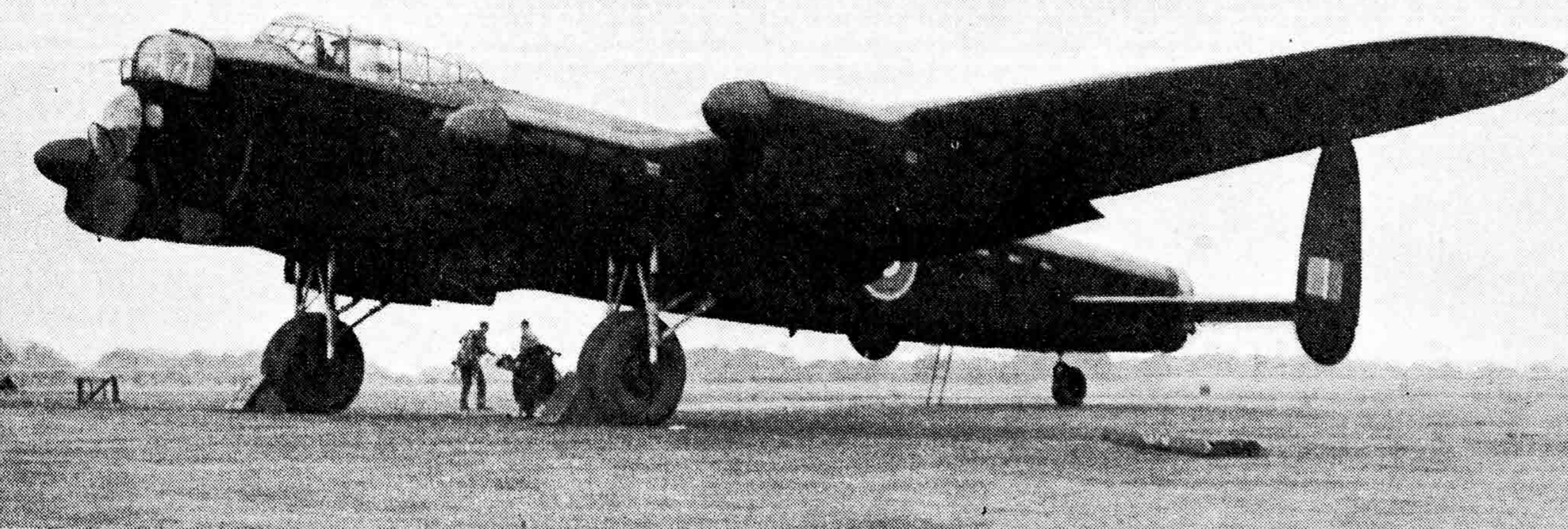
A similar argument is aroused by financial balance sheets. All boards of Aviation Companies should have a practising pilot to advise them on a subject about which for the most part they are "vastly" ignorant. They have other specialists: Accountants (God rest their souls), Technical Experts, Sales, etc. So why so few pilots in directors' positions?

As my barrister friend and I walked to lunch, he said: "With the proviso that my profession is also of use in business, I agree that pilots should occupy more senior positions in aviation." To which I replied: "Give me a firm controlled by pilots, either amateur or professional. It will have the right equipment and be alive and enthusiastic about flying."—RIDLEY LATIMER.

THE AVRO YORK

ADVANCE guard of Britain's new air transports, the Avro York I is based on the Avro Lancaster four-motor heavy bomber and incorporates identical wings and motor mountings. It can be used for a variety of duties, including both short haul and long-distance transport of personnel and freight. Over short distances the York can accommodate more than 50 passengers, but over long distances the number of passengers is probably halved. Alternative fittings allow for cargoes of all freight or mixed freight and personnel.

Photographs top left and bottom left are of the Lancaster and are included for comparison with the York.



Aircraft Supply to the Middle East

A NOTABLE ACHIEVEMENT of this War is the way in which our supply of aeroplanes to the Middle East has been organised and maintained. In spite of apparently insuperable difficulties, it was possible to gain marked air superiority in the North African campaign and almost complete superiority in Sicily.

The entry of Italy into the War in June, 1940, produced a sudden change in the situation. Operations began in many parts of the Middle East and everywhere our troops had to face vastly superior numbers of Italians. The aeroplanes available to help were few in number and often obsolescent in type. Every up-to-date machine was required urgently at home and re-equipment of the Middle East squadrons had become a secondary consideration. Despite the shortage of aeroplanes in this country, however, it was decided that strong reinforcements of modern types must be sent at once.

Even after the collapse of France it was still possible for the long-range heavier types to go by air via Gibraltar and Malta, but to help our hard pressed land forces, fighters, light bombers and Army Co-operation types were the chief necessity. The strong Axis forces on both sides of the Mediterranean made it impossible to ship them by that route and the voyage round the Cape took three months and would be a heavy drain on shipping.

Speed the Chief Consideration

The Air Ministry decided that the short-range types must be flown from West Africa. The nucleus of an organisation was in existence because at the outbreak of War British Overseas Airways Corporation had been running a weekly service between the Gold Coast and Khartum, but this was not adequate for the new project. There were no facilities for erecting aeroplanes and existing landing grounds were at intervals unsuitable for the Hurricanes which were to form a large proportion of the reinforcements.

An advance party under Group Captain, now Air Vice-Marshal, H. K. Thorold, C.B.E., D.S.C., D.F.C., left the United Kingdom on July 4 and reached Takoradi 10 days later. Thorold had been given "carte blanche" to do anything he thought fit and among his few instructions was that speed must be his first consideration. He went at once to Accra to see Sir Arnold Hodson, then Governor of the Gold Coast, who throughout gave him the most enthusiastic help. In the meantime the route to Khartum and the resources at Takoradi were surveyed.

Within a few days it had been decided where stocks of fuel and other stores must be laid down and where accommodation for personnel would have to be provided. An idea of the difficulties can be gathered from the fact that the only method of getting stores to some of these places was by camel transport, and that it was not possible then to arrange for refuelling on the long stretch across French Equatorial Africa.

Takoradi itself was a small but modern port at the terminus of the Gold Coast railway, with about 200 white inhabitants. There was an aerodrome with reasonably good runways and one hangar, and a certain amount of living accommodation for the troops, but little else. The railway workshops, however, were prepared to undertake almost any engineering job and the Gold Coast Public Works Department at once began to erect technical buildings and extra living accommodation.

Not a White Man's Grave

One of the first necessities was furniture, and in that malarial district especially beds had to be fitted with mosquito nets. In addition to the danger of malaria there was the risk of dysentery, yellow fever, and sleeping sickness. The climate was hot, humid, and unpleasant, but it did not prove to be the "white man's grave," so often connected with the Gold Coast. Daily quinine parades were held and although cuts and abrasions took rather long to heal, on the whole there was very little sickness.

Food supplies proved difficult because, though there was plenty of fruit, there was a shortage of fresh vegetables. Seeds, suitable for soil and climate, were procured from South Africa and India and the R.A.F. started their own gardens. Speed is not a characteristic of that country, but such good progress had been made with all the arrangements that when the main party arrived on Aug. 20 it was possible to notify the Air Ministry that the despatch of aeroplanes could be started.

Six crated Blenheims and six Hurricanes arrived on Sept. 5. There had been no time to make an extension of the railway from the harbour to the aerodrome and there was some anxiety as to whether the improvised arrangements made to get the large Blenheim crates weighing 5½ tons out of the ship, up to the aerodrome, and into the assembly hangar, would work. All went well and on Sept. 20 six Hurricanes led by a Blenheim with wireless and navigational equipment roared off on their long journey.

Ferry Crews' Great Work

The route first ran East along the coast then turned North-east over the dense forest area of Nigeria, where there was little hope of bringing off a forced landing. Across French Equatorial Africa the country changes to partially cultivated scrub interspersed with marsh and again changes to open desert towards Khartum. The whole route, including the long stretch down the Nile to Cairo, covered nearly 4,000 miles and was usually flown in four to five days.

Over this long distance there were marked changes in climate and weather. In the coastal region the rainy season lasts from April to October and there is normally low visibility with occasional tornadoes and line squalls. From November till May the Harmattan is likely to be found over French Equatorial Africa. This is an East wind, which, like the sand storms of Egypt, raises a cloud of dust to 10,000 ft. and reduces visibility to a few hundred yards. The meteorological service was all-important, and although at first it and the signal communications were rather sketchy, they were soon supplemented by apparatus and personnel from home!

All the aeroplanes which left Takoradi could not expect to reach Cairo, but there were remarkably few casualties, and great credit is due to the ferry pilots, among whom were a number of Poles. Their skill and courage on active operations is notorious, but they displayed no less zeal and efficiency in these strange conditions.

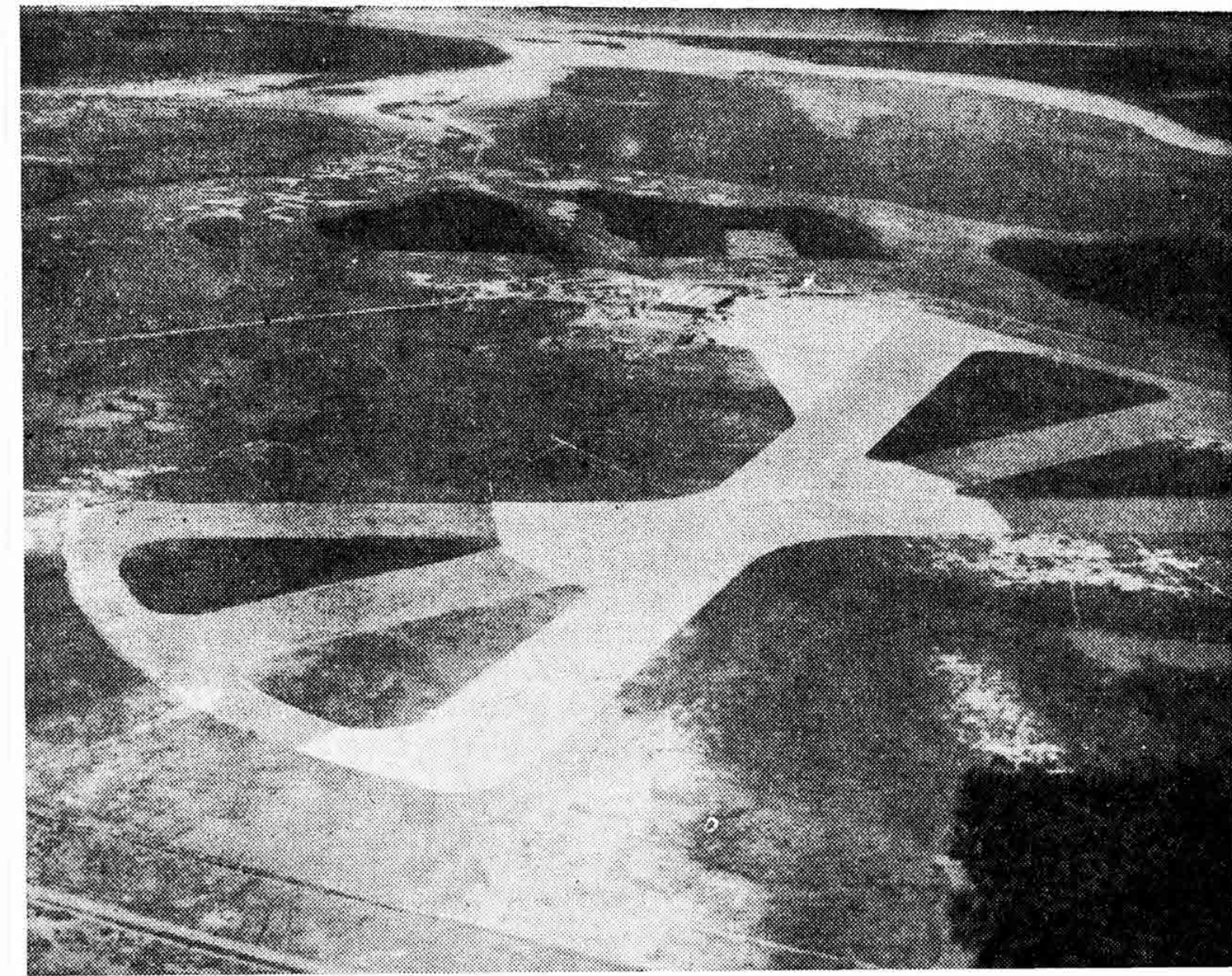
One serious difficulty was that of getting the ferry crews back from Cairo. There were then very few transport aeroplanes in the R.A.F. and reliance had to be placed on B.O.A.C. at first, but later an improvement was made by procuring from India some Douglas DC-2 American transports which had been purchased for the civil air lines in that country shortly before the War.

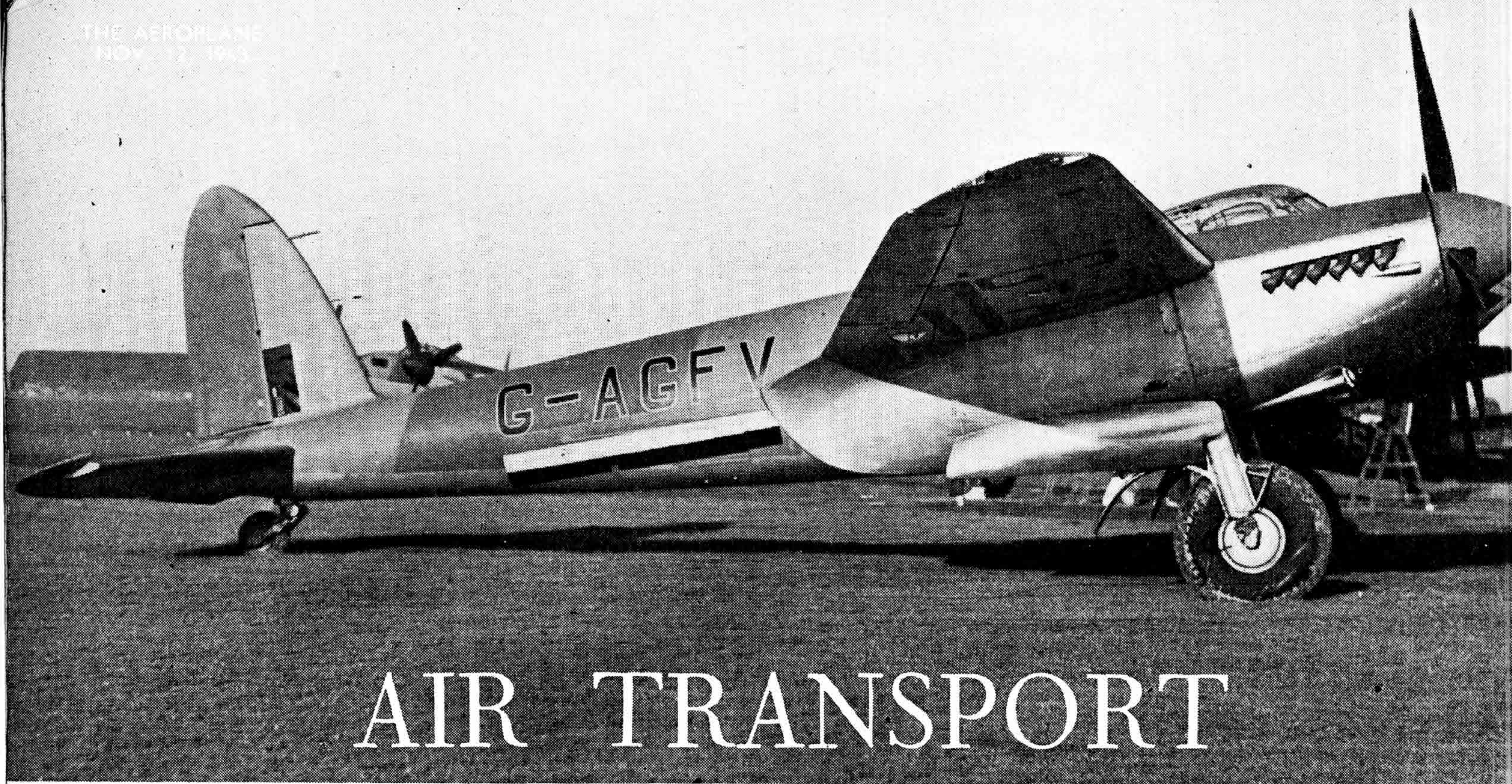
The Importance of Spares

To have got the route going so quickly was a remarkable feat, but had it been possible to cut down the time more rapid delivery would have been useless. Although the aeroplanes could go most of the way by air, the spares and other equipment for the new types had to be sent by sea round the Cape and without them the aeroplanes would soon have been out of action. During the campaign in North Africa our aeroplanes were at times said to be outclassed. When, for instance, the Me 109F appeared neither the Hurricane nor Tomahawk could catch it, but the possibility had been foreseen at the Air Ministry and when, in spite of Fighter Command's protests that every Spitfire was urgently required at home, it was decided that the Middle East must be given that type, the spares were already well on their way to Suez.

In a short time aeroplanes began to arrive at Takoradi in

THE START OF THE LONG JUMP.—The aerodrome at Takoradi, West Africa, from which aeroplanes shipped from Great Britain and the U.S.A. were flown to the Middle East during the North African campaign.





AIR TRANSPORT

B.O.A.C. COURIER.—A small number of de Havilland Mosquito III advanced trainers and Mosquito IV high-speed bombers has been converted for civil duties and put into service with British Overseas Airways on certain of their routes. They are all fitted with long-range fuel tanks and are camouflaged in normal B.O.A.C. colours. The machine shown here is a converted Mosquito IV.

Lord Wavell's Flight to India

A CONVERTED SHORT SUNDERLAND flying-boat of British Overseas Airways flew Lord Wavell from Great Britain to India and Lord Linlithgow home. These converted Sunderlands are in use on the Corporation's Durban to Calcutta air route and on African services. They can be used for day or night flying.

The "B" compartment, or the crew's quarters in the Sunderland, has been upholstered in grey and has comfortable chairs for six persons which can be converted into two bunks for sleeping accommodation. The walls and ceiling are in shades of grey and the floor is covered with pile carpet. Compartment "C," which R.A.F. crews used as pantry and drogue compartment, has been converted into toilet and wash rooms. Compartment "D," which contained bombs, depth charges and spares and had two bomb doors in it, has been converted much the same as compartment "B" with six seats, which can be converted into three sleeping bunks. All the bunks are fitted with reading lamps, bell pushes and roof lamps. Farther aft is a stateroom with two bunks, chair and desk. There is also a pantry, complete with electric kettle, electric hot plates, refrigerator, and so on.

Captain J. L. M. Davys was the Captain of the flying-boat which took Lord Wavell to India and Brigadier A. C. Critchley, the Director-General of British Overseas Airways, was a passenger as far as Karachi. He is on a tour of inspection of the Corporation's Indian and African air routes.

Awards to B.O.A.C. Staff

VARIOUS MEMBERS of British Overseas Airways have received Certificates and Commendations for acts of courage while carrying out their duty in War time:—

Traffic Officer P. C. Armour for gallantry when the flying-boat "Clare" was struck by incendiary bombs while at moorings in Malta Harbour.

Radio Officer R. Z. Martin (since deceased) for devotion to duty from 1935 to 1943.

Mr. J. Venn, Civil Defence Assistant, for bravery when incendiary bombs fell on the Corporation's premises.

Head Launch Boy Omnue S/O Nyang for bravery at Kisumu on January 29, 1943, when he saved an R.A.F. launch from burning.

Woman Seaman Urpeth Pamela Bate for devotion to duty after an accident to a flying-boat.

Captain G. Rae and Radio Officer J. S. W. Payne for devotion to duty on April 23, 1943, when their aeroplane was attacked by enemy aircraft over enemy-occupied territory and forced to land.

Engineer Officer H. A. V. Rawlinson for courage displayed at Slieve Glas, Eire, on July 28, 1943, when his aeroplane crashed on a mountain side.

Scotland as an Aviation Centre

GROUP CAPTAIN D. F. M'INTYRE, of Scottish Aviation Ltd., in an address to the Colquhoun Club of Glasgow Chamber of Commerce, recently emphasised the importance of Scotland as a centre of World Air Transport. Referring to the valleys of the Forth and Clyde, he pointed out that they had been depressed areas in the days before the War. Aviation might provide a new industry. He said that well over three-quarters of the World's population lived in the Northern Hemisphere. This area of Scotland was nearer than Land's End to any point in America. Air Lines across the North Atlantic might, in the future, prefer a route with short hops to increase payload. Scotland would then become the British terminus for an air line to America by way of Iceland and Greenland.

London, Paris and Cairo Air Line

TRANSCONTINENTAL and Western Air, Inc., has filed an application with the Civil Aeronautics Board for permission to establish a commercial air line between America, the Azores, London, Paris and Cairo.

Free Competition for Air-Lines

THE PRINCIPLE of free competition in international aviation after the War was put forward recently by Donald W. Douglas, President of Douglas Aircraft Corporation. "I have studied with great interest the declaration of policy on World-wide aviation as advocated by the 16 signatory air lines," he said. "It is my firm belief that the basic policy involving free competition under reasonable governmental regulation will be necessary to insure the development of a sound and efficient post-War foreign air line system."

U.S. Air Mail Profit

A RECORD PROFIT of about 33,000,000 dollars was realised by the Post Office Department from the domestic air mail service in the U.S.A. in the past fiscal year. Only ten years ago there was a deficit of 13,000,000 dollars. In the fiscal year 1942 the Post Office profit on air mail was 7,000,000 dollars.

Lord Beaverbrook for America

A REPORT from Washington suggests that the Lord Privy Seal, Lord Beaverbrook, will pay a visit to the United States before the end of the year for conferences dealing with international aviation.

By

Air Commodore J. L. Vachell, M.C.

considerable numbers. The original target of 125 a month was exceeded in March, 1941, and had risen to 200 by June. The peak reached was 290 erected and despatched in Nov., 1942, just before the landing in North Africa provided an alternative route to the Middle East. There was naturally some irregularity in the arrival of aeroplanes because of shipping difficulties and sometimes of enemy action, and, at times of emergency, such as just before General Sir Archibald Wavell's offensive at the end of 1940, the supply of crated aeroplanes was supplemented by the arrival of a carrier with the aeroplanes already erected.

An Even and Rapid Flow

With no precedent to act as a guide Thorold decided from the first that to ensure an even and rapid flow with the men and resources available he would adopt "line production" as opposed to "crew production." At definite intervals each aeroplane was moved from one gang of men to the next and each gang had specific jobs to do. This system was retained for bombers throughout, but, with the limited amount of work to be done on the fighters, a more satisfactory method was to put one gang of men on one aeroplane and leave them to complete it.

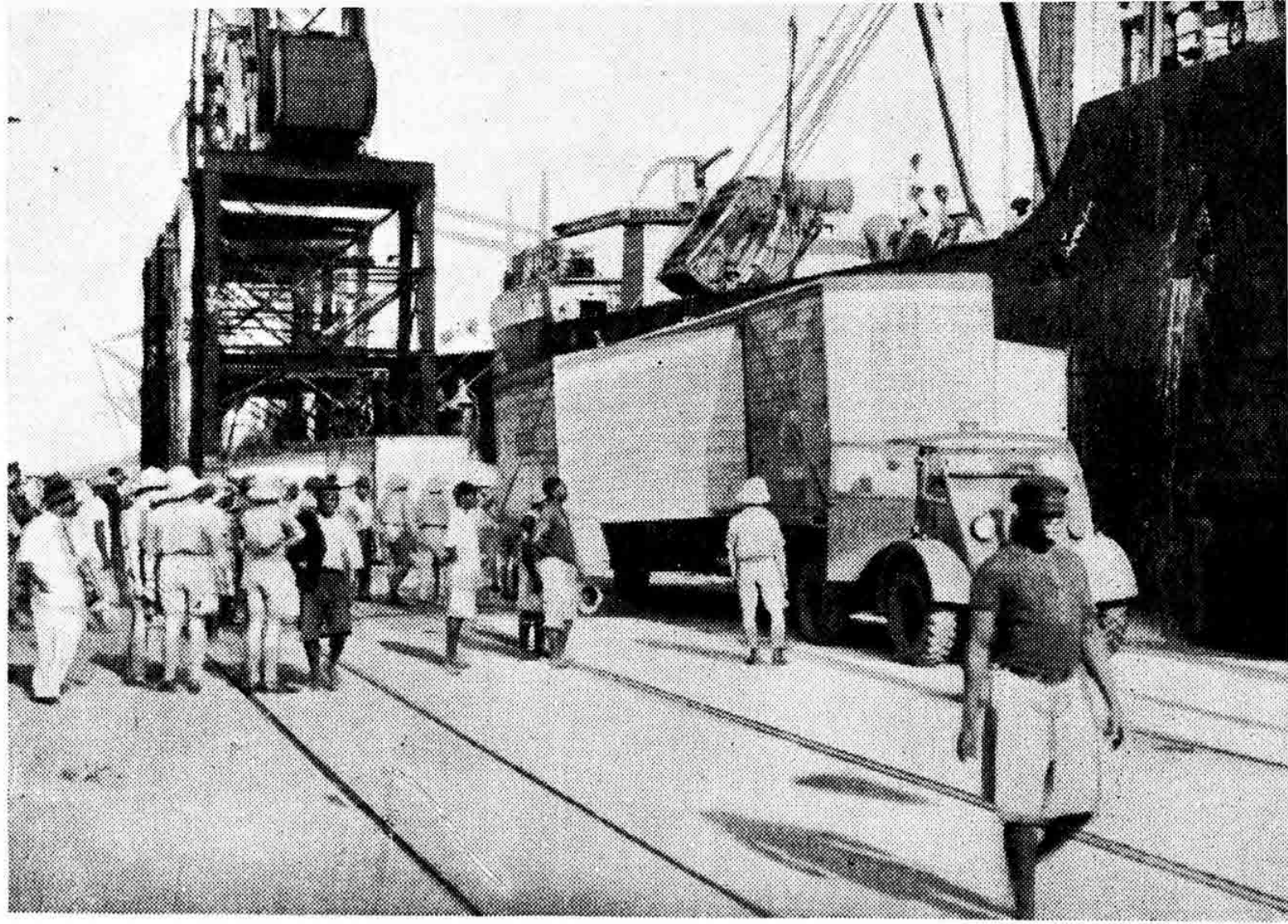
Dislocation in the system was caused when American aeroplanes began to arrive and it is interesting to compare the man hours required for the four main types which were handled. The Glen Martin Maryland took two and a half times as many man hours as the Blenheim, chiefly because the fuselage arrived in three parts and time was taken in laying the control cables, whereas the Blenheim fuselage arrived in one piece with the controls laid. The Tomahawk took almost twice as many man hours as a Hurricane partly because of pre-erection modifications to the motor and airframe, and also because of the extra work of splicing the fuselage to the centre section.

Normally the number of men available were well able to cope with the supply of aeroplanes, but upon occasion, as, for instance, when 300 aeroplanes arrived in three weeks, the congestion grew alarming. In consequence the working day had to be increased from 9 to 10½ hours, which, in such a trying climate, where darkness fell at about 18.30 hrs. all the year round, was no easy matter.

Gradually the base at Takoradi grew until it had the usual amenities of a R.A.F. Station with football and cricket grounds, concrete tennis courts, a church, hospital with R.A.F. nursing sisters, a two-storied institute and cinema where the station band and concert party entertained civilians as well as the troops. Far less could be done for the small groups of men scattered along the route at the staging posts. Theirs was a hard and monotonous existence with very little social contact and their work in getting the convoys through and providing such comfort as was possible for their visitors was magnificent.

"The Convoy Must Go Through"

No record of the supply of aeroplanes to the Middle East would be complete without reference to the important part played by Malta and its gallant defence and to the way in



THE AIRCRAFT ON THEIR WAY.—Crated aeroplanes on their way to the Middle East being unloaded at Takoradi harbour.

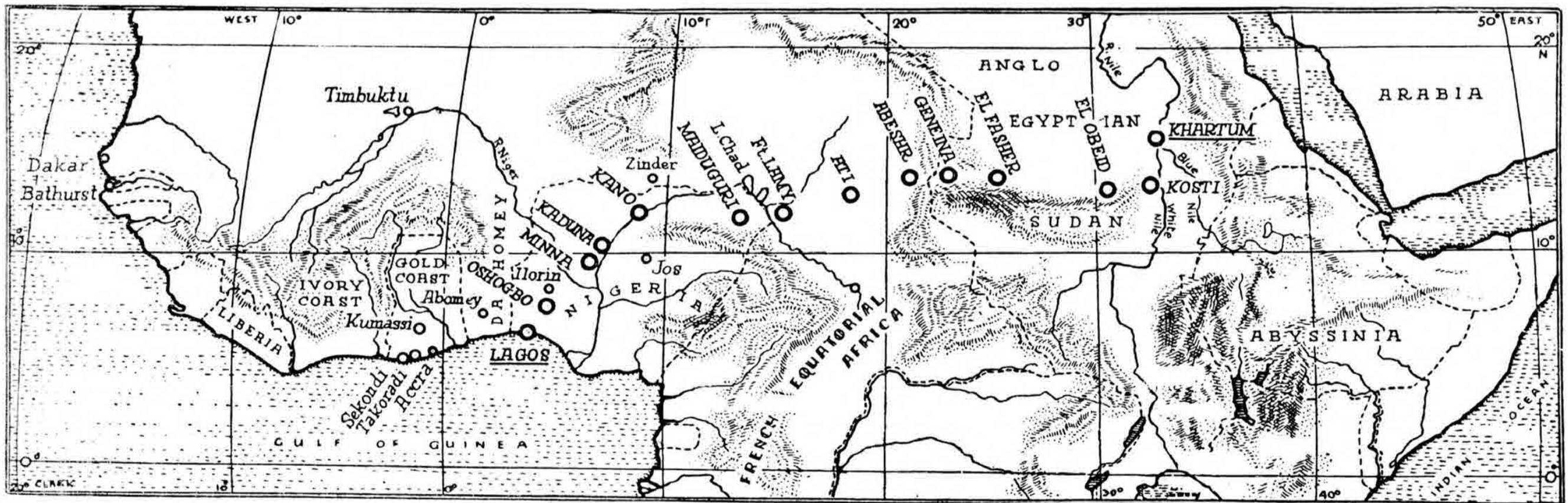
which the Navy helped to keep it available as an air reinforcement link.

It was normal for the heavier types of aircraft en route for the Middle East via Gibraltar and Malta to operate from the latter for a few days before going on, but this depended on supplies of fuel and other stores being available. Petrol was at times put in by submarine, but it was necessary from time to time for a convoy to run the gauntlet of the Axis Naval and Air Forces if the island was to remain available as an air base.

The possibility of providing adequate fighter defence for the island depended to some extent upon the fluctuation of the campaign in North Africa. When our advance to Benghazi secured for us the use of the aerodrome at Benina our fighters were within range of Malta, but for the most part fighter reinforcements had to be sent by aircraft carrier. The normal method was to embark the fighters on a carrier at Gibraltar, whence they were taken to within 500 miles of Malta and there flown off. A flight of that distance over the sea out of sight of land without any navigational aids is too much to expect from a single-seat fighter and so a Blenheim or other multi-seater aeroplane had to rendezvous with the carrier at sea to act as a guide for the fighters.

This required very nice calculation, but it was done time after time with no major mishap, and very few aeroplanes which left a carrier en route for Malta failed to arrive. Most of this work was done by the famous Ark Royal, which after a time took it as a matter of course, but on at least one occasion it was done with equal success by the United States Navy Carrier Wasp.

Great credit is due to all who had a hand in organising the supply of aeroplanes to the Middle East, but to none more than to the late Air Vice-Marshal R. P. M. Whitham, who bore the brunt of the work, and many have been more in the limelight, but it is no exaggeration to say that the loss of Musgrave on active service early this year was one of the heaviest blows which the Royal Air Force has sustained.



"Aeroplane" drawing

THE LIE OF THE LAND.—A map showing the ground covered by the pilots flying aeroplanes from Takoradi to Khartoum. From Khartoum the route lay up the Nile to Cairo. This map appeared in THE AEROPLANE of March 18, 1936, to illustrate the branch line run by Imperial Airways at that time from Khartoum to Nigeria. The only dry season landing grounds then in Nigeria were said to be at Maiduguri and Kano, and the Takoradi site was covered with bush about 30 ft. high.

CORRESPONDENCE

Unsubsidised Air Transport

IN THE AEROPLANE of Oct. 22, the view is expressed that great harm has been done to British Air Transport by the slogan, "Civil aviation must fly by itself." I rather think that the Prime Minister was responsible for the first use of this expression, when he was Air Minister between 1918 and 1921. He has usually been right. I am confident that Air Transport can fly by itself if it is run properly on a commercial basis.

This does not mean that there may not be services required by the Government, for reasons of State or for the benefit of some section of the Empire public, which could not pay merely with receipts from passengers, mails and freight carried at rates which these could afford. In that event the Government would naturally approach an Air Transport contractor, as the Post Office does with shipping and railway companies, and make terms for the operation of such services. That is a business proposition (remuneration for services rendered under a contract), which has nothing to do with subsidy, nor, in my opinion, has the provision of airport, radio, meteorological services, and so on, which are in a similar category to harbours, lighthouses, etc., provided for shipping.

Apart from this I look forward with confidence to the time in the comparatively near future when Air Transport will be able to pay for itself, with a universal postage rate of 2½d. or 3d. per half-ounce (which is not excessive for World-wide postage at speeds about 10 times as fast as surface transport), with passenger fares about the same as those applicable to first-class fares on passenger liners, and perhaps with slower and consequently less expensive aircraft dealing with tourist class passengers and express freight.

I know the Americans think they can do this, and I believe they can. If so, I refuse to believe that British air carriers cannot do the same.

K. M. BEAUMONT.

Air Transport for the Million

RETURNED SOLDIERS and ex-prisoners-of-war have made it clear that the vast majority of people neither expect nor desire a wonderful new world where everyone will be happy and rich. What the ordinary man hopes to get after the War is a decent job and a modest home for his wife and children. If Civil Aviation is properly used everyone in the armed forces should be assured of at least just that. On the face of things as they are now, there is more work to be done than there are people to do it. That state is going to continue for years to come. Thousands can only reach their jobs with the aid of a totally inadequate bus service, but without that aid it would be a physical impossibility for many to get to their work at all.

There is work and more than ample for all for the next 50 years staring us in the face, but under no conceivable circumstances can it be imagined that work will always be available at one's home door, or even close by. It is practical right now to extend the workers' bus service to the utmost ends of the earth with the aid of fast-flying aeroplanes, and thereby to give every man who wants it all the work he can do and a quick return to his own home should he so wish it.

It is up to the Aircraft Industry as a whole to see that aerial transport becomes by far the cheapest form of transport for workers, or even free to the individual operative on a special job (as it is now). It is an utter absurdity to argue that flying can never become really cheap. It can, it must and it will, and the people of this country are at last beginning to realise that Civil Aviation used on real Imperial lines is the one way, and the only one, that can move them to and from their work and allow them to retain their homes intact, the one thing they all want. Distance or spells away from home have never scared British people, but the vast majority are not pioneers, and definitely hate and fear the idea of breaking loose from their homes altogether. Who can blame them?

The expense? The answer to that is another question. Can any expense in money be anything like the late soul-destroying period of unemployment?

EX BELLO QUIES.

Prop Swinging Accidents

HAVING SERVED in both Wars, I beg to differ from Mr. C. G. Grey in his statement that one knows an A.C.2 to be the lowest form of human life. This certainly seemed to be the official attitude in the old days. I remember my first introduction to prop swinging on arrival at a Royal Naval Air Service Station, straight from recruit training at the dépôt. A chief petty officer with a face like Popeye said to me,—"Now skip away from that . . . thing quick when she fires or it'll cut yer . . . 'ead off. Boys are cheap enough, but if you get 'urt, there will be a bleedin' enquiry and I'm too busy for that sort of thing just now."

In the Royal Air Force to-day, things are quite different. An intelligent and highly trained A.C.2 is regarded as a valuable piece of "issue," more valuable, indeed, than many an administrative P/O., or even an aeronautical journalist. Unless, of course, the A.C.2 happens to be a "driver petrol" in the transport yard, in which case he is not regarded even as a human being.

L.G.D.

Jettisonable Fuel Tanks

AS MOST FATAL accidents in aeroplanes are brought about by fires which cause the fuel tanks to explode, would it be possible to make all fuel tanks jettisonable? I was a witness to one crash and I noticed that some of the crew could have been dragged out alive until the tanks exploded, and then it was absolutely hopeless to try to get anywhere near the aeroplane. If those tanks had been jettisoned some of the crew could have been saved. I am no expert on aircraft and I realise that the fitting of these tanks would add more complications and perhaps lessen the bomb load, but it would be worthwhile if precious lives could be saved. The tanks could be stowed in the wings and fuselage in the same manner as bombs. Provision should be made so they could be jettisoned singly or otherwise. I should be interested to hear if jettisonable tanks could be fitted.

RAYMOND SIMS.

Wooden Construction

I WAS VERY GLAD to note in your issue of Oct. 29 that Mr. Saxon Mills has pointed out that in Mr. John Sizer's recent excellent articles on wooden construction no mention was made of the B.A.T. Bantam and Basilisk Fighters designed by Mr. Koolhoven in 1918, which unfortunately never came into service with the R.A.F. As a member of the British Aerial Transport Co. during the years 1919/1920 I was about to write to you on the same subject.

It is interesting to recall that a complete Bantam fuselage was exposed to the elements for many months on, I think, Inverkeithing Dock to test the suitability of the type of wooden construction employed to withstand all the varying climatic conditions which might be experienced in the case of a shipborne aeroplane. My recollections are that the test was most satisfactory and little deterioration of the structure was found to have taken place when the fuselage was finally returned to the Works for inspection.

This particular form of construction was, as you suggest, influenced by the Deperdussin designs with which Koolhoven was intimately associated.

It was a great pity that the B.A.T. fighter designs were never developed, but it can hardly be said that the B.A.T. Co., British Nieuport Co. and Alliance Aircraft were amalgamated, for when Lord Waring decided to curtail his aviation interests the B.A.T. Co. as such, was disbanded and its brightest technical brains and other personnel of the company had to seek employment elsewhere.

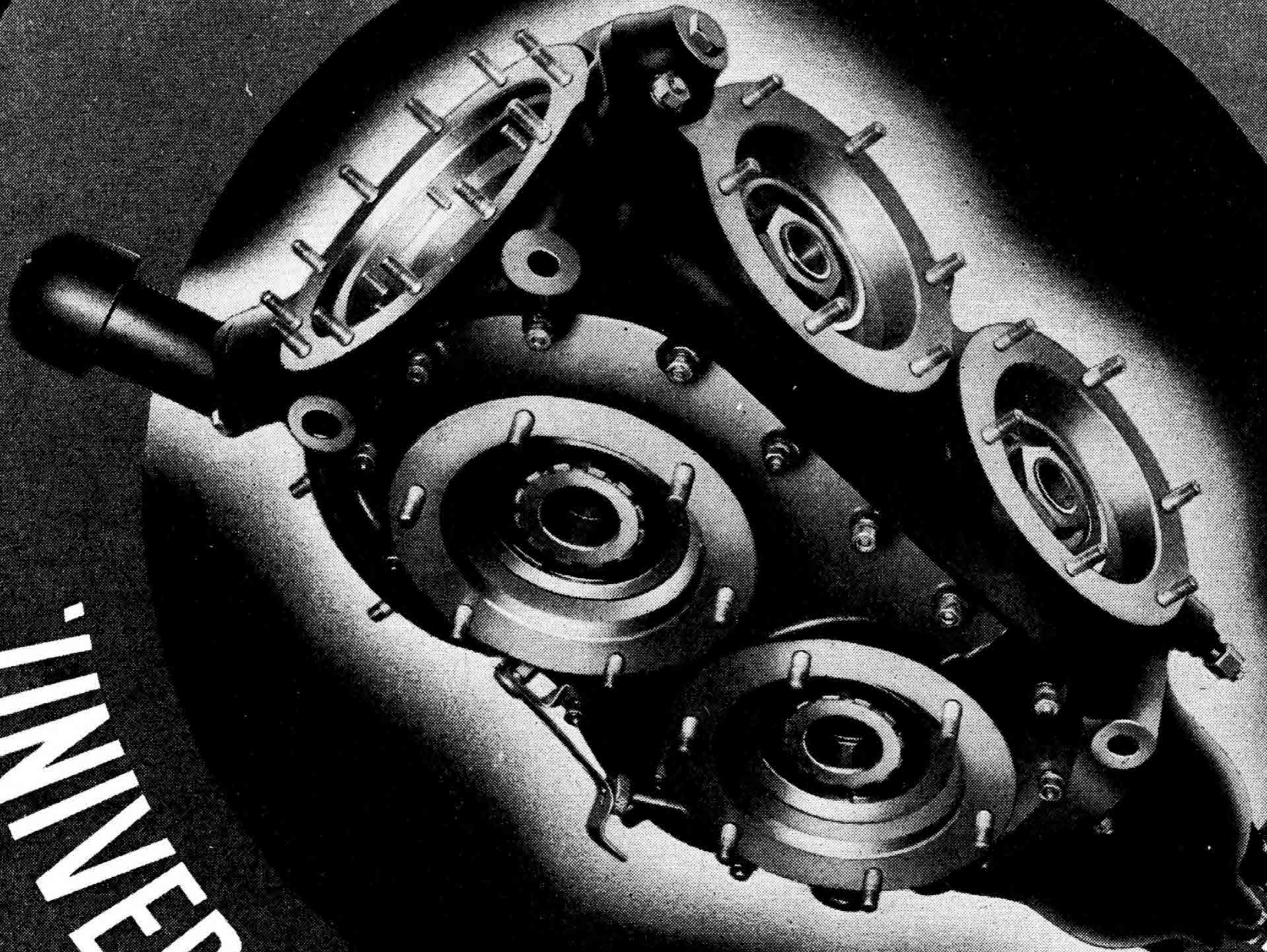
You are quite correct in assuming that R. B. C. Noorduyne was associated with Koolhoven, as he had been for many years and was, in fact, his right-hand technical man in the majority of the outstanding aeroplanes for which Koolhoven was responsible.

It was indeed unfortunate that from that time on Koolhoven's brilliant abilities in design were lost to this country and it is still more unfortunate that his genius may no longer be available to the aeronautical world in the future.

R. E. NICOLL.



ROTOLO



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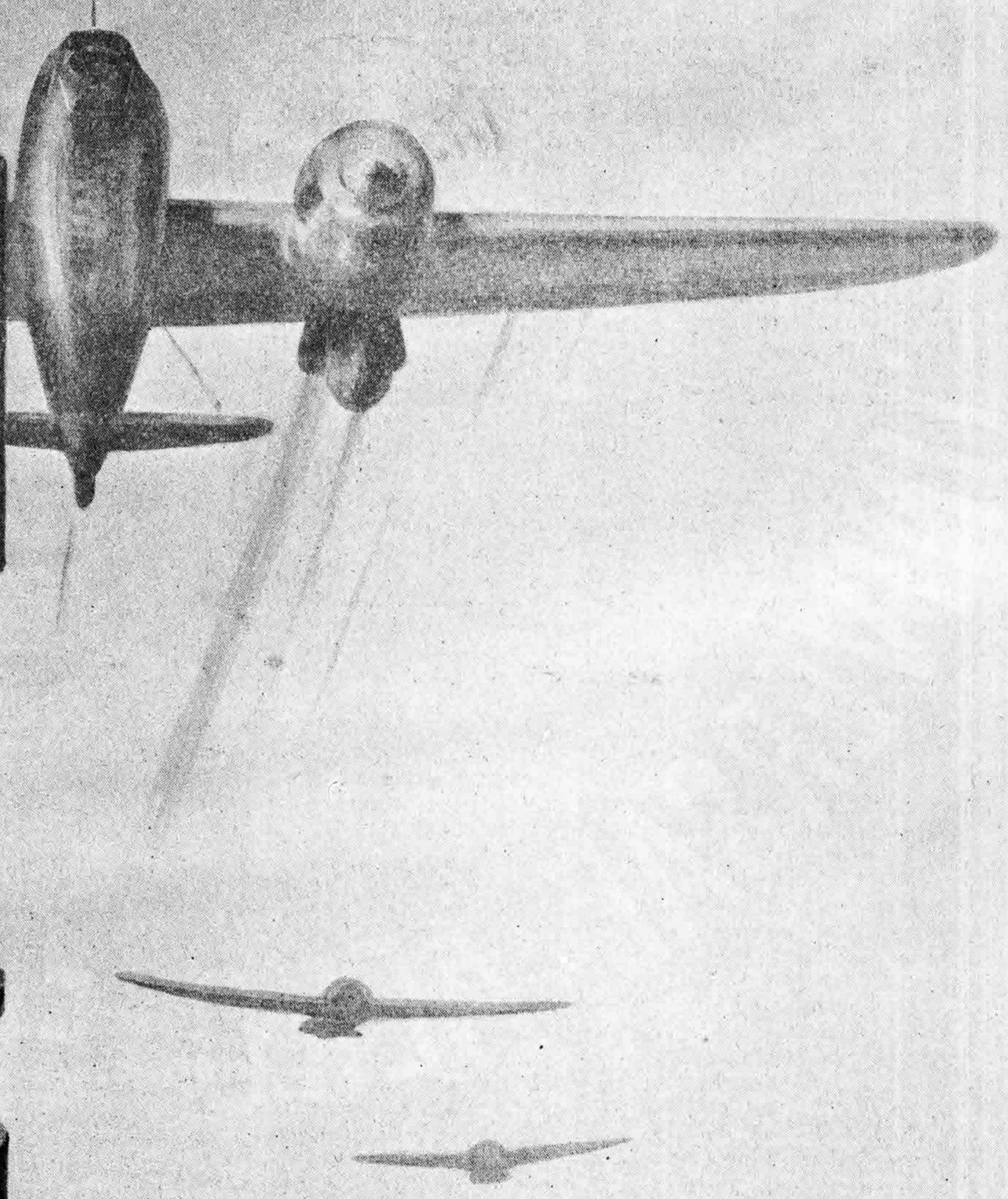
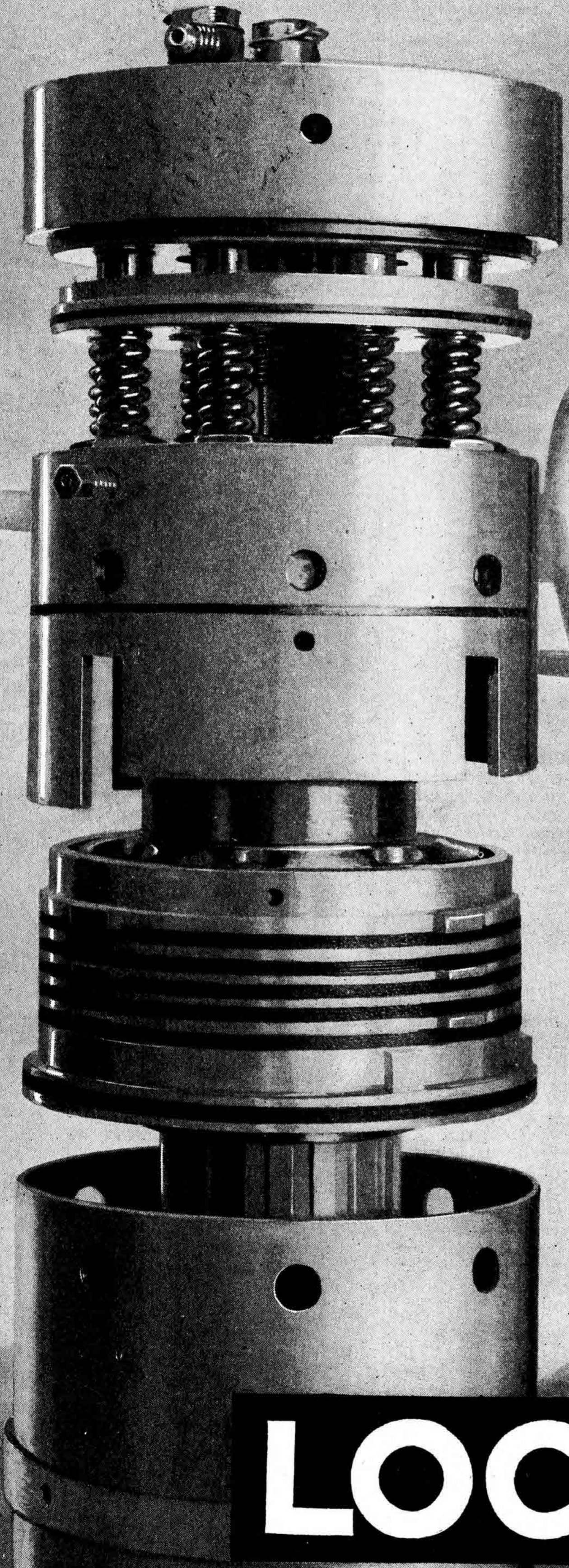
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NEWS FROM GERMANY

German Fallacies

GERMAN PRESS and radio claim that more than 52,000 Russian first-line aircraft have been destroyed by the Luftwaffe and Flak units since the outbreak of the war in the East and that this figure is rising daily by at least 50. The ratio of losses between Russian and German aeroplanes amounts to 20 to 1, according to the same sources.

There is no need for us to show how ridiculous such claims are if we only think of the statements about air victories which Luftwaffe fighters and bombers were asserted to have gained during the Battle of Britain. Even German public opinion does not seem to believe any more such announcements of the German High Command. This becomes apparent from a study of recent German publications, which try to explain to their readers the amazing fact that the Red Air Fleet is still most active, despite its supposed enormous losses.

German experts who have to enlighten their compatriots reported that on the average among 100 Soviet aircraft shot down were 45 fighters, 40 ground-attack, and about five machines of foreign origin, while the remaining ten were multi-motored aeroplanes. From the fact that only 5 per cent. of the destroyed aircraft were foreign, German aeronautical writers deduced that the assistance of Great Britain and the United States to their hard-pressed ally Russia had been negligible. This, however, is only a minor point. Of greater importance, the Nazi journalists continued, is the fact that only 10 per cent. of the destroyed machines were multi-motor. This is, in their opinion, evidence of the bad state of the Russian Air Force. They assert that an air force which must rely almost entirely on single-motor fighting aeroplanes has a striking power inferior to that of an opponent whose first-line strength is made up of a much greater percentage of twin- and even four-motor types.

The Nazi experts ask why the Soviets concentrate on the manufacture of single-motor machines. Their explanation is that their enemy has suffered such losses in the past, and is still losing so heavily every day, that it can only replace them by building "cheap" aeroplanes; that is, single-motor types. Further proofs of the "cheapness" of the present Russian front-line types are, according to the Nazis, the following facts:—

(1) Practically the entire Russian quantity production is concentrated on the manufacture of five standard types—four single-motor and one light twin-motor aeroplane. The fighters: MIG-3, YAK-1 and LAGG-3, the armoured ground-attack IL-2, the so-called Stormovik, and finally the light twin-motor bomber PE-2.

(2) The majority of the Russian fighting aeroplanes are built of wood and not of metal. These five standard types are, to quote these German reports, less thoroughly built than Luftwaffe machines; they have less instruments than machines of their class in other air forces; and

(3) The fighters carry an inferior armament, compared with standard fighters of other air forces. The latter point is hard to understand, in view of official German statements which a few months ago gave the armament of the MIG-3 as two 12.7 and three 7.6 mm. machine-guns, that of the YAK-1 and LAGG-3 as of 20 mm. shell gun and two 7.6 mm. machine-guns. Since then, many indications can be found in German publications that these three fighters carry a heavier armament than the one given above.

In order to complete the enumeration of the German reasons for the inferiority of the Red Air Fleet, a few remarks may be quoted regarding the Russian air crews. As in the case of British and American airmen, the new Russian pilots are said to be trained very hastily and are no longer a match for young German pilots, who, despite the great demands of war, are still being trained as thoroughly as before 1939. Furthermore, the morale of the Russian airmen is much lower to-day than in the first year of the Russian campaign, and this is, in the opinion of the Luftwaffe experts, a result of the losses, which must have been so heavy that the Soviet Command must even accept women as pilots and observers. The employment of women for operational flying still seems to puzzle German propagandists. While some state that these women are poor pilots, others point out that among fighter units made up of female crews are several which are first-class. So far the German reports may be summarised.

The fallacy of the German claims becomes apparent when they are analysed even superficially. To claim that a single-motor aircraft is a "cheap" one because it has only one motor and is built of wood is a contradiction of all previous German statements that the policy of an air force regarding types is directed by strategic and tactical considerations.

The Germans themselves pointed out, before and in the first years of the present War, that the "superiority" of the Luftwaffe was, among other reasons, a result of the clear conception of the part which an air force plays in warfare. Wars, German strategists claimed, cannot be won by one branch of the armed forces alone, but by concentration of the efforts of all three. Thus, operative air warfare, as envisaged by the British, according to many articles in the German technical Press before the War, could never bring about decisive results.

When talking about the "superiority" of the Luftwaffe, German experts never failed to boost the Ju 87 Stuka. The logical conclusion of this tactical conception was the manufacture in quantity of a few first-line types of simple construction which could quickly be built in great numbers. The Me 109, Fw 190, and the Ju 87 have played a far greater part in German propaganda than the Heinkel, Junkers, and Dornier bombers. Furthermore, for the past 15 months manufacture of single-motor fighters has been further increased at the expense of heavier types, in particular since British and American operative air warfare began to show results which the Germans had never expected. While this "Continental" type of policy was hailed by German strategists as a great achievement and proof of the Luftwaffe's strength, in the case of the Russians, its adoption shows only the weakness of the Red Air Fleet, according to them.

The fact that the Russians may easily concentrate on the manufacture of light co-operation types because they may obtain greater numbers of heavy twin- and four-motor bombers from their Allies than hitherto was deliberately not considered by the German propagandists. The reason for this omission was given by the President of the Economic Propaganda Board, Professor Heinrich Hunke, who stated:—"Our greatest danger is that we should become morally impressed by the possibilities of the war potential of our enemy."

The German claim that wooden construction must necessarily be inferior to all-metal is equally fallacious. When Italy joined Germany in 1940, German papers stressed the fact that the wooden aircraft of the Regia Aeronautica were not inferior to the all-metal ones of the Royal Air Force, and experts warned their readers not to assume that these Italian aeroplanes were of "cheap" type. "They are products of the great Italian craftsmanship of which the artists of the Renaissance are the most famous representatives."

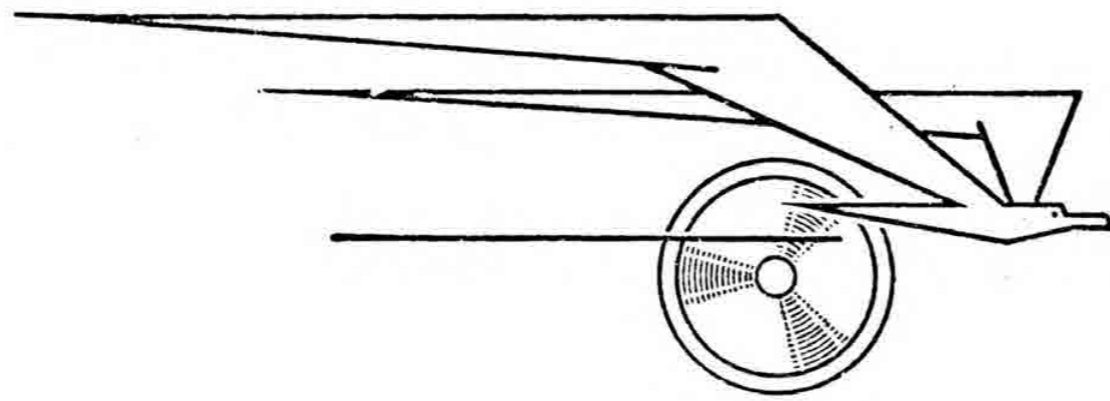
Following the successes of the Mosquito, these claims become ridiculous, in particular in the light of a recent article of a member of the Central Testing Laboratory of the Deutsche Versuchsanstalt fuer Luftfahrt, Berlin-Adlershof (Germany's Farnborough). This article, published in "Luftwissen," of April, 1943, concluded that the strength of Russian plywood as used for the manufacture of the MIG-3 and the YAK-1 was good, and that the birch-plywood used for construction of the LAGG-3 showed a "surprisingly high" strength, because of a glue of a phenol-formaldehyde basis.

Regarding the alleged poor state of training and the inexperience of Russian pilots, the recently increased number of obituary notes in German papers of Luftwaffe pilots killed on the Eastern front, among them many "aces," do not seem to indicate that even these "hastily trained" young Russian airmen are easy meat for the "best airmen in the World." Such statements have to be considered again as means to raise the morale of the home front and of the airmen themselves, in particular of the latter, since German training had to be made more rapid because of lack of operational training types and of fuel. Since the beginning of 1942 a steady decrease in the number of training hours has been observed and vaguely admitted by the more serious German papers. The fear that one day, in the not too far future, the "Richthofen Circus" may become a "Richthofen Kindergarten" was undoubtedly the reason for the claim that the Russian, and also the other Allied, airmen are no longer as well trained as hitherto.

Enemy Projects

ONE of the Luftwaffe's "back room" boys, Flieger-Ostabsingenieur Hans Busch, who is in charge of the Motor Department at the Luftwaffe's testing station Rechlin, read a paper before Swedish aeronautical experts at the end of September. Busch mentioned that the Rechlin station was capable of testing motors up to 6,000 h.p.

The Germans believed that such motors would be manufactured soon although at present the most powerful aero-engine, the Napier Sabre, had only 2,400 h.p., Busch also mentioned that a stratosphere aeroplane with a ceiling of 79,000 ft. would be produced in the future.



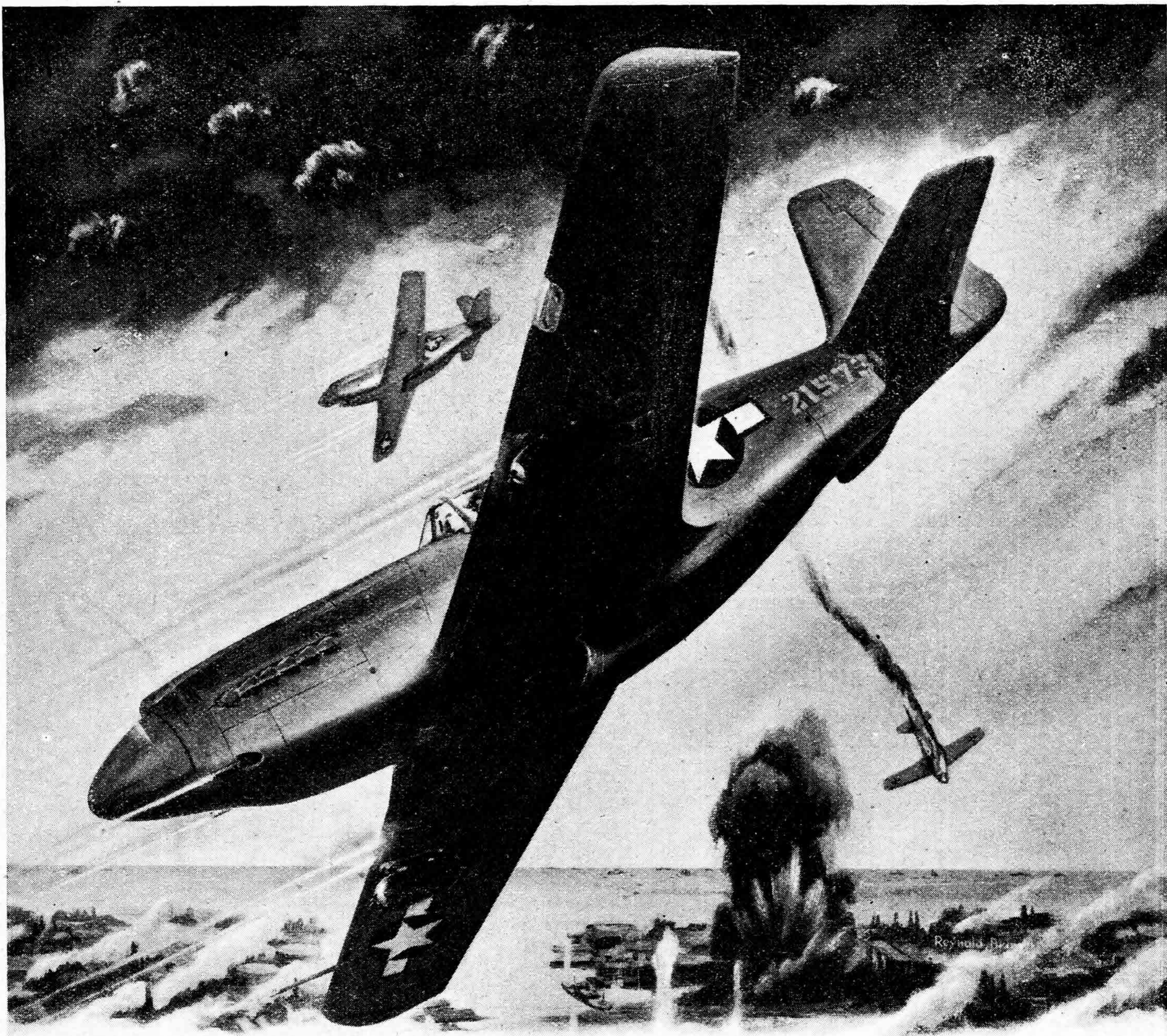
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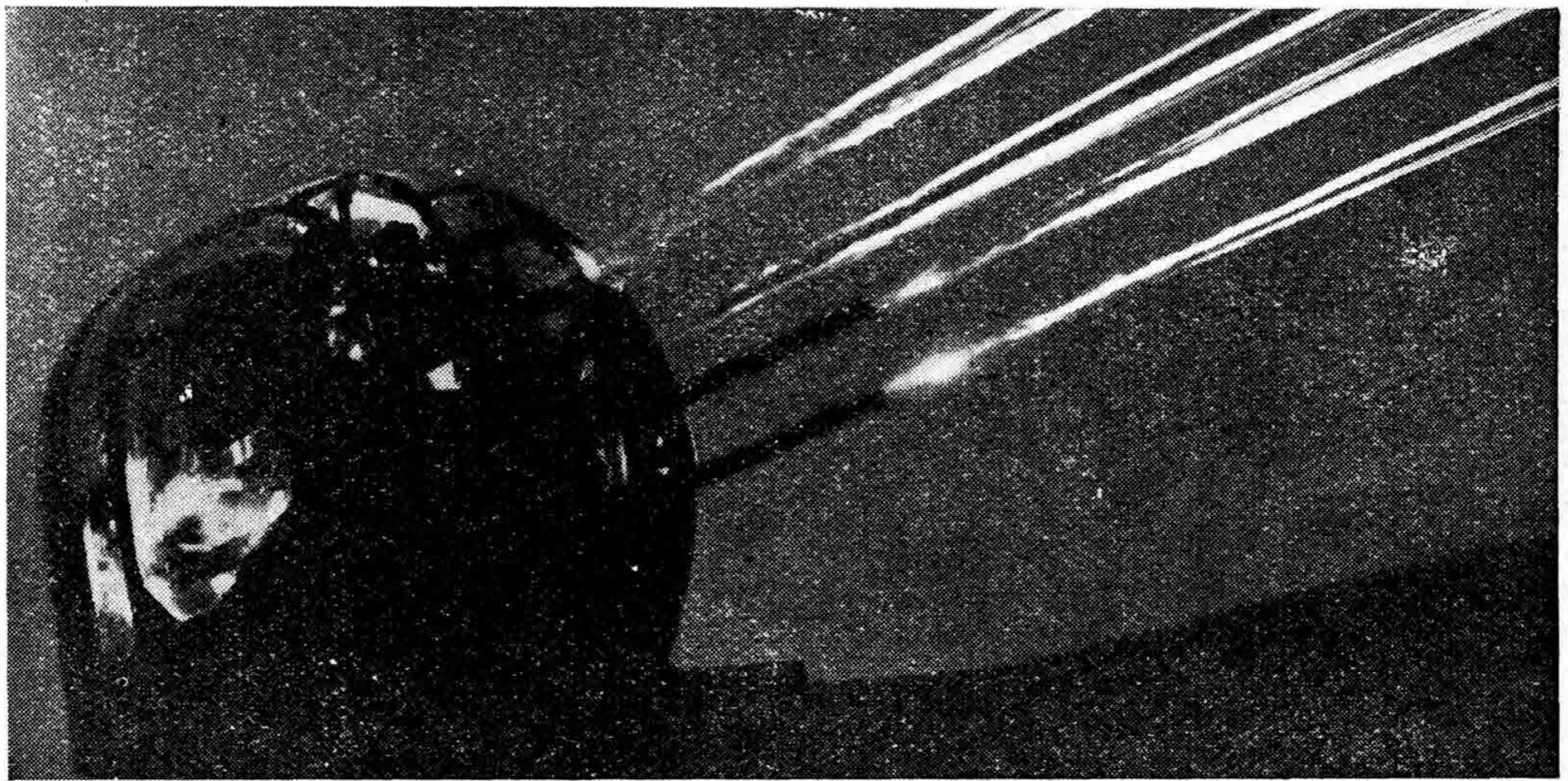
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- 1559062 Sgt. D. McL. Miller.
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- 125568 Act. F/L J. Reid.
- 1226671 Sgt. E. H. Roden.
- 1313073 Sgt. R. J. Small.
- 1235652 Sgt. T. A. Wood.
- 142320 P/O F. Worsnop.
- 1589302 Sgt. M. S. Barnard
- 1312983 Sgt. L. F. Jackson.
- 646251 Sgt. E. L. Jones.
- 1086977 Sgt. J. R. Laxton.
- 1813914 Sgt. T. S. Thomas
- 119227 F/O R. H. Andrews.
- 80153 F/O F. B. Biddulph.
- 1256512 F/Sgt. A. R. Bornick
- 841200 Sgt. A. Bryan.
- 641112 Sgt. F. R. Davies
- 136881 F/O H. M. Eltherington
- 139689 P/O J. Falejevas
- 148175 P/O P. Hobbs
- 1295447 Sgt. E. Y. Howes.
- 115053 F/O L. W. Kirby.
- 135885 F/O R. A. Mackenzie.
- 1237419 Sgt. J. Maden.
- 155212 P/O R. G. Pearcey
- 1393511 Sgt. E. H. Pegg
- 149158 P/O R. W. Peters, D.F.M.
- 1546295 F/Sgt. F. Pollard.
- 1621269 Sgt. R. Rushton.
- 130317 F/O J. J. S. Townsend, B.E.M.
- 1397951 Sgt. J. S. White.



"HOT LEAD."—An air-gunner keeps his hand in with some night-firing practice. The turret contains four .303 Browning machine-guns and is mounted on a trolley.

- Missing**
- 646930 Cpl. K. T. Alexander.
 - 1199806 Sgt. J. W. Bailey.
 - 113268 Act. F/L F. B. Birmingham.
 - 124718 F/O A. H. Blazer.
 - 1483382 Sgt. J. S. Blyth
 - 1078315 Sgt. H. Booth.
 - 1292885 F/Sgt. E. F. Bass.
 - 148473 P/O J. M. Brechin.
 - 624642 Sgt. J. F. Broadbent.
 - 155579 P/O A. Burns.
 - 1199686 Sgt. C. Burton.
 - 1389837 Sgt. W. H. Cade.
 - 526097 Sgt. A. Castle.
 - 131579 F/O J. H. Charnock.
 - 1349619 Sgt. W. B. Clarkson.
 - 119537 Act. F/L W. I. Covington, D.F.C.
 - 115138 F/O P. O. Davis.
 - 1077766 Sgt. F. Dawson.
 - 1210570 Sgt. F. E. Dudley
 - 1549502 Sgt. R. Fidler.
 - 657774 Sgt. A. J. Flower.
 - 1384586 Sgt. A. St. J. Floyd.
 - 128627 F/O S. W. Foster.
 - 657746 Sgt. L. Gardner.
 - 1320205 Sgt. R. K. Garment.
 - 658149 Sgt. R. Hadley.
 - 1311515 Sgt. R. Henshaw.
 - 924883 Sgt. C. S. Holter.
 - 1318454 Sgt. H. F. Hooper.
 - 978380 Sgt. F. Jackson.
 - 1336930 Sgt. J. H. Jenkins.
 - 129155 F/O D. Jimenez.
 - 81372 F/L H. A. Kidd-May.
 - 1576573 Sgt. A. W. Kind
 - 155895 P/O A. V. Kyle.
 - 1366684 Sgt. J. R. Laing.
 - 568949 F/Sgt. T. Lancashire.
 - 127096 F/O A. C. Lee.
 - 1396166 Sgt. W. J. Lee.
 - 1409321 Sgt. C. J. Lewingdon.
 - 139836 P/O I. R. Lewis.
 - 52064 P/O G. J. McCrae.
 - 128888 F/O W. B. McGinn.
 - 612755 Sgt. J. MacKnight.
 - 657904 F/Sgt. A. S. MacPherson.
 - 112021 Act. F/L I. F. MacWatt.
 - 1336854 Sgt. G. C. Major.
 - 798595 F/Sgt. L. C. Matthews.
 - 138471 F/O P. C. Moxham.
 - 1601305 Sgt. J. W. Neal.
 - 1603160 Sgt. P. J. Norreys.
 - 1148302 Sgt. J. Oxley.
 - 155834 P/O G. B. P. Patterson.
 - 1499191 Sgt. G. Petherfar.
 - 1578317 Sgt. J. A. Pitt.
 - 1060480 F/Sgt. S. Powell.
 - 1162051 Sgt. R. B. Pownall.
 - 624571 Sgt. J. F. Quickfall.
 - 2207432 Sgt. R. W. Richardson.
 - 1022420 Sgt. D. Rushton.
 - 100556 F/L G. A. Sawtell.
 - 1320718 Sgt. J. R. Shone.
 - 1318937 Sgt. H. R. Smith.
 - 1388725 Sgt. H. R. Snell.
 - 1131177 Sgt. G. I. Turnbull.
 - 1349870 F/Sgt. T. R. Urquhart.
 - 1078029 Sgt. K. R. Wallace.
 - 1312826 Sgt. J. Wardle.
 - 1380793 F/Sgt. A. Whiting.
 - 922520 F/Sgt. A. C. Wilder.
 - 1215893 F/Sgt. W. S. Williams.
 - 120627 Act. F/L R. H. Wilson.
 - 1381747 Sgt. D. A. Woods.
 - 1316368 Sgt. R. G. Woosnam.
 - 137226 F/O W. H. J. Yeo.
 - 1206608 Sgt. W. R. Acland.
 - 1054029 W.O. H. E. Allen.
 - 1323894 Sgt. R. F. Avis.
 - 141331 P/O C. P. Backlog.
 - 1336461 Sgt. J. A. Bacon.
 - 642079 W.O. W. C. Baker, D.F.M.
 - 656218 Sgt. D. J. Bigham.
 - 129175 F/O J. W. Brace
 - 658952 Sgt. B. Brear.
 - 132001 F/L M. C. Bridges.
 - 1585407 Sgt. R. B. Bull.
 - 632396 F/Sgt. D. Burke.
 - 1267080 Sgt. A. L. Butler
 - 67056 S/L W. R. Butterfield, D.F.C.
 - 1622527 Sgt. C. Chadwick
 - 1153105 Sgt. L. G. Chesson.
 - 655142 F/Sgt. E. J. Chmch.

- 1201005 Sgt. R. H. Cole.
- 1317957 Act. W.O. T. Collins.
- 1331079 Sgt. K. J. Cork.
- 658234 Sgt. J. F. Egan.
- 1031023 Sgt. D. M. Ellis.
- 960709 Sgt. G. W. Evans.
- 577661 Sgt. P. F. Fairweather.
- 1390228 Sgt. D. Fells.
- 1222635 Sgt. W. S. Flettton.
- 1289114 Sgt. F. J. Gallantree.
- 1337423 Sgt. K. E. Goodsell.
- 1376158 W.O. H. W. Graham.
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- 1296695 Sgt. D. E. Griffiths.
- 1263470 Sgt. M. Griffiths.
- 644474 Sgt. M. S. Grivell.
- 1237454 Sgt. J. A. Currey.
- 641244 Sgt. P. W. C. Higgs.
- 132094 F/O F. W. Holland.
- 1127600 F/Sgt. H. C. Hoyle.
- 134082 F/O A. B. W. Illius.
- 1370277 Sgt. W. B. Jamieson.
- 2207084 Sgt. K. Kendal.
- 963535 Sgt. J. G. Knight.
- 1559375 Sgt. D. Lamb.
- 570550 F/Sgt. V. C. Lewis.
- 1438476 Sgt. W. R. Lewis.
- 1089353 Act. W.O. J. H. Lowery.
- 143390 P/O G. W. MacDonald.
- 1350620 Sgt. S. J. MacEllenborough.
- 1552385 Sgt. T. E. C. K. McKeith.
- 124539 Act. F/L A. N. MacPherson, D.F.M.
- 91224 Act. S/L M. C. K. Mack.
- 1382408 Sgt. D. P. Martin.
- 1126661 Sgt. D. M. Menzies.
- 962998 Sgt. F. V. Messenger.
- 670757 Sgt. E. Middleton.
- 1263484 Sgt. C. G. R. Moll.
- 937174 Sgt. C. W. Moore.
- 1333923 Sgt. G. W. Osmer.
- 1333605 Sgt. H. G. Ott.
- 1507479 Sgt. N. Pendlebury.
- 39752 S/L A. P. Phillipsen.
- 1451351 Sgt. J. H. Phillips.
- 1543666 Sgt. R. G. Reay.
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- 1043804 Sgt. L. Richardson.
- 629070 Sgt. G. A. Ridge.
- Act. G/C B. V. Robinson, D.S.O., D.F.C., A.F.C.
- 618961 Sgt. W. H. Robiohns.
- 52715 P/O E. G. Sheil.
- 121451 Act. F/L I. C. B. Slade, D.F.C.
- 1435614 Sgt. D. Smith.
- 1341430 Sgt. A. S. Soutar.
- 1458478 Sgt. J. W. Standish.
- 1127348 Sgt. A. Stansfield.
- 1076636 Sgt. M. W. Stevenson.
- 124500 F/O J. W. Sturdy.
- 1129556 Sgt. L. W. Thompson.
- 42911 F/L A. M. Todd.
- 37580 W/C A. W. T. Trefill, D.F.C.
- 1254383 Sgt. J. G. S. Walker.
- 133086 P/O J. A. Webb.
- 138667 P/O D. J. Webster.
- 137191 Act. F/L H. Webster, D.F.C.
- 1864357 Sgt. P. A. Whitter.
- 656822 Sgt. W. K. Witham.
- 33366 S/L R. B. Wright.
- 62315 F/L J. T. Anderton.
- 138469 F/O S. Barrow.
- 1066641 W.O. A. P. Bates.
- 119919 Act. F/L W. H. Bewg.
- 132321 F/O J. S. Blunt.
- 1451959 Sgt. A. Brombey.
- 1515883 Sgt. R. Carlon.
- 139592 P/O G. H. Clarke.
- 113752 F/O S. J. Congdon, D.F.M.
- 133025 F/O M. H. F. Cooper.
- 1212445 Sgt. J. C. Cunningham.
- 652428 Sgt. G. R. Cutter.
- 114577 F/O J. T. Davidson.
- 1314707 Sgt. G. W. D. Dean.
- 710150 Sgt. K. N. Donald.
- 123892 F/O A. Fisher.
- 1322943 Sgt. A. M. Fox.
- 137520 P/O K. Gibson.
- 34123 W/C C. L. Gomm, D.S.O., D.F.C.

- 123684 F/O K. A. Gough.
 - 37967 S/L F. C. Griffiths, A.F.C.
 - 908561 Sgt. E. A. Hall
 - 1430273 Sgt. C. Harrison.
 - 1081356 Sgt. J. R. Harrison.
 - 1392504 Sgt. T. McL. Hay
 - 133518 F/O J. D. Hotson.
 - 1440434 Sgt. G. C. Jeffreys.
 - 971236 Sgt. R. L. Jones.
 - 138337 F/O A. L. Kellow.
 - 1035586 Sgt. J. Kirkman.
 - 124933 F/O R. T. E. Latham.
 - 1580187 Sgt. H. W. Lilley
 - 1304616 Sgt. A. E. Lloyd.
 - 1333442 F/Sgt. A. C. Ludgater
 - 1065235 Sgt. J. McAdam
 - 80046 S/L A. S. MacIntyre.
 - 1335760 Sgt. H. Maitland.
 - 551777 Sgt. K. E. Marriott.
 - 112440 Act. F/L S. G. Matkin, D.F.C.
 - 1384839 Sgt. J. H. Miller
 - 611292 Sgt. D. R. Morgan.
 - 1272021 Sgt. K. E. Moulding
 - 155393 P/O J. B. Paterson.
 - 126448 F/O T. J. Phillips
 - 52099 P/O H. N. Pritchard
 - 591849 Sgt. C. J. Purcell
 - 128667 P/O W. H. Richards.
 - 1434600 Sgt. N. J. Shergold.
 - 135632 F/O E. D. Skitt.
 - 80149 F/O J. Small.
 - 1213543 Sgt. R. Thornton.
 - 960685 F/Sgt. V. A. Weaver
 - 936166 Sgt. A. Whatmore.
 - 1586239 Sgt. R. W. Wilcockson.
 - 126857 Act. F/L L. K. Williams
 - 120422 F/O K. J. B. Wilson
- Missing Believed Killed on Active Service**
- 1602956 A.C.2 A. J. Clark.
 - 1617703 A.C.2 R. B. Watson.
- Killed on Active Service**
- 1545136 Sgt. R. B. Armitage.
 - 156578 P/O R. P. T. Akeroyd.
 - 930723 Sgt. H. L. H. Bainton.
 - 1378639 W.O. J. E. Biddle.
 - 817042 W.O. F. W. Brands.
 - 928757 F/Sgt. L. E. Burgess.
 - 1434605 Sgt. J. T. Chadwick.
 - 1390632 Sgt. R. S. Deason.
 - 1002308 Sgt. L. Fraser.
 - 1332884 F/Sgt. E. C. Hainsworth.
 - 1334033 Sgt. G. W. Hawkes.
 - 1048296 Sgt. T. S. W. Lawson.
 - 643639 F/Sgt. H. Nuttridge.
 - 1258970 Sgt. E. A. Ouster.
 - 940650 Sgt. V. H. Pears.
 - 86419 F/L E. M. Shannon.
 - 657534 F/Sgt. C. B. Simmons.
 - 50974 F/O MacD. Smith.
 - 1326409 L.A.C. P. G. C. Smith.
 - 1581060 L.A.C. L. G. Stone.
 - 1653419 L.A.C. E. C. F. Vosper.
 - 1421955 L.A.C. A. H. Witts.
 - 1129472 Sgt. R. Tattersall.
 - 1379371 Sgt. H. S. Wheeler.
 - 1578202 Sgt. K. Ashmore.
 - 1607365 L.A.C. D. V. F. Blindell.
 - 1285031 Sgt. R. W. Brown.
 - 1384167 Sgt. E. W. C. Bryant.
 - 1575884 Sgt. S. G. Cochrane.
 - 1114987 Cpl. F. L. Corbishley.
 - 1272593 Cpl. R. J. Cawley.
 - 1650609 A.C.2 F. Delaunay.
 - 801585 Cpl. E. C. Dodd.
 - 940083 Cpl. J. L. Gomm.
 - 1454671 Sgt. E. S. A. Gray.
 - 1073750 L.A.C. H. McK. Hall.
 - 1450065 L.A.C. J. R. Humphries.
 - 127173 F/O H. H. Kirby, D.F.C.
 - 1484947 L.A.C. C. Paul.
 - 1800826 Sgt. F. J. Pellatt.
 - 1547055 F/Sgt. F. Powis.
 - 801547 F/Sgt. A. E. Reynolds.
 - 801576 Cpl. W. J. Russell.
 - 1385621 Sgt. E. J. Sarra.
 - 46735 F/O P. W. Stokes.
 - 652775 L.A.C. D. Tully.
 - 1318286 L.A.C. S. A. Wakeham.
 - 1350101 L.A.C. J. R. H. Wilsea.

- 152162 P/O R. Wingham.
 - 1439441 Sgt. C. Yates.
 - 926805 L.A.C. A. W. J. Barbey.
 - 990569 Sgt. H. D. Chapman.
 - 1318376 Sgt. J. D. Clarke.
 - 1502683 L.A.C. S. Coe.
 - 1430704 L.A.C. D. Cooper.
 - 539303 A.C.1 H. Croft.
 - 978632 L.A.C. R. Dowds
 - 137338 F/O J. S. Greengrass.
 - 1319505 Sgt. N. M. Hansford.
 - 1379274 F/Sgt. R. J. Hutton.
 - 1243376 A.C.1 J. J. McCarthy, B.E.M.
 - 1445094 L.A.C. F. W. A. Mitchener.
 - 657862 Sgt. H. G. Montgomery.
 - 138002 F/O D. W. Noad
 - 1590746 A.C.2 R. S. Pearson.
 - 118182 F/O A. W. Robertson.
 - 1272064 Sgt. H. Sabini.
 - 1166117 F/Sgt. J. F. H. Sanders.
- Previously Reported Missing, Now Killed on Active Service, Presumed Killed on Active Service**
- 655341 F/Sgt. D. C. Brooks, D.F.C.
 - 89820 Act. F/L T. H. Carson, D.F.C.
 - 62649 F/O F. C. Hill.
 - 639582 Sgt. J. Luke.
 - 751520 F/Sgt. T. F. McCarthy.
- Previously Reported Missing, Now Presumed Killed on Active Service**
- 1091396 Sgt. J. Davison.
 - 1437407 Sgt. D. Dorn.
 - 656273 Sgt. R. Egerton.
 - 61246 F/O J. H. Haigh.
 - 122241 P/O G. L. Sellars.
 - 514188 W.O. C. M. Browning.
 - 1313675 Sgt. P. L. Hauser.
 - 1147170 Sgt. J. Johnson.
- Previously Reported Missing, Now Reported Killed on Active Service**
- 1029148 Sgt. J. Burns.
 - 1392625 L.A.C. P. Hunt.
 - 752960 L.A.C. A. F. Mawby.
 - 951314 L.A.C. S. R. Williams.
- Wounded or Injured on Active Service**
- 1506923 Sgt. D. B. Evans, G/C S. R. Ubee.
 - 1811038 Sgt. J. G. Wookey.
 - 1097573 L.A.C. G. H. Birkett.
 - 993191 L.A.C. A. V. Newill.
 - 700877 L.A.C. D. Antaki.
 - 1322663 L.A.C. L. V. D. Ellinor.
 - 1515967 L.A.C. W. Grayson.
 - 1383212 F/Sgt. R. Gristwood.
 - 1348785 L.A.C. N. J. Hill.
 - 939897 Sgt. J. Hirst.
 - 933027 Cpl. B. Humber.
 - 1242157 A.C.1 T. J. A. Jones.
 - 807334 Cpl. G. L. Kane.
 - 1355136 Cpl. A. Manion.
 - 1400294 L.A.C. T. J. Morgans.
 - 1653913 A.C.1 R. Pinder.
 - 1303106 L.A.C. H. A. Seaman.
 - 1189459 L.A.C. H. Steers.
 - 1447028 L.A.C. G. W. Stringer.
 - 1271577 Sgt. E. H. Tiernan.
 - 1259391 L.A.C. H. R. V. Wallis.
 - 1348261 L.A.C. J. Wightman.
- Died of Wounds or Injuries Received on Active Service**
- 1515999 L.A.C. E. Spencer.
 - 1315638 L.A.C. J. M. Whaley
 - 1407959 L.A.C. M. C. Arkell.
 - 1187752 L.A.C. E. H. Dipple.
 - 1391605 L.A.C. J. Hayden.
 - 1413370 L.A.C. L. R. Jarvis.
 - 111480 F/O G. Johnstone.
 - 1223204 Cpl. C. H. Leaver.
 - 1220896 L.A.C. B. Morgan.
 - 1809081 A.C.1 G. H. Newman.
 - 1390270 L.A.C. J. Parkes.
 - 1355517 Act. Cpl. W. Rogerson.
 - 1216081 L.A.C. H. A. Russell.

Died on Active Service
 1428846 L.A.C. A. H. Butterfield.
 A/C A. H. Orlebar,
 C.B.E., A.F.C.
 1869633 A.C.2 D. A. Prior.
 1425485 A.C.1 A. Smith.
 111468 F/O A. V. Amberg.
 60590 F/L H. E. Hayter.
 1554384 L.A.C. P. G. Black.
 752251 L.A.C. R. J. Carter.
 1456366 L.A.C. J. G. Davis.
 1314513 A.C.1 J. Delahunty.
 655506 Sgt. G. E. Downton.
 1688616 L.A.C. H. Duckworth.
 2209445 A.C.2 R. E. Fawcett.
 141785 P/O I. G. F. W. Hamilton.
 1084998 L.A.C. J. D. Mohring.
 100738 Act. F/L G. W. Nickerson,
 M.M.
 145436 P/O B. W. Norman.
 923128 L.A.C. R. G. V. Parsons.
 976154 L.A.C. R. M. D. Petrie.
 1871722 A.C.1 D. L. Phillips.
 1201278 L.A.C. F. E. Porter.
 1247022 L.A.C. A. J. Pryor.
 1146916 L.A.C. A. E. Stock.
 43589 S/L S. Wickenden.
 1084551 L.A.C. J. V. Young.

Previously Reported Missing, Now Reported Prisoner of War
 43368 Act S/L B. L. Duckenfield, A.F.C.
 1316456 Sgt. J. Dawson.
 1052293 Sgt. J. B. Harrison.
 634191 Sgt. R. M. E. Harrison.
 776168 Sgt. E. J. Havnar.
 1537949 Sgt. R. Jones.
 1434090 Sgt. M. J. J. Maher.
 848364 Sgt. M. K. Matthews.
 1200546 Sgt. W. G. Styles.

WOMEN'S AUXILIARY AIR FORCE

Died on Active Service
 469853 A.C.W.2 E. E. Warren.

ROYAL AUSTRALIAN AIR FORCE

Killed in Action
 Aus.401699 F/Sgt. J. R. Kraemer.
 Aus.412853 P/O J. Smithers.

Previously Reported Missing Believed Killed in Action, Now Presumed Killed in Action
 Aus.405154 Sgt. J. M. Jeffries.
 Aus.408736 Sgt. R. I. Robb.

Previously Reported Missing, Now Presumed Killed in Action
 Aus. 8063 Sgt. F. Proctor.
 Aus.408713 F/Sgt. C. B. Sullivan.
 Aus.403685 Sgt. N. T. Byrne.
 Aus.400981 Sgt. R. A. Gotts.
 Aus.403169 F/Sgt. A. R. Grainger.
 Aus.400228 F/Sgt. L. C. Laver.
 Aus.407255 Sgt. B. W. Shearer.
 Aus.404414 F/Sgt. D. A. Smith.

Wounded or Injured in Action
 Aus.412896 F/O S. W. Burney.

Died of Wounds or Injuries Received in Action
 Aus.415789 F/Sgt. R. H. Haskins.

Missing Believed Killed in Action
 Aus.407972 P/O F. A. Preston.

Missing
 Aus.403012 Act. F/L E. Dampier-Crossley, D.F.C.
 Aus.403045 W.O. E. D. Fogden.
 Aus.409046 F/Sgt. F. N. Hamood.
 Aus.404519 F/O J. M. McLean,
 D.F.C.
 Aus.413032 P/O R. J. Ratchliffe.
 Aus. 16890 Sgt. A. Scott.
 Aus.413709 Sgt. R. D. C. Smith.

Aus.403245 F/O J. C. Valder.
 Aus.409265 F/Sgt. W. V. B. Winchester.
 Aus.205795 P/O R. J. Adams.
 Aus. 33244 Sgt. D. E. Bennington.
 Aus.412372 F/O I. W. Bowen.
 Aus.409503 F/Sgt. N. J. Bullen.
 Aus. 32957 Sgt. J. E. Challinor.
 Aus. 61002 Sgt. J. R. Dallas.
 Aus.422461 Sgt. J. G. Dwyer.
 Aus.401502 Act. F/L N. C. Gerrard.
 Aus.414034 Act. F/L H. K. Hornibrook.
 Aus.403746 W.O. F. H. Jones.
 Aus. 12840 F/Sgt. G. A. G. McLeod.
 Aus.412465 P/O F. G. Matthews.
 Aus. 16949 Sgt. W. E. G. Matthews.
 Aus.416601 F/Sgt. R. C. Naffin.
 Aus.413015 F/Sgt. L. K. Needs.
 Aus.415273 F/Sgt. E. J. Phillips.
 Aus.411383 P/O S. J. Ricketts,
 D.F.C.
 Aus.421631 P/O J. I. Rowland.
 Aus.405644 F/O K. D. Smith.
 Aus.415104 F/Sgt. D. J. Tresidder.
 Aus.405658 W.O. J. G. H. Webster.
 Aus. 12168 F/Sgt. A. L. Bathurst.
 Aus.406431 W.O. C. B. Campbell.
 Aus.411217 W.O. J. H. Dugan.
 Aus.411763 P/O V. B. Finn.
 Aus.425301 F/Sgt. E. H. Gunders.
 Aus.413622 F/Sgt. K. W. Longmore.
 Aus.416270 W.O. L. L. McKenny.
 Aus.411520 F/O A. H. Reardon.
 Aus.408784 F/Sgt. L. G. Simpson.
 Aus.408788 F/Sgt. R. J. Taylor.
 Aus.411059 F/O F. T. Thornley.

Missing, Believed Killed on Active Service
 Aus.413603 F/Sgt. C. J. Jamison.

Killed on Active Service
 Aus.421608 Sgt. J. W. Mudie.
 Aus.402980 F/O G. F. Wood,
 D.F.C.
 Aus.402235 W.O. A. K. Farlam.
 Aus.426012 P/O H. M. Beyer.
 Aus.420941 F/Sgt. F. I. Hardaker.
 Aus.420489 F/Sgt. A. D. Riordan.
 Aus.420066 Sgt. L. G. Sellen.
 Aus.420091 F/O A. J. White.

Previously Reported Missing, Believed Killed on Active Service, Now Presumed Killed on Active Service
 Aus.405084 Sgt. A. G. Rees.

ROYAL CANADIAN AIR FORCE

Killed in Action
 J. 10166 Act. F/L L. H. Burden.
 R.150855 Sgt. W. H. Moffat.
 R.117605 Sgt. C. A. Brennan.

Previously Reported Missing Believed Killed in Action, Now Presumed Killed in Action
 R.150671 Sgt. J. F. Barnes.
 R. 87480 F/Sgt. B. M. Chamney
 J. 15415 F/O W. W. H. Corneliuis.

J. 16056 P/O J. L. Davidson.
 R.103842 Sgt. H. A. Hansen.
 R.104836 F/Sgt. R. M. Jupe.
 R.119175 Sgt. L. E. Kellaway.
 J. 9770 F/O J. I. Mackenzie.
 R. 86750 F/Sgt. P. H. Mitchell.
 R.125754 F/Sgt. H. B. Moore.
 R. 87591 F/Sgt. D. O'Neill.
 R. 71536 F/Sgt. W. O. Powell.
 R.110955 Sgt. N. W. Roberts.
 J. 17008 P.O. G. G. Stanley.
 R.122988 Sgt. A. H. Thiessen.
 R. 92287 Sgt. W. V. Wallace.
 R. 77427 Sgt. P. F. Yellin.

J. 15845 P/O W. T. Bent.
 R.125806 Sgt. D. E. Roberts.

Previously Reported Missing, Now Presumed Killed in Action

R. 62274 Sgt. H. Davenport.
 R.100760 Sgt. R. M. Agnew.
 R. 74917 F/Sgt. F. Beml.
 R. 70608 F/Sgt. T. L. Bentley.
 R. 77354 Sgt. G. J. Beresford.
 R.106933 F/Sgt. L. W. Clark.
 R 95411 Sgt. J. C. Colter.
 J 16713 P/O J. B. Courtney.
 J. 17418 P/O D. E. Crockatt.
 J. 17446 P/O C. B. Dixon.
 R. 95730 F/Sgt. D. F. Evans.
 R.115677 Sgt. J. B. Frost.
 R. 76113 Sgt. N. A. Gardner.
 R.129349 Sgt. W. E. Hawke.
 R.101345 F/Sgt. V. C. Hayward.
 R. 77570 W.O. F. M. Holobow.
 R. 80084 F/Sgt. J. T. Hunt.
 R.119142 Sgt. E. H. Ingram.
 R. 93540 F/Sgt. P. King.
 R 95108 Sgt. J. F. Kirk.
 R. 73774 F/Sgt. J. L. B. Larin.
 J. 11258 F/O C. R. Long.
 R. 94724 F/Sgt. D. W. Lowther.
 J. 16935 P/O K. W. Macdonald.
 J 17600 P/O J. R. Marriott.
 R. 79239 Sgt. G. Mathews.
 R. 79291 F/Sgt. W. McK. Murdoch.

R. 92679 F/Sgt. D. O'Neill.
 R. 61926 Sgt. I. A. Penner.
 R.103187 Sgt. D. C. Plaunt.
 R. 86912 F/Sgt. R. G. Rispin.
 J. 16141 P/O W. W. Roy.
 R.102577 Sgt. R. A. P. Sheffield.
 R. 84338 F/Sgt. S. Sleeth.
 J. 16380 P/O A. J. Smith.
 R.104320 Sgt. J. L. Sturdy.
 R. 95518 Sgt. J. A. J. L. Viau.
 J. 16151 P/O W. A. Walkinshaw.
 R.108809 Sgt. D. H. Waugh.
 R. 77317 Sgt. R. S. Woolley.
 R. 87671 Sgt. M. Ben-Hertz.
 J. 5909 F/L J. L. Ellam.
 R.130273 F/Sgt. E. S. Masson.
 J. 7603 F/O A. D. Melville.
 R. 79133 Sgt. D. R. Ross.
 J. 7520 Act. F/L O. R. Waterbury, D.F.C.

R. 92803 Sgt. A. J. Wilson.

Wounded or Injured in Action
 J. 16159 F/O S. T. Smith.

Missing Believed Killed in Action
 R.160583 Sgt. C. Green.
 R.178279 Sgt. A. A. Hadiken.
 R.116462 Sgt. R. R. Keeler.
 J. 20384 F/O P. J. McGarvey.
 R.172270 Sgt. H. Clement.
 J. 14450 P/O G. N. Goodwin.

Missing
 R.102469 F/Sgt. K. R. Bourne.
 J. 10576 F/O D. C. W. Clark.
 J. 26047 P/O M. Clark.
 R. 4302 Sgt. E. D. Cornelius.
 J. 16186 F/O R. W. Dawe.
 R.155969 Sgt. R. R. Kirk.
 J. 11494 F/O A. W. Little.
 J. 22488 F/O G. S. Low.
 R.113865 Sgt. W. R. McLellan.
 R. 80314 Sgt. B. E. Mitchell.
 J. 17345 F/O S. Noble.
 R.161985 Sgt. D. S. Phillips.
 R.137561 Sgt. J. E. Roach.
 J. 20885 P/O L. T. Sibbald.
 R.115984 Sgt. R. F. Shortridge.
 R. 85937 F/Sgt. M. Smith.
 R. 86553 Sgt. W. A. Tennant.
 R. 88244 W.O. O. L. Bliss.
 R.147412 Sgt. R. C. Brooks.
 R.179452 Sgt. J. H. Brown.
 R. 65249 F/Sgt. D. A. J. Cameron.

J. 18448 P/O W. D. Craig.
 R.119305 Sgt. D. W. Dufton.
 R. 85356 F/Sgt. A. G. Foster.
 R.152439 Sgt. H. J. Hahn.

J. 4768 F/O M. W. McGregor.
 J. 18231 P/O W. P. MacD. McIntosh.

R.173738 Sgt. H. S. Martin.
 J. 17729 P/O R. W. Nixon.
 R.146401 Sgt. C. Robinson.
 R. 78434 W.O. R. A. Scott.
 R.146094 Sgt. C. W. Snyder.
 R.110876 Sgt. P. Tomchyshyn.
 R.134276 Sgt. T. A. T. Williams.
 R.114240 F/Sgt. A. A. Balcombe.
 J. 7453 F/O J. R. Carswell.
 J. 9388 F/O M. I. Fraleigh.
 J. 21713 F/O A. J. F. Hay.
 R.125903 F/Sgt. R. G. Needham.
 J. 17065 P/O J. W. O'Hara.
 R.101627 F/Sgt. J. Perkins.
 J. 13765 P/O G. N. Rattee.
 J. 5831 Act. F/L J. R. Sterne,
 D.F.C.

R.112684 Sgt. L. M. Stormer.
 J. 14504 F/O R. P. Swallow.
 J. 21573 F/O C. A. Tindall.

Killed on Active Service

J. 1390 F/L H. C. Bennett.
 J. 15049 F/O R. Mendizabel.
 R.164677 Sgt. T. W. Pickering.
 R. 87222 F/Sgt. A. A. Johnston.
 R.132649 Sgt. E. S. McCuaig.
 R. 87882 F/Sgt. T. Main.
 J. 16279 P/O S. L. Pettingdale.
 J. 7746 F/L B. W. Pritchard.
 J. 12568 F/O E. E. Smith.
 J. 8453 F/O H. M. Tarver.
 J. 15699 F/L A. G. Tatton.
 J. 20180 P/O N. J. Tuchtie.
 R.104222 F/Sgt. H. C. Ward.

Died of Wounds or Injuries Received on Active Service

R.157968 Sgt. V. J. Surbey.

Previously Reported Missing, Now Reported Prisoner of War
 J. 16483 P/O D. S. Ross.

ROYAL NEW ZEALAND AIR FORCE

Previously Reported Missing, Believed Killed in Action, Now Presumed Killed in Action
 NZ.403012 F/Sgt. I. Kennedy.

Previously Reported Missing, Now Presumed Killed in Action
 NZ.412888 F/Sgt. G. D. Loftus.
 NZ.403822 F/Sgt. W. R. Parkes.
 NZ.404937 F/Sgt. R. W. S. Penny.
 NZ.391713 Sgt. G. H. Rose.
 NZ.403035 F/Sgt. E. G. Wilson.
 NZ.404059 F/Sgt. S. I. Gallagher.
 NZ.414986 Sgt. K. J. Johnson.
 NZ.414656 P/O E. R. Markland.
 NZ.404108 Sgt. R. S. Whitcombe.

Missing, Believed Killed in Action
 NZ.416966 F/Sgt. D. G. Aubrey.
 NZ.412861 Sgt. A. G. Bennett.
 NZ.414872 Sgt. L. J. Frost.
 NZ.413103 F/O I. Marinovich.
 NZ.412908 Sgt. T. J. Soper.
 NZ.413515 F/O L. A. Trigg, D.F.C.

Missing
 NZ.415529 F/Sgt. A. D. Harris.
 NZ.416542 F/Sgt. A. F. Rose.
 NZ. 41900 F/Sgt. C. G. Hamilton.
 NZ.404426 Act. F/L R. C. C. Taylor.

NZ.413954 F/O J. Whyte.

Killed on Active Service

NZ. 40916 P/O B. C. Dreaver.
 NZ.404100 F/Sgt. J. P. Simmons.

Previously Reported Missing, Now Reported Prisoner of War
 NZ. 41621 Sgt. W. P. Hermansen.

SOUTH AFRICAN AIR FORCE

Killed in Action
 206642 Lt. O. L. Dugmode.

EXTRACTS FROM THE LONDON GAZETTE

Air Ministry, June 1, 1943.

WOMEN'S FORCES

WOMEN'S AUXILIARY AIR FORCE.—Sec. Off. (prob.) S. E. Nash-Gourlay relinquishes her commn. on account of ill-health. May.
 To resign their commns.:—Sqn. Off.: May: B. M. Hill. Sec. Offs.: M. U. Keeling, E. A. De Paula, M. G. Brenner
 The commn. of Asst. Sec. Off. (prob.) A. H. Orr is terminated. May.

Air Ministry, June 4, 1943.

ROYAL AIR FORCE

GENERAL DUTIES BRANCH.—The folg. are granted the rank of Gp. Capt. (war subs.)—Air Cdre. (temp.): Apl.: R. M. Foster, D.F.C. Gp. Capt. (temp.): G. H. Vasse.
 The folg. are granted the rank of Wg. Cdr. (war subs.):—Gp. Capt. (temp.): Apl.: R. C. Jonas. Wg. Cdrs. (temp.): Mar.: J. O. W. Oliver, D.S.O., D.F.C., H. Eeles, H. A. V. Hogan, D. G. Lewis, D.F.C., G. F. W. Heycock, D.F.C., M. B. Edwards, W. M. Keddie, A. J. W. Geddes, O.B.E., G. G. Barrett. Apl.: G. L. Best, R. Cleland, K. J. McIntyre, O.B.E., J. C. Millar, E. R. E. Black, O.B.E.
 The folg. are granted the rank of Sqn. Ldr. (war subs.):—Sqn. Ldrs. (temp.): Feb.: D. J. French, D.F.C. Mar.: J. W. Marsden. Flt. Lts. Feb.: J. Goodhead. Mar.: A. E. Lowe, M.B.E.
 Flg. Offs. to be Flt. Lts. (wa: subs.):—Feb.: P. G. Roberts (2nd Lt. R.A.C. T.A.), R. S.

Williams, D.F.C. (Sen. Feb. 5). Mar.: A. H. Webster, D.F.M., G. R. Brown, D.F.C. (2nd Lt. R.A.), F. P. Burnard (Sen. Mar. 5), G. Goodman (Sen. Mar. 12). Apl.: P. A. R. Keates, G. W. Horton (Sen. Feb. 3), A. Cody, P. T. Ward, A. G. E. Dixon, D.F.C. May: R. W. Bass, A.F.M., P. Brown, H. J. Rayner.

Flg. Off. P. G. Ottewill is granted the rank of Flt. Lt. (war subs.) Mar.
 Plt. Off. E. W. Holford to be Flg. Off. (war subs.) Apl.

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Sept., 1942. E. F. Thornycroft. Oct., 1942: T. M. Bosworth-Waite. Nov., 1942: R. Gibson. Jan.: F. C. Reed. Mar.: J. L. S. Taylor, N. Ainsworth. Apl.: L. W. Rookley, G. H. Allen, F. A. Birt, G. L. Skinner, W. R. Hyde, D.F.C., C. B. Watson, P. J. S. Evans, J. F. Potter, D.F.C., G. T. Allen, J. Davis, C. A. Dear, D.F.C., K. T. Garnett.

TECHNICAL BRANCH.—Wg. Cdrs. (temp.) granted the rank of Wg. Cdr. (war subs.):—Apl.: H. G. Blair, W. C. Cooper, D. M. T. Macdonald.

The folg. are granted the rank of Sqn. Ldr. (war subs.):—Wg. Cdr. (temp.): Aug., 1941: J. K. Tough. Squ. Ldr. (temp.): Mar.: G. D. D. Gammack.

The folg. are granted the rank of Flt. Lt. (war subs.):—Flt. Lts. (temp.): Mar.: J. Goodman, C. D. Moore, C. E. Bicknell, A. A. Austin, F. H. H. Rowe, R. C. Henry, J. M. Arthur. Apl.: W. L. Sharrman. Flg. Off. (since promoted): Jan., 1942: E. J. Ryder.

Plt. Offs. (prob.) to be Flg. Offs on prob. (war

subs.):—Mar.: L. J. Chandler, H. A. Fenner. Apl.: J. Sydney, P. Green, C. McD. Wood. May: G. S. R. Cannon, J. Wright, H. A. Oxley (Sen. Jan. 26), H. W. Adams.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—June, 1942: S. F. Rogers (Sen. Feb. 1, 1942). Nov., 1942. T. G. B. Sayers (Sen. Mar. 13, 1942). Dec., 1942: R. D. Short (Sen. Nov. 15, 1942). Jan.: A. Hogg (Sen. Dec. 4, 1942). May: B. Catling, P. E. Colman, W. G. Coombes, F. J. C. Cooper, L. Creighton, E. L. Dauphin, W. T. Glazier, W. Heaton, A. H. Jones, W. E. Jones, E. R. Maynard, G. A. A. Roberts, S. A. Weeks.

The notifu. of Apl. 30 concern. K. H. H. Ellis is cancelled.

AMENDMENTS.—The notifu. of Nov. 27, 1942, concern. J. R. Turner should have appeared under Tech. Br. and not Admin. and Spec. Duties Br. In notifu. of Jan. 1 concern. J. J. C. Darley, for Darley read Oakley.

In notifu. of Apl. 30, for B. M. S. Smeed read B. A. S. Smeed.

BALLOON BRANCH.—Plt. Off. (prob.) F. T. Sibbons to be Flg. Off. on prob. (war subs.). Feb. (Sen., Jan. 24.)

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—The folg. are granted the rank of Flt. Lt. (war subs.):—Flt. Lts. (temp.): Mar.: R. W. Hurst, H. F. Knight, Flg. Off. F. J. Thompson. Plts. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Mar.: R. H. Freeman, W. Rowan, G. S. Cartwright (Sen. Feb. 8), J. Stevenson. Apl.: D. M. Halliday, R. A. F. Quick.



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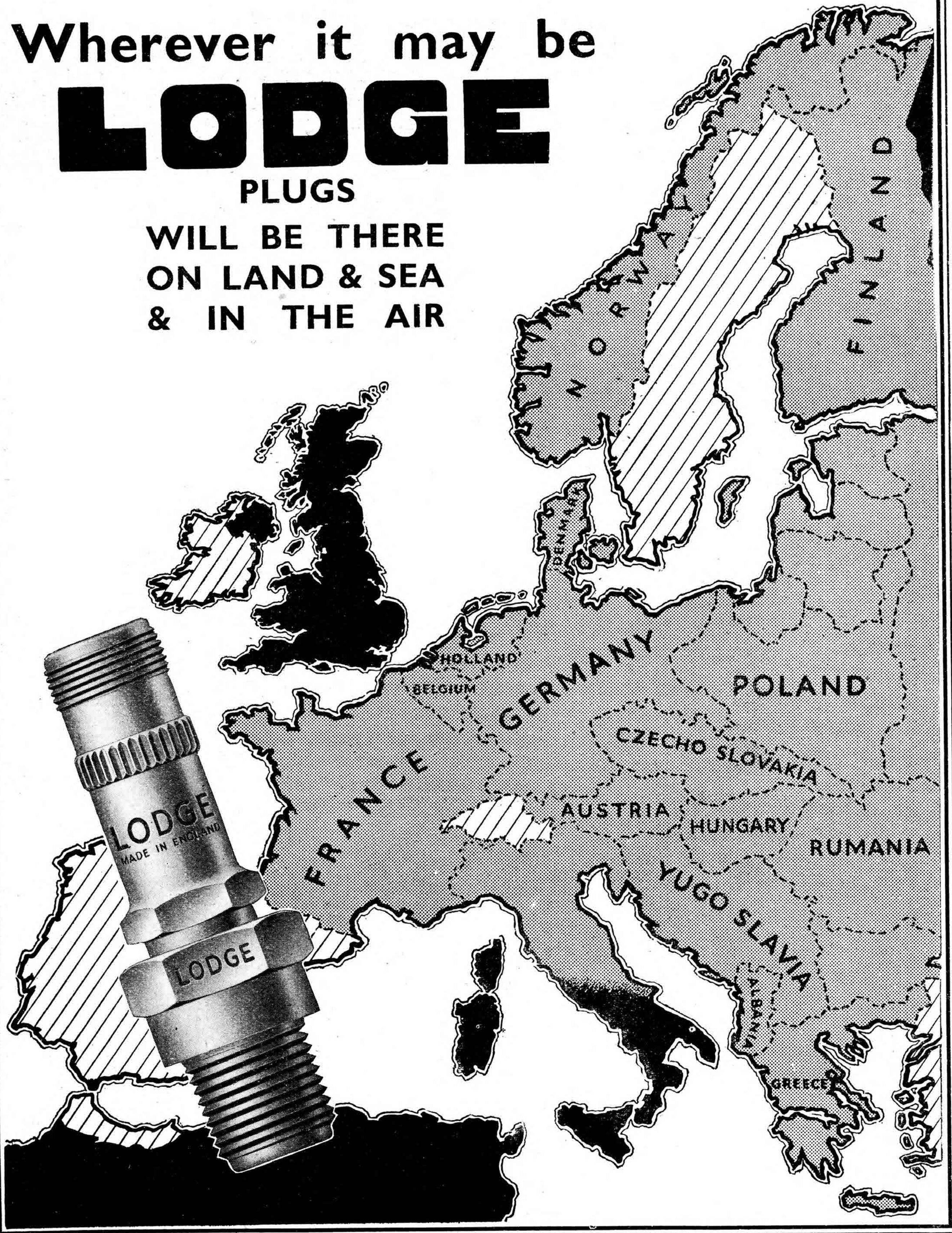
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Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—
Apt. F. D. Swift, J. A. H. Armstrong, May: H. Flinton, J. Nee, S. J. Overton, F. Turner, G. H. Haynes, E. C. Roberts, A. G. Tarling, June: R. G. Hill.

Act. Plt. Off. (prob.) F. T. Harrop to be Plt. Off. (prob.) Feb. (Subs. for notifi. of Mar. 5)

The notifi. of Dec. 30, 1941, concern. D. R. Smith is cancelled.

The notifi. of Jan. 6, 1942, concern. C. S. Tucker is cancelled.

EQUIPMENT BRANCH.—The folg. are granted the rank of Sqn. Ldr. (war subs.):—

Sqn. Ldr. (temp.): Mar.: W. R. Ford.
Flt. Lt.: I. G. S. Hemming, Feb.

Flt. Lts. (temp.) granted the rank of Flt. Lt. (war subs.):—Mar.: T. F. H. Hudson, J. M. Horner, F. W. Hammond.

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Nov., 1942: W. H. Kent, W. E. Allen.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—May: A. Childes, R. F. Russell.

ACCOUNTANT BRANCH.—Wg. Cdr. (temp.) S. C. George is granted the rank of Wg. Cdr. (war subs.) Feb.

Sqn. Ldr. (temp.) G. R. Bowler is granted the rank of Sqn. Ldr. (war subs.) Feb.

The folg. are granted the rank of Flt. Lt. (war subs.):—Sqn. Ldr. (temp.): Dec., 1940: P. H. Baker, Flt. Lts. (temp.): Mar.: E. H. Stamp, W. K. G. Nicholls.

AMENDMENT.—In notifi. of Apl. 23, concern. list of names commencing with J. Brodie and ending with K. C. Lounds, for Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.) read Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.)

MEDICAL BRANCH.—Sqn. Ldr. (temp.) H. P. R. Smith, M.B., B.Ch., M.R.C.S., L.R.C.P., is granted the rank of Sqn. Ldr. (war subs.) Apl.

RESERVE OF AIR FORCE OFFICERS

GENERAL DUTIES BRANCH.—Wg. Cdrs. (temp.) granted the rank of Wg. Cdr. (war subs.):—Mar.: P. I. Harris, D.F.C., J. B. Tatnall, H. A. Fenton, D.S.O., D.F.C. Apl.: G. A. Simons.

The folg. are granted the rank of Sqn. Ldr. (war subs.):—Sqn. Ldrs. (temp.): Feb.: J. A. Bateson, E. J. Gracie, D.F.C. Mar.: P. Burnett, A. S. B. Blomfield, D.F.C., G. R. Magill, D.F.C., J. R. D. Braham, D.S.O., D.F.C., I. B. Westmacott, D. F. C. E. Holden, D.F.C. Flt. Lts.: Nov., 1942: C. A. Webster, Jan.: C. V. Ogden Mar.: J. Barraclough, D.F.C., A.F.C.

TECHNICAL BRANCH.—Flt. Lt. (temp.) M. G. Parker is granted the rank of Flt. Lt. (war subs.) Mar.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—Flt. Lt. (temp.) R. A. Kendrick is granted the rank of Flt. Lt. (war subs.) Mar.

Flg. Offs. to be Flt. Lts. in class CC:—Apl.: P. M. de la Coze, V. Holt, E. L. Masters, P. E. Owen, A. J. Reddish, W. Smith, W. N. Wilkins (subs. for notifi. of May 7).

MEDICAL BRANCH.—Wg. Cdr. (temp.) L. M. Corbet, M.B., B.S., is granted the rank of Wg. Cdr. (war subs.) Apl.

Sqn. Ldr. (temp.) P. A. Wilkinson, M.R.C.S., L.R.C.P., is granted the rank of Sqn. Ldr. (war subs.) May.

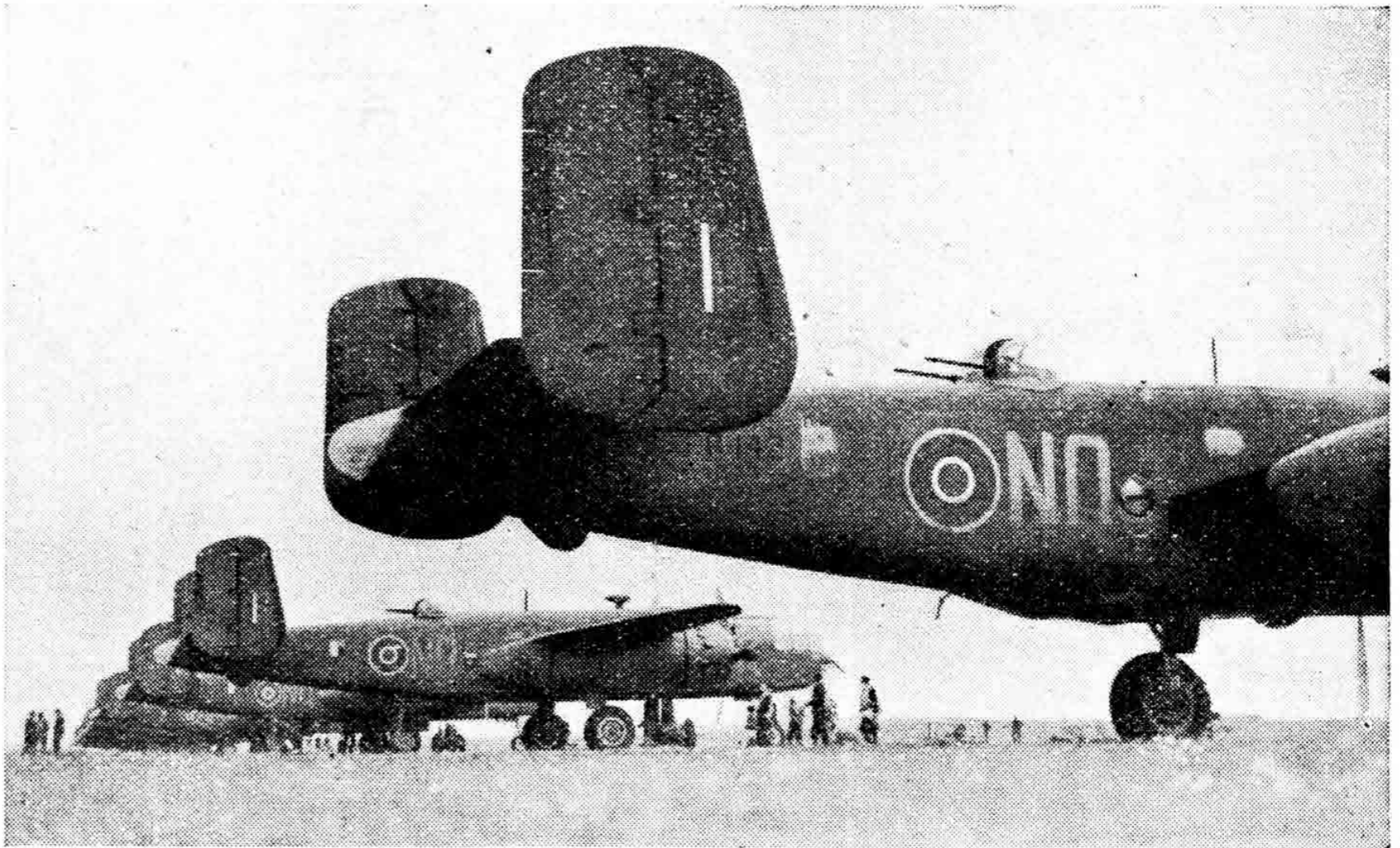
ROYAL AIR FORCE VOLUNTEER RESERVE

GENERAL DUTIES BRANCH.—The folg. are granted the rank of Sqn. Ldr. (war subs.):—Sqn. Ldr. (temp.): Mar.: H. G. Goddard, D.F.C., A.F.C. Flt. Lts.: Dec., 1942: M. A. Johnson, D.F.C. Mar.: R. Berry, D.F.C. Apl.: W. G. Lockhart, D.S.O., D.F.C.

Flg. Offs. to be Flt. Lts. (war subs.):—Oct., 1940: J. W. T. Taylor, H. Baron, Apl., 1942: V. V. L. Clarke, Aug., 1942: J. A. F. Attwell, Dec., 1942: E. B. H. Robertson, Feb.: D. E. Walker (Sen. Jan. 26), J. Shepherd, D.F.C., P. H. G. Wintle, D.F.C., P. A. Woodger, D. W. Shaw (Sen. Feb. 16), R. B. Roache, G. N. Taylor (Sen. Feb. 12), R. E. Stout, G. Williams (Sen. Nov. 7, 1942), J. C. White (Sen. Feb. 19). Mar.: C. E. Bradley, H. R. Fielding, P. A. S. Rumbold, G. H. Wright (Sen. Dec. 23), P. F. Smith, G. C. T. Richards, E. J. Pullen, D. A. Thompson, Apl.: R. B. Cole, N. H. Carfoot, E. H. C. Kee, C. C. Lockyer, J. F. Marshall (Sen. Jan. 21), D. A. W. Loader, C. L. Harris (Sen. Apl. 9), N. G. Wingfield, H. S. Dunn, F. Harding, M. C. Knight, L. M. Sweeney, J. G. Francis, P. H. C. Theodosiou, E. C. Jenvey, K. M. Simpson, R. H. Farrell, J. D. Hawkins, J. P. Mills, E. H. A. Vernon-Jarvis, V. D. Page (Sen. Apl. 9), B. J. Thwaites, J. M. Frost, J. R. C. H. Graves, G. L. Mandeno, C. R. Sanders, P. G. Hill, May: A. B. G. Barclay, R. E. Lowe, M. J. Gardener.

Flg. Offs. granted the rank of Flt. Lt. (war subs.):—Nov., 1942: H. G. Hazelden, D.F.C. Dec., 1942: L. H. Bartlett, Jan.: D. H. Griffiths, C. B. Morton, D.F.C. Feb.: E. W. Anderson, G. W. Garton, D.F.C. Mar.: H. L. Holliday, D.F.C., I. G. Fadden, W. V. Crawford-Compton, D.F.C.

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Sept., 1942: R. P. East, T. R. Poynton, Oct., 1942: F. Grenfell, T. J. Thomas, A. E. Walker, A. V. S. Wilson, B. A. Robinson, G. L. Shackleton, Nov., 1942: L. Whiteley, R. O. Lewis, S. G. J. Lane, R. R. G. Keeler, Dec., 1942: T. S. Matthews, Jan.: I. C. Campbell, A. Honig, D.F.M., R. W. Reynolds, J. L. Howie, Feb.: E. J. Clarke, Mar.: J. A. Rowan-Parry, F. J. Flote, R. J. S. Clarke, B. G. Overton, I. Boyd, G. W. Turner, J. Boyd, J. D. Cazes, P. R. Fowler, H. A. Sharville, J. Stott, S. R. Vickery, A. C. Gallacher, W. C. Henderson, F. Perkins, D. W. Connor, H. A. Simms, S. W. Anderson, A. D. H. Hawley, C. Hayley, H. C. Richardson, H. Taylor, Apl.: W. H. Aldrich, J. C. Garton, J. N. Dennis, R. K. Betchley, P. A. Disney, A. J. McKirdy, G. Paine, W. Hirst, D.F.M., A. F. Goodman, P. M. Hollins, H. McM. Chalmers, A. P. Goodman, J. Howarth, H. L. Shepherd, D. W. Attwood, R. C. J. Bray, E. Wharton, A. D. Alford, J. E. Bruton, C. Burne, R. G. Crouch, R. J. Davis, E. N. Fisher, H. S. Gibbons, J. A. B. Gibbs, K. Ruskell, G. Russell, E. G. Seall, J. F. Shepherd, A. T. Taylor, S. J. H. Verney, L. V. Warboys, R. D. Ward, A. E. Whiteside, J. W. Wilkinson, R. J. S. Wilton, A.



TAIL-PIECES.—North American Mitchell II bombers of a Dutch squadron bombing up for a day raid on enemy occupied territory.

Woodward, F. L. Yates, D. J. Atherton, E. J. Cole, F. G. French, B. O. Green, J. H. Hannibal, N. N. Heckford, C. G. Lacey, R. J. T. Stirling, J. F. Wearing, J. R. Westcombe, R. Westerland, R. W. Wilkins, E. H. Thomas, A. J. C. Akehurst, S. J. P. Blackwell, D. McGibbon, W. V. Mollett, A. F. P. Stanislaus, J. E. T. Wilkinson, F. C. S. Williams, J. G. Brewster, D. Grimshaw, L. E. Lindsey, P. Lynch, J. V. Billett, A. T. Bruce, W. A. Handley, A. W. Sinclair, L. Stalker, E. F. Watts, N. E. Brown, P. E. V. De Carteret, J. Paton, P. J. Stack, D.F.C., S. Brooke-Wavell, K. Coates, A. D. Cross, J. B. Luddington, A. McEwen, G. K. Main, J. L. Seymour, L. E. S. Spackman, G. Stevens, W. L. Thacker, C. D. B. White, W. C. Woodruff, C. Clews, M. A. Chapman, D. W. Munson, D. L. Timmins, K. Truelove, J. D. Barnson, G. Barrett, W. F. Caldwell, D.F.M., A. N. Crookes, A. Flett, H. F. Lewis, R. D. Cave, C. E. T. Bryan, R. E. Dobson, G. W. Hallam, P. N. Hines, J. R. Howard, J. E. Hussey, W. G. Kirkham, D. F. Langham, G. McVitty, R. V. Munday, B. Poyser, R. D. Rosser, A. J. Trenerry, T. Wilkie, J. T. Adamson, J. L. R. Brown, R. M. Chambers, K. Cotton, F. A. Halls, D. Kuhnel, H. L. McDowall, R. C. Muir, J. M. Porter, R. A. Rose, F. Shield, G. A. W. Smith, R. F. M. Taylor, A. G. McA. Watson, J. B. Wheeler, A. Williams, L. W. Fairbanks, W. H. Allison, H. J. Bone, C. Curry, G. E. Dewell, P. E. Mitchell, D.F.C., P. A. Wheeler, B. J. L. Dodd, B. E. Hooke, W. H. Hopkins, D.F.C., C. P. Reynolds, G. H. Scobie, H. C. J. Spraggs, A. W. Valey, B. Cottrell, D. C. Goodwin, G. G. Tebble, G. W. Carter, G. D. Ulrich, A. V. J. Barber, D. J. Boston, G. H. Briggs, D. R. R. Brown, R. Christie, J. L. Clifton, E. C. Colcomb, A. W. Douglas, E. E. Evans, A. C. W. L. Fairbrother, T. A. Garcia, G. S. Gibson, J. Goode, W. J. Green, J. P. Hart, W. Hemmings, E. R. Lacey, D.S.O., W. T. Mennell, J. E. Meredith, E. R. Mills, I. G. Pollock, W. A. Roe, R. S. Rowe, E. D. Schofield, A. W. Shearer, W. McA. Wallace, W. Whitehouse, G. C. P. Wyeth, May: G. Platts, E. V. Domone, L. G. McCoy, G. R. G. Gimblett.

Plt. Offs. (prob.) granted the rank of Flg. Off. on prob. (war subs.):—Sept., 1942: E. F. Chandler, D.F.M. Apl.: R. E. Gardiner, J. R. Brind.

The folg. 13 promotions are promulgated in substitution of the notifi. which appeared on Aug. 7, 1942:—

Flg. Offs. to be Flt. Lts. (war subs.):—Oct., 1940: S. E. Fleet, M. R. Holdengarde, M. A. Johnson, D.F.C., E. P. Kleynhans, A. S. McIntyre, L. R. Oliver, G. M. Palmer, G. C. Robinson, C. L. Sindall, B. D. White, C. P. Chilvers, H. S. Hales, Nov., 1940: J. Walmisley.

The folg. notifi. are cancelled:—Notifi. of Aug. 7, 1942, concern. Flg. Off. M. C. H. Barber. Notifi. of Aug. 7, 1942, concern. Flg. Offs. P. C. Fletcher, D.F.C., and M. B. Bowker and Plt. Off. H. Baron. Notifi. of Aug. 7, 1942, concern. Plt. Off. M. B. Bowker.

AMENDMENT.—In notifi. of May 21, for F. T. Brookes read F. T. Brookes.

TECHNICAL BRANCH.—Flt. Lts. to be Sqn. Ldrs. (temp.):—Jan.: F. E. Tyndall, E. Vredenberg, M.B.E. (Sen. Dec. 1, 1941).

The folg. are granted the rank of Flt. Lt. (war subs.):—Flt. Lts. (temp.): Mar.: A. I. Bray, K. B. S. Willder, F. H. Davies, P. Allden, E. Vredenberg, M.B.E., R. W. Sutton, Flg. Off. H. Robinson, M.M.

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—June, 1942: T. M. Fox, Mar.: F. G. Mann, Apl.: W. T. S. Brain, G. G. Reed, F. D. W. Roach, A. B. Bone, W. Jamieson, A. N. Ranken, C. C. Toyne, R. L. Peuleve, D. Haley, B. J. N. Hayes.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—Aug., 1942: H. G. Manfield, R. P. Rutherford (Sen. July 17, 1942), Dec., 1942: E. H. Copsey, Jan.: B. R. Bennett, E. G. Berg, D. Curry, H. F. Dickie, W. C. H. Eakin, N. Eaves, E. Haynes, J. B. Howat, R. Ingham, K. A. Joseph, A. E. Leonard, J. J. Lion, A. Morton, C. H. Napier, D. G. Richards, A. G. Salter, E. F. Saunders, M. L. T. Sinclair, R. C. Smith, C. Tudor, C. C.

Tue, J. I. Vincent, W. J. Wagstaff, J. Wyatt, R. A. Reid, H. S. Jones (Sen. Oct. 6, 1942), D. W. J. Dare (Sen. Oct. 7, 1942), S. Forrest (Sen. Oct. 11, 1942), F. E. Wyer (Sen. Oct. 23, 1942), C. A. Reid (Sen. Oct. 29, 1942), G. W. Thomas (Sen. Nov. 3, 1942), R. V. B. Arnaboldi, W. W. Clearie (Sen. Nov. 6, 1942), G. McLean (Sen. Nov. 13, 1942), N. Mays (Sen. Nov. 16, 1942), P. Donohue (Sen. Nov. 27, 1942), J. C. Eaton (Sen. Nov. 29, 1942), E. W. Birtwistle, A. H. Doveton (Sen. Dec. 11, 1942). Apl.: W. W. Bulbrook, D. H. Parsons, May: L. T. H. Greig, G. H. King, H. P. T. Parker, E. W. J. Church.

The notifi. of May 14 concern. Plt. Off. P. Fitzhugh is cancelled.

The notifi. of Apl. 23 concern. P. Roe should have appeared under Tech. Br. and not Admin. and Spec. Duties Br.

BALLOON BRANCH.—Flt. Lts. (temp.) granted the rank of Flt. Lt. (war subs.):—Mar.: R. F. J. Brooke, B. W. B. Chapman.

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Feb.: E. H. M. Eaves, J. R. L. Kitcher, M. Kotkin (Sen. Jan. 22), W. H. Coxill (Sen. Jan. 24), R. E. Staddon.

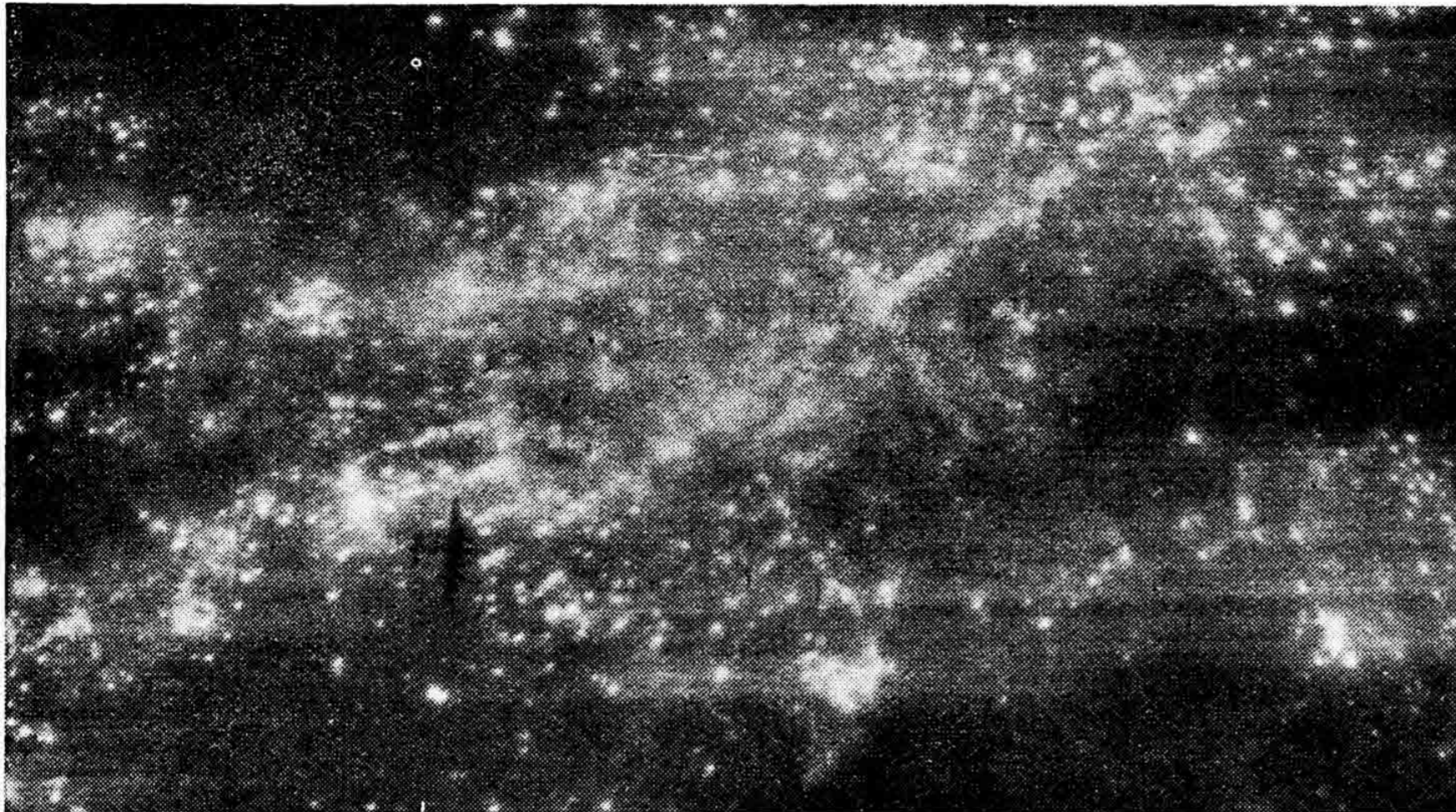
ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—The folg. are granted the rank of Sqn. Ldr. (war subs.):—Sqn. Ldr. (temp.): Apl.: M. E. Brown, Flt. Lts.: Mar.: E. S. Vincer, H. Arnold, W. D. L. Rayner, M.B.E., T. H. E. Edwards Apl.: E. P. L. Baker.

The folg. are granted the rank of Flt. Lts. (war subs.):—Flt. Lts. (temp.): Jan.: E. G. Brant, T. A. H. Beddington, Mar.: P. J. Greenacre, G. M. Emerson, D. H. Clifford, F. R. E. Clark, K. Turnbull, W. J. Mathews, R. D. Iiyem, S. G. G. Humphreys, J. C. Murray, H. R. Herbert, G. W. Butcher, P. F. Trotter, R. E. James, K. H. Bain, J. E. L. Lewington, C. V. L. Hooman, R. L. Simpson, A. F. Carlton-Scott, E. A. Collis, G. W. Ball, N. R. G. Hunter, C. R. Millbourn, P. Higson, R. E. Bland, H. R. J. Sprinks, W. T. Eccles, J. B. B. Atherton, R. I. Jones, W. S. Grace, J. H. L. B. Davies, G. W. Stallard, J. G. Collins, D. R. H. Levett, C. A. Hopkins, Apl.: J. L. Hillary, T. G. Skinner, J. P. Ward, Flg. Offs.: Dec.: D. A. Adkins, Mar.: A. F. Buchan, T. F. Griffin, Apl.: A. R. Benbow.

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Oct., 1942: M. Clapham, W. J. Luton, J. B. Taylor, Jan.: H. C. L. Young, Mar.: D. R. Lee, H. Morris (Sen. Jan. 21), J. D. H. Lamont (Sen. Jan. 26), E. A. L. Reynolds (Sen. Dec. 16, 1942), F. R. Rollinson (Sen. Jan. 19), J. H. Collins, P. Darlington, H. G. S. Orton, H. A. Coles, J. H. E. Duke (Sen. Dec. 8, 1942), H. Chapman, R. Rust, Apl.: L. A. Whitlock, J. Bunyan, E. Armitage (Sen. Dec. 11, 1942), D. Beech, D. L. Vinall, N. B. Hull, F. S. Wright, June: G. G. D. Rennie.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—Nov., 1942: L. R. H. Bell (Sen. Nov. 5, 1942), Jan.: M. W. C. Prior, Mar.: P. F. D. Brookes, Apl.: D. M. Cox, A. E. Dodworth, W. T. Eden, R. Gallagher, D. W. I. Newton, A. R. Worthington, May: B. P. M. Mulcahy, R. H. Backwell, E. G. Baxter, C. S. Boss, J. Y. H. Bowden, D. S. Brown, L. W. Carney, E. A. Cohen, J. H. Cole, N. S. Cole, L. A. Coles, J. Condie, W. J. Culverwell, J. C. Diamond, J. H. Dickson, L. H. Fancett, G. Fleet, L. Gillett, A. Gilruth, R. Grant, K. J. Hanford, L. P. Hardy, F. Harvey, I. S. Hepper, W. Hudson, J. A. Joyce, J. V. Lach, E. Lewis, G. A. H. Lewis, C. Longshaw, W. P. Lynn, G. P. McVitty, J. S. Milborrow, J. F. Mitchell, C. J. Nicolson, J. B. Ogle, H. Pendlebury, W. B. Robb, C. L. Ross, K. J. Ross, J. A. Scardifield, W. A. Skinner, L. C. Stanford, A. F. Strachan, F. H. Walmisley, C. G. Webb, C. H. Alexander, A. T. Allaway, T. Allison, A. H. Ashworth, G. B. Bell, J. Bell, J. H. Boyd, S. J. Bradbrook, J. R. Bradshaw, G. H. M. Bryson, R. H. Bunch, W. Corcoran, R. Coton, L. Darlow, D. G. Davies, J. Davy, H. J. Dawson, R. H. Evans, G. F. L. Feltham, L. B. Frewer, J. C. Gagg, G. J. Gimblett, F. W. Goldsmith, C. A. Gulliford, R. W. Harris, K. A. Hodgson, E. G. Johnson, H. Jones, N. R. Long, P. D. Lough, F. A. L. Macdonald, A. E. Mason,

Air Ministry, June 8, 1943.



DURING THE RAID.—Part of Hanover photographed during an R.A.F. raid. Thousands of incendiary bombs light it up. The Galle Strasse can be seen as a white streak across the photograph, and an Avro Lancaster is silhouetted. Compare with next picture.

G. H. Mayhew, T. H. Moore, R. E. W. Morgan, J. V. Morris, E. A. W. Mossey, T. R. Newton, H. W. Parslow, W. J. Randall, T. W. Roberts, H. A. Rogers, F. J. Saffery, C. N. Smee, F. S. Smith, J. Smith, J. F. Smith, D. W. Swain, L. Threadgold, F. C. Vickers, F. E. Wadley, A. C. Walker, J. Walker, T. Walmsley, C. Wannop, A. H. Warner, E. H. Wicks, L. G. Wrathall. June: W. E. Barton, K. H. B. Brown, J. J. Callander, R. W. Champ, B. Clanton, L. V. Davis, D. S. Gillham, G. R. Herrick, C. E. Ives, K. Mackenzie, K. H. Mason, A. T. Nance, D. B. Pertwee, H. A. B. Peters, S. G. Phillips, G. H. Pilkington, J. Robertson, M. Tibber, E. R. Turnham, F. E. Watts.

The notifi. of Aug. 7, 1942, concern. Plt. Off. G. Bryson, M.C., is cancelled.

The notifi. of Feb. 26 concern. J. B. Taylor is cancelled.

The notifi. of Mar. 19 concern. L. R. Meredith is cancelled.

The notifi. of May 7 concern. H. G. E. Stening is cancelled.

The notifi. of May 14 concern. Plt. Off. C. A. Gautier is cancelled.

AMENDMENTS.—In notifi. of Aug. 7, 1942, concern. Plt. Off. C. A. Gibbs, for Aug. 12 read July 1.

In notifi. of Mar. 26 concern. list of officers commencing with J. Allen and ending with P. L. Young, for Mar. 3 read Feb. 26.

EQUIPMENT BRANCH.—Flt. Lts. (temp.) granted the rank of Flt. Lt. (war subs.):—Mar.: G. M. Beer, W. S. Baddeley, M.B.E.

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Oct., 1942: C. A. Gates. Mar.: H. Sharpe, L. C. Snow, E. D. Watkins, F. E. Storry, F. S. Somerton, H. G. Richards. Apl.: A. E. Horbury.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—May: S. G. E. Dugay, J. D. Suter, S. G. Aves, J. C. H. Brackenridge, J. Dove, J. C. Ellis, M. R. C. Ellis, C. H. R. Griffiths, J. K. Hartley, W. McN. Houston, A. Howden, J. K. Leslie, D. G. Meaden, J. Pearson, W. E. J. Pinnegar, E. H. W. P. Purslow, N. J. Sage, B. E. Salmon, E. L. Tanner, J. B. Tilley, F. Wardle, J. Wood.

The notifi. of Aug. 7, 1942, concern. Plt. Off. J. E. S. Harrison is cancelled.

ACCOUNTANT BRANCH.—The folg. are granted the rank of Flt. Lt. (war subs.):—Flt. Lt. (temp.): Mar.: H. K. Shersby, R. B. Barker, H. S. Biggs, W. N. R. Dean. Flg. Off.: C. C. Downing.

Plt. Off. (prob.) C. L. Foxall to be Flg. Off. on prob. (war subs.). Oct., 1942.

The notifi. of Jan. 1 concern. L. C. Austin should have appeared under Accountant Br. and not Admin. and Special Duties Br.

MEDICAL BRANCH.—The folg. are granted the rank of Sqdn. Ldr. (war subs.):—Sqdn. Ldrs. (temp.): Apl.: L. V. McNabb, M.B., B.S.; D. S. Bateman, B.M., B.Ch., M.R.C.P., D.Ch. Flt. Lt.: I. H. Gosset, B.M., B.Ch., M.R.C.P., M.R.C.S.

Flg. Offs. to be Flt. Lts. (war subs.):—Mar.: J. V. Sheldon, M.R.C.S., L.R.C.P.; D. W. Wauchob, M.B., B.Ch.; J. A. Williams, M.B., B.S., M.R.C.S., L.R.C.P.; St. J. M. A. Tolhurst, M.B., B.S., M.R.C.S., L.R.C.P.; C. C. McD. Watson, M.B., Ch.B. Apl.: J. D. Cardale, M.B., Ch.B.; R. M. Galvan, M.R.C.S., L.R.C.P.; B. Graham, M.B., Ch.B.; C. N. Grainger, M.R.C.S., L.R.C.P.; A. H. Widdup, M.B., B.Ch., M.R.C.S., L.R.C.P.; J. S. Cameron, M.B., Ch.B., D.P.H.; R. M. Case, M.B., Ch., M.R.C.S., L.R.C.P.; B. M. Heap, M.R.C.S., L.R.C.P.; J. M. Slattery, M.B., B.Ch.; G. S. Arnold, M.R.C.S., L.R.C.P.; E. C. Duffet, M.R.C.S., L.R.C.P.; N. W. Riley, M.B., Ch.B.; W. D. W. Dick, M.B., Ch.B.; R. S. Flynn, M.B., Ch.B.; T. H. Steele-Perkins, M.R.C.S., L.R.C.P. May: E. R. Spicer, M.B., Ch.B.; P. S. Cheshire, M.R.C.S., L.R.C.P.; J. Cramond, M.B., Ch.B.

DENTAL BRANCH.—Flg. Offs. to be Flt. Lts. (war subs.):—Mar.: W. E. Wright, L.D.S. Apl.: S. C. Gilby, L.D.S.

ROYAL AIR FORCE REGIMENT.—The folg. are granted the rank of Flt. Lt. (war subs.):—Flt. Lts. (temp.): Mar.: R. Bell, W. H. Lowe, O.B.E. Flg. Offs.: J. A. Gill. Apl.: W. Arblaster. M.C.

AMENDMENT.—The notifi. of Nov. 20, 1942, concern. J. G. Cameron should have appeared under the R.A.F. Regt. and not Accountant Br.

AUXILIARY AIR FORCE

GENERAL DUTIES BRANCH.—Sqdn. Ldrs. (temp.) granted the rank of Sqdn. Ldr. (war subs.):—Mar.: G. Henderson, M. L. Edwards.

TECHNICAL BRANCH.—Flt. Lt. (temp.) R. T. Read is granted the rank of Flt. Lt. (war subs.). Mar.

BALLOON BRANCH.—Sqdn. Ldr. (temp.) H. F. Tiarks is granted the rank of Sqdn. Ldr. (war subs.). Mar.

Flt. Lts. (temp.) granted the rank of Flt. Lt. (war subs.):—Mar.: G. M. Palmer, J. F. Freeston, K. G. Marsh.

AUXILIARY AIR FORCE RESERVE OF OFFICERS

GENERAL DUTIES BRANCH.—Sqdn. Ldrs. (temp.) granted the rank of Sqdn. Ldrs. (war subs.):—Mar.: G. F. Anderson, The Hon. R. N. Frankland.

WOMEN'S FORCES

WOMEN'S AUXILIARY AIR FORCE.—Asst. Sec. Offs. (prob.) to be Sec. Offs. on prob. (war subs.):—Oct., 1942: D. J. Hall. Dec., 1942: H. I. Hawker. Jan.: J. K. Allsop, F. J. Irvine, F. A. Bernard, E. F. Kingston, D. Fowler, A. R. Mattinson, M. J. Cox, E. Grundle, P. M. Helmore, J. D. T. Gardner, H. L. Townley, H. L. Thorogood. Mar.: M. Heaton, E. M. Hood-Cree, J. C. Hunter, P. R. Longbotham, C. M. Neve, P. M. Slinger, A. E. Stedman, J. Stevenson, M. A. W. Bevington, M. E. L. Brown, J. A. Cartwright, V. F. Craig, A. J. Firth, B. W. M. Goodwin, J. A. Harman, M. Lawrence, J. Magee, A. W. Mears, G. P. Pakenham-Walsh, M. A. Pattinson, N. Procter, S. Stevens, D. B. M. Willard, B. A. M. Caldwell, M. H. Binns, J. B. Burton, D. Forrester, T. M. Forster, J. M. Hacking, J. M. Jennings, F. M. A. Kennedy, J. C. Kershaw, R. M. Middleton, P. E. Nott-Bower, C. A. P. Osborne, I. Pemberton, M. E. Ryce, M. C. Scorgie, O. P. Souter, H. R. Vigor, J. Borgeest, W. E. Burbridge, A. R. Chantler, D. G. Jones, C. Munro, C. M. Page, B. Posselwhite, J. W. Sharp, M. I. Agnew, J. E. Aris, C. Boyton-Smith, W. M. Brown, M. Skegg, L. M. Howell, S. McHardy, S. R. MacPherson, B. Barron, E. H. Mitchell, M. M. Perring, M. F. J. M. Snook, M. H. Stock, J. B. Tolhurst. Apl.: J. M. Baird, S. Z. Bothamley, D. C. Boutflower, A. M. J. Dorman, E. C. Goate, J. A. Haines, J. Hallatt, J. Hawker, W. Hilton, N. C. Holland, J. A. Keeble, F. E. Kivlehan, P. P. E. Lyle, E. M. Macgrigor, E. Maidment, R. M. Menzies, B. M. Miller, M. L. Morgan, D. M. Romanes, M. A. F. Twiddy, J. M. L. Watson, C. A. Wiley, P. A. Beale, I. C. Beaumont, N. O. Blake, D. A. Clewes, S. E. J. Collier, M. G. Crosbie, S. M. Ennis, M. D. Matthews, P. Goldberg, M. F. Graham, S. M. Kilpatrick, M. C. King-Ross, V. J. I. Langner, M. M. Leaper, G. M. P. McLaughlin, M. G. McNeill, E. M. McReynolds, M. E. Mills, D. V. Monaghan, J. G. Morgan, H. Morris, M. G. Newton, D. F. Paget, M. C. Pellegrini, N. S. Portlock, I. D. Pringle, P. J. Randall, F. B. Scott, M. Sketch, P. Tate, W. M. Taylor, G. E. Williams, B. Willis, D. J. Wright, J. M. Fielder, B. Needler, L. L. Alexander, C. W. Alston, M. K. Baldock, E. D. Berry, M. A. Boyle, J. E. Bradshaw, D. Catt, D. P. Christmas, A. Clark, I. P. Clarry, M. Peterkin, A. B. Edwards, M. J. V. Fairbank, E. Fitzgerald, C. J. Frank, E. C. Glaister, M. E. Graham, F. M. Griffin, S. M. Grimes, P. J. Hatchard, I. P. F. Henderson, F. B. Holroyd, V. E. Horn, M. Y. Hunter-Tod, E. L. Irons, F. N. Keen, J. P. Kidd, J. M. Knappe, A. Knott, J. E. McEwen, C. M. Macleod, M. A. Mould, L. M. Myers, E. M. Pulley, T. Sawle, M. H. Smith, E. S. Glenn, H. M. Wiltshire, V. M. Oliver (Sen. Mar. 16), P. St. J. Fisher, B. A. I. Pritchard, J. M. Walsh.

ROYAL AIR FORCE

GENERAL DUTIES BRANCH.—H. F. Burditt, Lt. R.A., to be Plt. Off. (temp.) on being employed with the R.A.F. Apl.

To be Plt. Offs. on prob. (emergency):—Wt. Offs.: Dec., 1942: A. H. D. Pond, K. T. Good. Jan.: Stuart Hamilton. Feb.: John Phillips, M. J. Joyce, R. M. Smalley, G. A. Donaldson, A.F.M. Mar.: J. J. F. Talbot, C. A. Hunter, Ernest Buckley, D.F.M., L. G. Pope, Arthur Knapper. Apl.: W. J. Stephen, D.F.M. Temp. Wt. Offs.: Jan.: Herbert Walton. Flt. Sgts.: Oct., 1942: J. F. Webster. Feb.: John Ralph. Mar.: Richard Field, D.F.M., H. C. Godfrey, F. R. Hunter, Alexander Denovan, D.F.M., F. E. O'Hare. Sgts.: Aug., 1942: E. H. Burgess. Jan.: G. W. Brooks, Arthur Ganderton. Feb.: J. M. Ayre. Mar.: John Bell, C. M. Graham, M. H. P. Baker. Apl.: H. F. Pullen. Cpls.: Mar.: J. D. Melrose, R. W. Woolford.

Gp. Capt. (Act. Air Cdre.) B. E. Embry, D.S.O., A.F.C., A.D.C., to be Act. Air Vice-Mshl. June. Flg. Off. J. S. Bottom is transf. to the Admin. and Spec. Duties Br. May.

To be placed on the ret. list:—Gp. Capt.: May: L. T. N. Gould, M.C., R. H. Kershaw.

To relinquish their temp. comms. on return to Army duty:—Flg. Off.: Apl.: P. J. Bayliss (Lt. P. Corps. Plt. Off.: L. W. Bleikamp (Lt. Cheshire R.)).

AMENDMENTS.—In notifi. of Feb. 16, concern. W. J. Hills, for Ldg. Acn. read Wt. Off.

The notifi. of Mar. 9 concern. G. H. Snape should have appeared under R.A.F. and not R.A.F.V.R.

TECHNICAL BRANCH.—To be Flg. Offs. on prob. (emergency):—Wt. Offs.: Mar.: A. H. Ridley, M.B.E. Apl.: A. J. Brooks, W. F. Pierce, M.B.E.

To be Plt. Offs. on prob. (emergency):—Wt. Offs.: Feb.: F. E. Ellis. Mar.: J. R. Froud. Apl.: J. G. M. Davis, B.E.M., J. C. Wood, R. J. Mickleburgh-Saunders, Ralph Lewis, Albert Smith, William Wilkinson. Act. Wt. Off.: Jan.: D. G. Copley. Flt. Sgts.: Feb.: F. J. N. Seymour. Mar.: A. H. W. Bowling. Apl.: C. J. Miller, R. E. Thraves, E. A. Cannan. Sgts.: M. V. Black, Frederick Pakes, J. B. Score, K. A. Sharpe.

To be Act. Plt. Offs. on prob. (emergency):—Flt. Sgts.: Feb.: W. V. Reynolds. Mar.: H. P. Parsbo.

Sqn. Ldr. (temp. Wg. Cdr.) T. H. Moon (retd. but re-employed on the active list) retains the rank of Wg. Cdr. on reverting to the retd. list. May.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—To be Flg. Off. on prob. (emergency):—Wt. Off.: Mar.: R. A. Pugh.

To be Plt. Offs. on prob. (emergency):—Sgts.: Jan.: Paul Macdonald. May: W. L. R. Young. To be Act. Plt. Off. on prob. (emergency):—Sgt.: Nov., 1942: L. V. Cruickshank.

EQUIPMENT BRANCH.—Flt. Lt. P. J. Finn is dismissed the Service by sentence of General Court Martial, Nov. 30, 1942.

MEDICAL BRANCH.—To be Flg. Off. (Gr.-Mr.) on prob. (emergency):—Wt. Off.: Jan.: James Farquarson.

DENTAL BRANCH.—Gp. Capt. L. Somerville Woodiwis, L.D.S., is placed on the ret. list. June.

ROYAL AIR FORCE REGIMENT.—Flt. Lt. E. Hills is transf. to the Admin. and Spec. Duties Br. May.

RESERVE OF AIR FORCE OFFICERS

GENERAL DUTIES BRANCH.—Flt. Lt. (temp. Sqn. Ldr.) J. Paine relinquishes his commn. on appt. to a commn. in the R.A.A.F. Reserve. Apl.

Flg. Off. I. G. Ross relinquishes his commn. on completion of service. May.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—John Brown to be Flt. Lt. in class CC. May.

G. H. Lawrence to be Plt. Off. in class CC. Apl. Sqn. Ldr. (temp.) D. V. G. Mawhood is transf. to the Gen. Duties Br. Apl.

To relinquish their comms. in class CC. on cessation of duty:—Wg. Cdr.: May: C. B. Manning. Sqn. Ldr.: S. J. Hughes. Flt. Lt.: H. W. Doe.

The notifi. of Nov. 24, 1942, concern. C. H. Michael is cancelled.

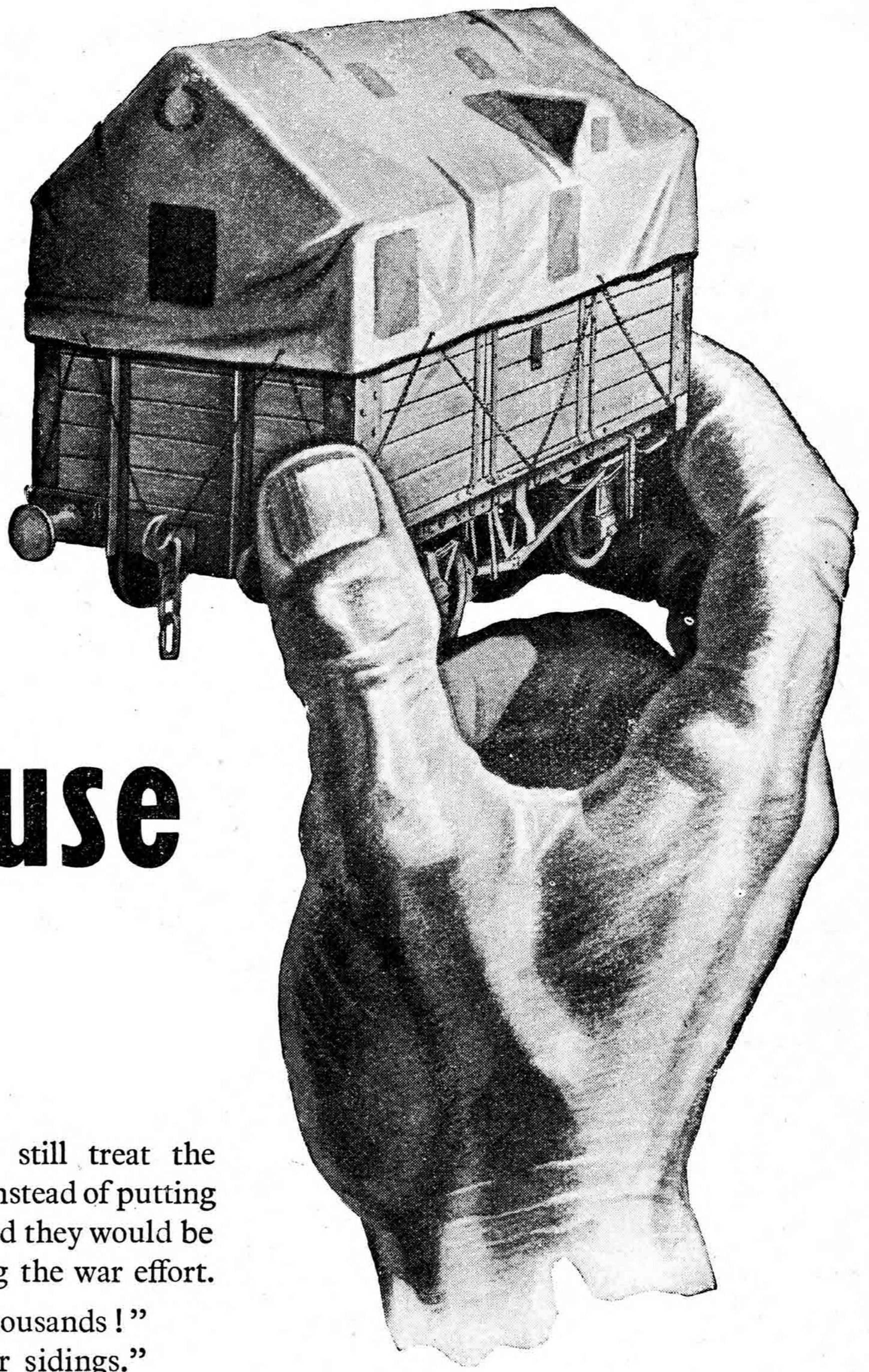
The notifi. of Mar. 16 concern. W. F. Clements is cancelled.

MEDICAL BRANCH.—Flt. Lt. J. F. Ziegler, M.B., B.S., relinquishes his commn. on appt. to the R.A.A.F. Apl.

ROYAL AIR FORCE VOLUNTEER RESERVE

GENERAL DUTIES BRANCH.—To be Plt. Off. (emergency):—Jan.: Michael Mathew.

To be Plt. Offs. on prob. (emergency):—Wt. Offs.: Dec., 1942: Sidney Davies. Jan.: G. I. Finlay, G. F. Jarvis. Feb.: R. S. Driscoll, R. D. Bale, Harry Garthwaite. Mar.: C. F. Starr, A. E. Lomas, Barry Kneath, Laurence Leech, Philip Winter, C. F. R. Mallett, W. H. M. Hannay. Act. Wt. Off.: Jan.: Frank Giles. Flt. Sgts.: Sept., 1942: P. S. Smith. Dec., 1942: F. J. Ford. Jan.: H. E. Parratt, J. P. Studer, R. S. Roe, H. H. Guy, R. H. Liddell. Feb.: S. G. Law, C. H. Crawford, William Borrows, H. H. Jenkins, Geoffrey Booth, J. D. Russell, A. A. Green, D. P. Harris, Harry Chapman, J. A. Purves, D.F.M., H. R. Honeker, D. A. Burden, J. P. O'Connor, C. D. Handley, D.F.M., K. L. Atkins, G. A. C. H. Foster, F. C. H. Lewin, H. A. Wallace, M. N. Harwood. Mar.: H. A. Webber, Duncan Walker, R. H. Boyers, James Battersby, Alfred Gunn, F. S. Devereux, W. J. Rodgers, R. W. Birchall, W. R. Harper, John Clark, D. H. F. Hubbard, H. J. Davis, Norman Bertram, B. J. V. Young, R. D. Mackay, V. W. Long, P. B. Doran, W. S. O. Randle, Kenneth Williams. Apl.: W. K. Pearson, J. C. Richardson, L. T. C. Richards, Geoffrey Kentish, P. T. Green, Harry Hartley, G. A. Miles, E. W. Hutchins. Sgts.: May, 1942: A. B. Standen. Sept., 1942: J. C. Webb. Oct., 1942: F. J. Ney, K. M. McGill. Nov., 1942: S. L.



Wagon or warehouse ?

TOO many users of transport still treat the nation's wagons as warehouses instead of putting them back into traffic. How shocked they would be if they were accused of obstructing the war effort.

"One wagon out of tens of thousands!"

"It was only three days at our sidings."

But *in total*, hundreds of wagons stand idle for thousands of days—a huge loss to our vital transport system in its colossal war tasks. Will you take steps now to see if you are an unwitting "offender"?

QUICKER TURNROUND THAN EVER BEFORE

Issued by the Ministry of War Transport



You know your own problems best. Tackle them in your own way. But tackle them now. Plan, encourage ideas, improvise if needs be. Here's a starting-off agenda:

1. CLEAR LABELS AND DOCUMENTS.
2. LABOUR SAVING DEVICES.
3. WORK IN BLACK-OUT AND AT WEEK-ENDS.
4. OPINIONS OF "MEN WHO DO THE WORK".

Taylor, Dec., 1942: Roy Bates, Rhys Thomas, R. C. Hill, Harold Atkinson, E. W. Hemsley, J. G. W. Thompson. Jan.: E. J. Jefferies, J. A. Wymark, S. T. Bryans, J. K. Dawes, J. S. Graham-Smith, W. E. Williams, P. M. J. Harris, E. J. F. Barratt. Feb.: E. W. Lewis, D. E. Nicholson, D. S. Fowler, C. E. Pimm, G. I. Williams, D. I. Catty, A. E. Windbank, Duncan McIntosh, J. E. Ramsay, J. S. King, James Eccleston, M. R. Titlow, K. E. Rawlins, R. R. Walters, H. W. Phillips, C. R. Sar, J. R. W. Turner, Harold Skermer. Mar.: S. A. R. Tanner, R. A. W. Cooke-Smith, E. C. Stanyard, T. H. Spruille, A. C. Younghouse, C. A. L. Cliffe, David Ruddleman, J. H. Lascelles, Ronald Cooper, G. D. J. King, S. E. Sukthanker, Norman Hindley, Salamon Levy, E. C. Batten, Frank Allibone, W. E. Pettifer, J. H. Petrie, V. G. Westwood, John Holding, J. D. Martin, F. A. B. Gibbins, W. B. Robinson, C. W. Clarke, H. J. Wroughton, R. G. Carpenter, P. E. Prior, H. B. Cooper, D. L. Thomson, J. R. Hood, W. J. Hampton, J. A. Day, E. J. Daniels, E. V. Frankland, Alan Gillespie, H. G. Chuck, E. F. H. Italy, R. A. Gale, Henry Wheen, W. I. L. Roberts, Ronald Greenhalgh, A. E. Robbins, L. T. Garland, C. B. T. McSweeney, W. H. Lane, J. A. Reid, P. W. Buttle, P. A. Finnett, Desmond Draffin, W. H. Swire, E. L. Cramp, R. E. Raven. Apl.: J. F. Bodgener, D. T. N. Smith, F. M. Thompson, Myrddin Watkins, A. J. Beazleigh, T. N. Evans, F. W. B. Hailey, J. W. Bibby, T. R. Wilson, John McGlone, William Dimmick, W. H. Walton, R. L. Andrews, J. N. Hartley, J. R. Hewitt, F. C. Perry, Neil Laidler, H. J. D. Rowse, James Smart, E. F. C. Brown, E. G. Alcock, A. N. Whitaker. Ldg. Acn.: Sept., 1942: Thomas Adamson, C. E. Keay, M. N. Morgan, A. J. F. Mortimer, J. L. Lawson, J. H. Lewis, F. C. M. M. J. Murray, L. G. M. Self. Oct., 1942: J. J. Thomas, J. M. Maloney, William Dodd. Dec., 1942: G. H. Chilvers, B. P. Hollebhone, E. J. E. Vivian, D. E. Gihl, S. R. Parker, J. C. Pert, Donald Webber, J. A. D. Weld, P. J. Donnelly. Jan.: Geoffrey Chambers, L. J. M. Hardy, W. F. Hoffman, J. A. Poptis, J. F. White. Feb.: L. A. Norris, R. F. Gray, G. G. Miller. Mar.: F. E. Moore, Bruce Rook, A. R. Steples, P. J. Boothman, S. W. Brunger, C. A. Carter, J. E. Cockroft, W. J. Coulter, J. D. Cox, Sylvester Crook, R. G. Dellere, Peter Green, J. V. Hayward, E. G. Hull, R. B. Jackson, L. D. Jones, E. F. Keefe, G. W. Kirk, J. N. Lockerbe, John Lowe, Charles McBride, R. J. B. Atkinson, C. R. Baldwin, D. A. Brammer, L. G. F. W. Hamilton, John Barnett, A. M. Brebner, P. F. Sturges, G. L. Wilson, Rupert Boasten, W. L. Burgess, W. B. Choppins, D. A. Dean, Ivor Harley, A. W. Hawkins, L. V. Hayes, Ronald Hewison, Stanley Porter, G. F. Purves, E. G. Rapkin, F. A. Robertson, K. G. D. Shipway-Fowler, B. W. Slater, V. E. Taylor, H. B. Wright. Apl.: John Dickerson, W. T. J. O'Brien, G. F. Ritson, E. A. Worthy, D. N. Aitkenhead, R. H. Stevens. J. G. Horne to be Plt. Off. on prob. (emergency). Dec., 1941. (Subs for notifi. of Mar. 31, 1942.) To be transf. to the Admin. and Spec. Duties Br.:—Flt. Lt.: May: A. P. Singleton. Flg. Off.: T. D. Oxley. Plt. Off. N. Lovie takes rank and precedence as if his appt. as Plt. Off. bore date Jan. 22. Reduction from Feb. 17. Flg. Off. (prob.) H. E. Milton resigns his commn. and retains his rank. May. The commns. of the folg. Plt. Offs. (prob.) are terminated:—May: R. Barlow, K. W. Arton. Plt. Off. F. A. W. J. Wilson is dismissed the Service by sentence of General Court Martial. Feb. 4. Plt. Off. E. A. Thomas is dismissed the Service by sentence of General Court Martial. May 11. The notifi. of Dec. 29, 1942, concern. H. C. Black is cancelled. AMENDMENTS.—In notifi. of Apl. 27, 1943, concern. T. H. P. Walton, for Prior rear Prior. In notifi. of May 4, for J. Barkley read J. C. Barkley. In notifi. of May 4, concern. Flg. Off. F. S. Downey for Apl. 15 read May 3. TECHNICAL BRANCH.—To be Plt. Offs. on prob. (emergency):—Flt. Sgt.: Mar.: J. G. Black. Act. Flt. Sgts.: Apl.: Norman Hull, G. R. B. Thornley. Sgts.: Feb.: Stanley Kelly. Apl.: Leo O'Donnell. Cpls.: S. E. Prince, J. M. Beale, Thomas Holding, Anthony Macario, R. C. Reeves, Reginald Sunter, C. N. Tebay. To be Act. Plt. Offs. on prob. (emergency):—May: E. F. Dimmack. Cpls.: Apl.: G. S. Perry, C. S. C. Miller. Act. Plt. Off. (prob.) W. M. Matcham is transf. to the Admin. and Spec. Duties Br. May. Flg. Off. G. W. Fletcher resigns his commn. and retains the rank of Flt. Lt. May. Plt. Off. R. P. Beaton is dismissed the Service by sentence of General Court Martial. Feb. 4. BALLOON BRANCH.—To be transf. to the Admin. and Spec. Duties Br.:—Flt. Lts.: May: H. C. Liddell, H. W. Dawson. Flg. Offs.: W. L. Stewart, R. Murray. ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—To be Plt. Offs. on prob. (emergency):—Act. Flt. Sgts.: Dec., 1942: Cecil Spark. Sgts.: Apl.: Stanley Riley, L. W. King, F. C. Airey. Cpls.: Jan.: J. L. Abbott, Mar.: A. L. O. Scadding, V. P. Gorringe. Apl.: W. H. Hulin, Donald Melville. May: S. H. Chadburn, G. F. Howdie, T. F. Merritt, W. H. Slade. Ldg. Acn.: Jan.: W. R. Weidley. Feb.: K. F. Penn, A. G. Randall, J. C. Lees. May: T. B. Connelly. Acn. 1st Cl.: Dec., 1942: C. F. Hardy. Jan.: C. F. C. Lee. Acn. 2nd Cl.: May: D. L. Jones, Edward Weeple. To be Act. Plt. Offs. on prob. (emergency):—Flt. Sgt.: Apl.: L. J. Pearce. Act. Flt. Sgt.: James O'Reilly. Sgts.: Mar.: R. S. Allwood-Coppin. Apl.: John Kennedy, J. P. Kingston. Cpls.: Mar.: H. H. A. C. Locke. Apl.: Henry Lloyd, Fred Nicholson, William Ramage, F. A. Warton. Act. Cpl.: H. V. Davis. Ldg. Acn.: Mar.: G. A. Repath. Apl.: N. L. J. Blangy, G. S. Danton, Brynamor Harris, D. P. McLaughlin, N. G. Whale. Acn. 1st Cl.: Mar.: M. C. B. Grimaldi. Apl.: H. V. Cox, E. G. Harcourt,

R. J. W. Huggins. Acn. 2nd Cl.: Mar.: A. M. Lennox. Apl.: W. W. Jackson, W. S. Knowles, K. M. Logan, G. R. Smith. H. N. Barber is granted an hon. commn. as Flt. Lt. May. T. A. Forster is granted an hon. commn. as Flg. Off. May. To relinquish their ranks at their own request and to be transf. to the Gen. Duties Br. in the rank of Plt. Off.:—Flt. Lt.: May: R. H. Siddons. Flg. Offs.: F. E. Forrest, R. G. Stafford. To be transf. to the Tech. Br.:—Flg. Offs.: May: C. J. Eprile, G. W. Robertson. Plt. Offs. (prob.): June, 1942: K. R. Dolleymore (since promoted). Aug., 1942: W. H. MacWilliam (since promoted). Flt. Lt. S. H. J. Bates is transf. to the Legal Br. with effect from and sen. of May 20. To be transf. to the R.A.F. Regt.:—Flg. Offs.: Apl.: A. D. Cullen, G. C. Espley, G. J. R. Francis, J. H. Gould, L. C. Hopkins. Plt. Off. (prob.): A. A. Vasquez-Armstrong. Flg. Off. J. S. Smith takes rank and precedence as if his appt. as Flg. Off. bore date Aug. 20, 1942. Reduction from Mar. 26. Plt. Off. J. Brown relinquishes his hon. commn. on appt. to a commn. in class CC. R.A.F.O. May. Flt. Lt. (temp. Sqdn. Ldr.) A. B. Ball, relinquishes the temp. rank of Sqdn. Ldr. at his own request. May. Flg. Off. A. Morgan relinquishes his commn. on account of ill-health and retains the rank of Flt. Lt. May. To relinquish their commns. on account of ill-health and retain their ranks:—Flt. Lt.: May: T. H. Cotton. Flg. Off.: W. Jones. To relinquish their commns. on account of ill-health:—May: Flt. Lt.: S. T. Hosken. Flg. Off.: G. Sweeting. Sqdn. Ldr. A. E. Gliddon, D.S.M. relinquishes his commn. on ceasing to be employed. May. Flt. Lt. J. N. L. Baker resigns his commn. and retains the rank of Sqdn. Ldr. Apl. Flg. Off. W. W. P. Woodland resigns his commn. and retains the rank of Flt. Lt. May. To resign their commns. and retain their ranks:—Sqdn. Ldr. (temp.): May: B. S. Brice, A.F.C. Flt. Lts. (temp.): M. A. Bentley, C. N. Steel, E. S. Raggett. Flg. Offs.: H. L. Collingbourne, C. T. Rowan. To resign their commns.:—May: Sqdn. Ldr.: May: R. H. More, C.M.G., C.B.E., Flt. Lt. (temp.): B. M. Newton. Flg. Off.: D. S. Jay. The commns. of the folg. are terminated:—Plt. Off. (prob.): May: W. H. Hartell. Act. Plt. Off. (prob.): Nov., 1942: W. T. Grieves. AMENDMENT.—The notifi. of May 11, concern. W. F. Bryanton should have appeared under Admin and Spec. Duties Br. and not Gen. Duties Br. METEOROLOGICAL BRANCH.—To be Sqdn. Ldr. (emergency):—Nov., 1942: C. W. G. Daking. To be Flt. Lts. (emergency):—Apl.: J. H. Mitchell, A. J. C. Morgan, G. C. Naylor, L. R. Nixon, Trefor Price, W. E. Silver, R. F. M. Sinclair, Geoffrey Spurr, W. O. Storer, L. H. Tarrant, J. A. Taylor, D. R. Thomas, W. D. Treen, T. L. A. Waite, C. H. Ward, W. A. C. Webb, R. K. Wright, A. McL. Young. To be Flg. Offs. (emergency):—Apl.: E. T. Butcher, E. W. Horwood, Robert Kirkbride, C. N. McLeod, D. W. Matthews, G. E. Meston, J. J. Metcalfe, D. G. Morgan, G. R. Morris, J. O. Morrison, T. D. Murray, M. P. Newby, L. G. Orrey, J. M. Paterson, A. A. Penny, M. G. Polson, Horace Powell, D. F. Rawlins, D. W. Rhead, Kenneth Richardson, T. B. Rigby, Denis Riley, W. G. Ritchie, H. O. F. Robbins, Fred Robinson, R. R. Roe, S. J. Rogers, N. D. Ross, C. J. Ryder, Jacques Schmeidler, D. J. Schove, E. A. Scorer, Thomas Seeley, C. F. Smith, F. L. Stobbs, D. V. Tamblin, L. D. Tebbenham, W. T. C. Towers, Francis Turner, R. W. Turner, K. W. Ulyatt, Clifford Watts, S. J. Welton, Henry Whitaker, D. J. White, W. T. Williams, C. F. Wilson, S. T. Wood, W. H. C. Wright. To be Plt. Offs. (emergency):—Apl.: J. D. Norris, K. J. Pitt, J. H. Pryor, Kenneth Richards, E. G. Skinner, J. O. Smith, D. J. Starck, A. R. Stephenson, P. S. E. Stone, J. A. C. Thomson, R. G. Treharne, J. P. Waterhouse, J. A. Weightman, Samuel Welburn.

TRAINING BRANCH.—The persons whose names are marked "*" in the gradation list of this branch in the Air Force List for May, 1943, are granted emergency commns. in the ranks stated and with effect from the dates shown therein. Plt. Off. A. G. Williams relinquishes his commn. on appt. to the Admin. and Spec. Duties Br. Mar. Act. Plt. Off. D. E. H. Birse relinquishes his commn. on appt. to a commn. in the Army. May. To resign their commns.:—Plt. Offs.: Sept., 1941: W. W. Dickie, Apl.: G. A. Smithson, A. A. Rice, C. W. Calder. May: J. W. Mullen, R. D. Buchan, T. H. Element, W. M. A. Reid, J. W. Kinnear, A. S. McHardy, A. R. Moon, C. P. Rawson, W. G. White, D.C.M., E. J. Jacobs, M.C., L. A. W. Webb, C. W. Baker, E. M. Evans. Act. Plt. Offs.: F. R. Midgley, R. F. Bailey, A. Brickley, W. M. Crossman, H. N. Erber, D. W. Pratt, G. J. H. Martin. The commns. of the folg. Plt. Offs. are terminated:—May: D. S. Cramb, E. J. Davidge. The notifi. of Sept. 29, 1942, concern. J. Tate, is cancelled. AMENDMENT.—In notifi. of Nov. 24, 1942, concern H. Upton, for Sept. 9 read July 1, 1942. EQUIPMENT BRANCH.—To be Plt. Off. on prob. (emergency):—Wt. Off.: Apl.: W. E. S. Pittuck. To be Act. Plt. Offs. on prob. (emergency):—Cpl.: Apl.: J. R. M. Standen. Ldg. Acn.: W. S. Martin. Act. Plt. Offs. (prob.) to be transf. to the Admin. and Spec. Duties Br. and graded as Plt. Offs. (prob.):—May: W. A. Laidlaw, G. B. Lidstone, J. M. Malcolm, F. Peach. Flt. Lt. I. R. Draper takes rank and precedence as if his appt. as Flt. Lt. bore date Oct. 26, 1942. Reduction from Oct. 26, 1942. Flg. Off. P. I. Renton relinquishes his commn. on account of ill-health and retains his rank May. ACCOUNTANT BRANCH.—To be Plt. Offs. on prob. (emergency):—Flt. Sgt.: May: W. H. Morris. Cpl.: Apl.: C. S. N. Lamb. Ldg. Acn.: J. M. Quinn. To be Act. Plt. Off. on prob. (emergency):—Act. Flt. Sgt.: Feb.: W. G. Jones. Flg. Off. J. H. Penn relinquishes his commn. on account of ill-health and retains his rank. May. MEDICAL BRANCH.—To be Flg. Offs. (emergency):—Apl.: M. S. Fraser, M.B., Ch.B.; W. A. Kennedy, M.B., B.Ch. Sqdn. Ldr. (temp.) H. A. Tracey, M.R.C.S. L.R.C.P., relinquishes his commn. on appt. to a commn. in the S. African Medical Corps. May. Sqdn. Ldr. (temp.) J. Courtney, L.R.C.P. and S. L.R.F.P. and S., D.M.R.E., resigns his commn. and retains his rank. May. Flt. Lt. H. V. Edwards, M.B., Ch.B., M.R.C.S. L.R.C.P., resigns his commn. and retains the rank of Sqdn. Ldr. June. DENTAL BRANCH.—Flt. Lts. resign their commns. and retain their rank:—May: H. M. Doubleday, L.D.S., W. E. Harper, L.D.S. CHAPLAINS BRANCH.—To be Chaplains (emergency) with relative rank of Sqdn. Ldr.: Jan.: The Rev. W. T. Rees. Apl.: The Rev. C. E. Bramley. May: The Rev. H. G. Cole, The Rev. S. T. Stratford, The Rev. W. L. Neill, M.A., The Rev. D. T. Hislop, M.A. To resign their commns.: May: The Rev. J. E. Dobbie, The Rev. N. C. S. Motley. ROYAL AIR FORCE REGIMENT.—Flg. Off. (prob.) N. D. Johnson is transf. to the Equip. Br. Mar. Flg. Off. J. T. Corthine is transf. to the Admin. and Spec. Duties Br. Mar. Flg. Off. W. M. Jones, D.C.M., relinquishes his commn. on appt. to a commn. in the Army. Apl. Sqdn. Ldr. (temp.) H. G. Grace, M.C., resigns commn. and retains the rank of Wg. Cdr. May (The rest of the appointments under this date will be published next week.)

R.A.F. BENEVOLENT FUND
1, SLOANE STREET, S.W.1



THE AFTERMATH.—The same portion of Hanover photographed after the raid. Very few roofs remain or buildings intact. The whole area was devastated by fire.

FORTHCOMING EVENTS

Nov. 14

London.—The Institute of Economic Engineering.—Waldorf Hotel.—Lecture on "Production Planning and Control," by W. G. Webb, Ph.D., A.M.I.P.E.—14.30 hrs.

Nov. 20

London.—Institution of Factory Managers.—Bonnington Hotel, Southampton Row, W.C.1.—The Inaugural Meeting of the South Eastern Factory Managers.—14.45 hrs.

The Royal Aeronautical Society

A COLLECTION of aeronautical medals, dating from 1714 to 1941, has been acquired by the Royal Aeronautical Society through the generosity of an anonymous donor. The collection includes more than 300 medals struck to commemorate various aeronautical events, including the first ascent of the Montgolfier Brothers in 1783, the cross-Channel flight of M. Blériot in 1909, and Amelia Earheart (1941).

Rotol Limited

ROTOL AIRSCREWS, LTD., have changed the name of the Company to Rotol, Ltd. The Company formed jointly by Rolls-Royce, Ltd., and the Bristol Aeroplane Co., Ltd., 1937, for the purpose of airscrew development and production has widened the scope of its operations.

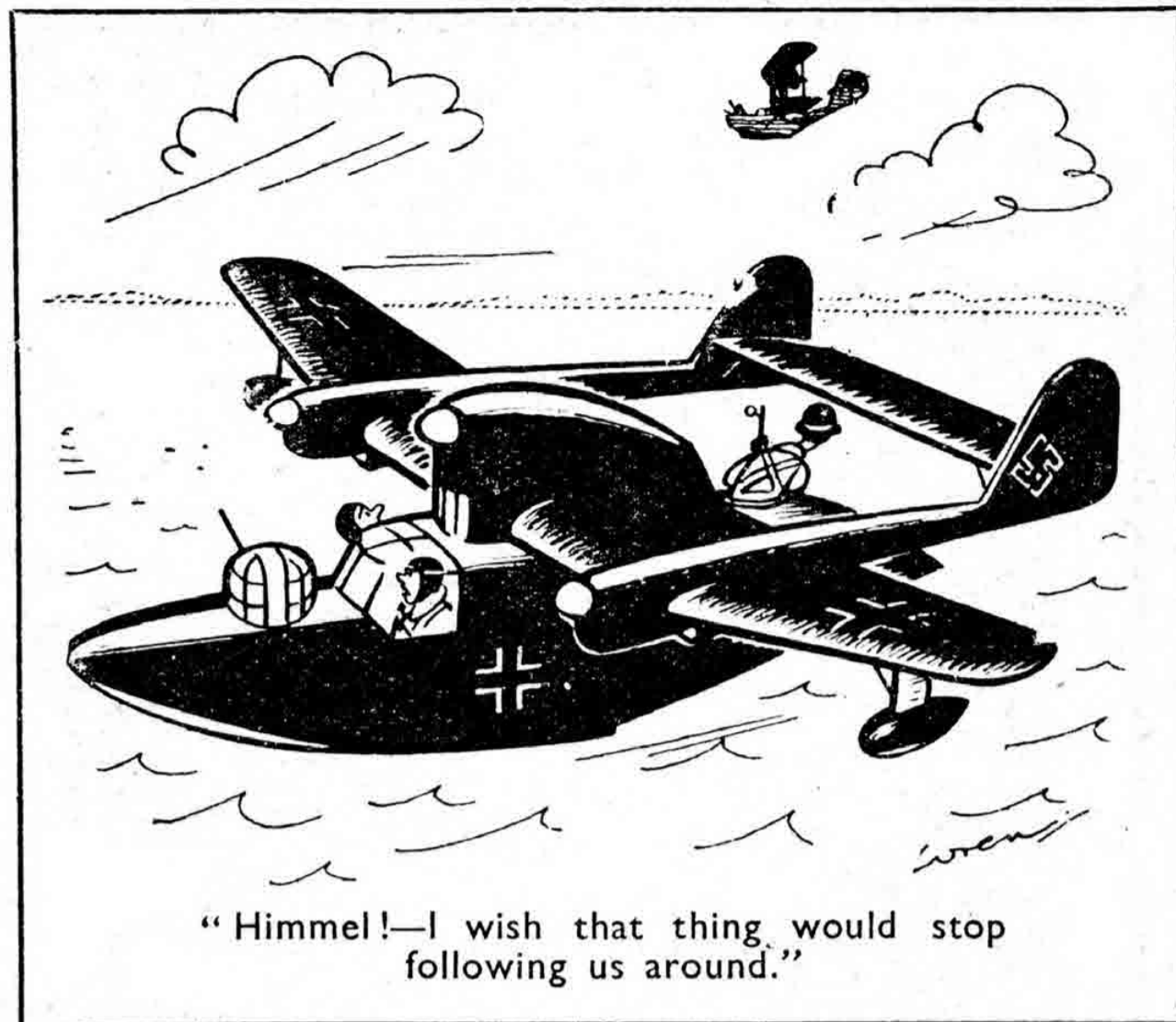
High Duty Alloys, Ltd.

THE ACTIVITIES and control of Hyduminium Engineering, Ltd., have been changed, and High Duty Alloys, its Parent Company, has formed a new department to continue the work formerly done by it. Mr. J. A. Heron, formerly Managing Director of Hyduminium Engineering, has severed his connection with the Company.

New Patents

APPLICATIONS ACCEPTED

556,006—G. F. Jones.—Disconnectible means for coupling loads to parachutes.—Mar. 10, 1942.
556,089—K.A.C., Ltd., and J. Love.—Aircraft.—Mar. 16, 1942.
556,097—A. V. Roe and Co., Ltd., and G. Beardshall.—Bomb and like carriers for aircraft.—May 13, 1942.
556,068—H. V. Williams.—Construction of auto-rotating landing wheels for aircraft.—May 1, 1941.
Opposition period expires Nov. 29, 1943.
Printed specifications available Oct. 14, 1943.



Company Notices

NEW COMPANIES

Pan-African Airways Agencies, Ltd.—Private co. Reg. Oct. 14. Cap. £100 in 100 shares of £1. To carry on the business of agents in connection with aircraft, ships and other conveyances calling at any part of Africa or elsewhere; and to carry on the business of transport agents, carriers of passengers and goods, etc. Subscribers: J. W. R. Sanders and Edith Sanders. Solrs.: Linklaters and Paines, 97, Cannon Street, E.C.

Berridge Aircraft, Ltd.—Private co. Reg. Oct. 19. Cap. £5,000 in 4,500 ordinary and 500 preference shares of £1. To carry on the business of manufacturers and letters on hire or hire-purchase of and dealers in aerial conveyances, etc. Directors: A. L. Wykes, F. Bates, P. Bates, Major Norman S. Bostock, M.C. Solrs.: Ironside and Co., Leicester.

The following are the sources of some of the pictures in this week's issue of THE AEROPLANE:—

Planet News, Ltd.: p. 567.

Topical Press Agency, Ltd.: pp. 564, 565.

PERSONAL NOTICES

BIRTHS

Barker.—On Nov. 2, at the Manor, Northwood, Middlesex, to Joan (née Redfern), wife of Wng. Cmdr. H. Barker, R.A.F.V.R.—a daughter.

Bilton.—On Oct. 30, at Wrecclesham Grange, Farnham, Surrey, to Pamela (née Stewart Wink), formerly of the W.A.A.F., wife of Sqdn. Ldr. W. E. Bilton, Bomber Command—a daughter.

Blackstone.—On Oct. 31, at Petersfield Hospital, to Kay (née Burley), wife of Sqdn. Ldr. M. E. Blackstone—a daughter.

Brittan.—On Oct. 30, at 5, Greengate Lane, Knarborough, to Bunty (née Burn), wife of Sdn. Ldr. John Brittan, R.C.A.F.—a son.

Cattell.—On Oct. 29, at Grove Nursing Home, Barton, Hants, to Joan, wife of Wng. Cmdr. D. E. Cattell—a daughter.

Dixon.—On Nov. 3, at Chelsea Hospital for Women, to Pamela (née Russell), wife of Wng. Cmdr. F. W. P. Dixon, M.B.E., F.R.C.S. (over-seas)—a son.

Drummond.—On Oct. 20, at Dawsholme, Marywood Square, Glasgow, S.1, to Joan (née Dey), wife of Flt. Lt. E. C. Drummond—a son.

Dudgeon.—On Nov. 6, at Greensnorton, Towcester, Northants, to Phyllis, wife of Wng. Commander A. G. Dudgeon, D.F.C., R.A.F.—a son.

Gordon.—On Oct. 31, at 19, Bentinck Street, W.1, to Helen (née McCorquodale), wife of Capt. W. G. Gordon, of Lude, The Scottish Horse, attached R.A.F.—a daughter.

Greening.—On Oct. 30, at Charing Cross Hospital, to Hilary (née Berryman), wife of Sqdn. Ldr. W. P. Greening, F.R.C.S.—a daughter.

Haynes.—On Oct. 26, at West Kirby, to Edna, wife of Flt. Lt. F. J. P. Haynes—a son.

Hockridge.—On Oct. 23, at Queen Charlotte's, Hammersmith, W.6, to Eileen (née Elliott), wife of L.A.C. Ted Hockridge, R.C.A.F.—a son.

Leggate.—On Oct. 17, at Brookfield Nursing Home, West Kirby, to Jean, wife of Wng. Cmdr. J. R. Leggate, D.S.O.—a son.

Levis.—On Oct. 31, at Ottawa, to Yvonne (née Hewetson), wife of Wng. Cmdr. Leslie G. Levis, R.A.F.—a daughter.

Lodge.—On Oct. 26, at St. Vincent's Nursing Home, Harrow, to Jean (née Sullivan), wife of Sqdn. Ldr. J. D. Lodge, R.A.F.—a son.

Keeling.—On Oct. 29, at Highfield Nursing Home, Sutton Coldfield, to Ursula "Judy" (née Hartley), wife of Flt. Lt. R. V. Keeling, D.F.C.—a daughter.

Macmillan.—On Oct. 31, at Kinnaber Mill, by Montrose, to Dorothy (née Hillas), wife of Flt. Lt. A. R. Macmillan—a son.

Mark-Wardlaw.—On Oct. 27, at 37, Bawtry Road, Doncaster, to Nancy, wife of Act. Wng. Cmdr. William P. Mark-Wardlaw, R.A.F.V.R. (Rear Admiral ret'd.)—a daughter.

Morison.—On Oct. 27, at Driftwood, Onslow Avenue, Cheam, to Stella, wife of Flt. Lt. H. Gordon Morison, R.A.F.V.R.—a son.

Nixon.—On Oct. 26, at the Middlesex Hospital, to Frankie (née Christianson), wife of Flt. Lt. W. E. Nixon—a daughter.

Pimblett.—On Oct. 23, at Bairstow Street Nursing Home, Preston, to Madeleine (née Duff-White), wife of Sqdn. Ldr. J. N. Pimblett, R.A.F.—a daughter.

Selby.—On Oct. 29, at Queen Charlotte's Hospital, London, to Pamela, wife of Cdt. H. B. S. Selby, R.A.F.V.R.—a daughter.

Sheldon.—On Nov. 3, at The Haven, 47, Milverton Road, N.W.6, to June (née Koster), wife of Jack Sheldon, R.A.F.—a son.

Stranger-Jones.—On Oct. 29, at the Woolavington Wing, Middlesex Hospital, to Iris Christine (née Truscott), wife of Flg. Off. L. J. Stranger-Jones, R.A.F.V.R.—a daughter.

Talbot.—On Oct. 29, at Elm House, Boxmoor, to Barbara (née Dafforn), wife of Flt. Lt. J. R. Talbot, R.A.F.O.—a son.

Tidd.—On Oct. 28, at Highfield Nursing Home, Stanmore, to Elsie, wife of Wng. Cmdr. G. C. Tidd, R.A.F.—a daughter.

Taylor.—On Oct. 29, at Hill Nursing Home, to Molly Barbara (née Hobson), wife of Wng. Cmdr. P. C. Dudley Taylor, R.A.F.—a daughter.

Van Dijken.—On Oct. 25, at Holybourne Nursing Home, Alton, Hants, to Bebe, wife of Sgt. Jan Van Dijken, R.D.N.A.S., 320 Sqdn.—a son.

Watkinson.—On Oct. 30, at Twyford Nursing Home, Bognor Regis, to Deli (Beryl née Gunst), wife of Flt. Lt. A. B. Watkinson—a daughter.

Wells.—On Nov. 1, at Mildmay Nursing Home, N.1, to Marjorie (née Clutterbuck), wife of Harry Wells, R.C.A.F.—a daughter.

Wood.—On Oct. 30, at Woking Maternity Home, to Betty ("Toni" née Mann), wife of Flt. Lt. J. D. Wood—a son.

Yetton.—On Oct. 27, at Rosehurst, Sandford Park, Cheltenham, to Edna, wife of the late Sgt./Observer William C. Yetton, R.A.F., formerly of the Midland Bank, Ltd., presumed killed in action, March, 1943—a son.

MARRIAGES

Bentley-Hall.—On Oct. 29, at Windermere Parish Church, Roderick N. C. Bentley, 9th Queen's Royal Lancers, only son of the late Mr. and Mrs. Wilfred Bentley, of Westward Ho, Windermere, and Huddersfield, to Anne Moreen Hall, W.A.A.F., only daughter of Dr. and Mrs. Hall, of Greywall, Windermere.

Bocquet-Whittle.—On Oct. 30, at the Church of the Holy Name, Oxton, Flg. Off. Charles Emile Joseph Bocquet, R.A.F., younger son of the late Casimir Bocquet and of Madam Bocquet, to Jean Jessie Richardson Whittle, only daughter of the late Capt. J. P. Richardson Whittle, M.C., and of Mrs. Whittle, Oxton, Birkenhead.

Broadbent-Berry.—On Oct. 30, at Charlton Marshall, Dorset, Sqdn. Ldr. Richard Broadbent, R.N.Z.A.F., to Melanie, elder daughter of Capt. and Mrs. Berry, of St. Ives, Cornwall.

Carcasson-Kubinzky.—On Nov. 9, Flg. Off. George V. Carcasson, R.A.F.V.R., to Baroness Regina Helena Kubinzky.

Cross-McCullough.—On Oct. 27, at St. Matthew's Church, Muswell Hill, Flt. Off. W. E. John Cross, R.A.F., younger son of the late Mr. and Mrs. E. V. Cross, of London, to Sister M. Valerie T. M. McCullough, P.M.R.A.F.N.S. (R), only daughter of Mr. and Mrs. A. V. McCullough, of 5, Woodside, Fortis Green, N.10.

Ferguson-Wilson.—On Oct. 27, at Holy Trinity Church, Kensington Gore, Lt. Antony Ferguson, R.A., son of Mr. Charles Ferguson, of Rushlake Green, Sussex and Mrs. Byrte, Little Mead, Wiltshire, Dorset, to S/O. Margaret Wilson, W.A.A.F., younger daughter of Sir Horace and Lady Wilson.

Hallmark-Parker.—On Oct. 15, at Cairo Cathedral, Major John A. Hallmark, the Manchester Regt., to Flt. Off. Pamela M. Parker, W.A.A.F., of Stone Lodge, Wilton.

Mitchell-Conquest.—On Oct. 20, quietly at Maidenhead, Wng. Cmdr. John Cunningham Mitchell, R.A.F., to Mrs. Sybil Stewart Conquest, of Shurlock Row, Berkshire.

Moore Darling-Pullman.—On Oct. 21, in Kenya, Sqdn. Ldr. Geoffrey Moore Darling, R.A.F., only son of Prebendary and Mrs. Moore Darling, of Oswestry Vicarage, Shropshire, to Consuelo, only daughter of Mr. and Mrs. Frank Cecil Pullman, of Old Hedges, Churt, Surrey.

Owen-Menzies.—On Oct. 20, at St. Columba's Church, Elgin, L.A.C. Tom Gray Owen, R.A.F., of Kenton, to Mary Christina Menzies of Elgin.

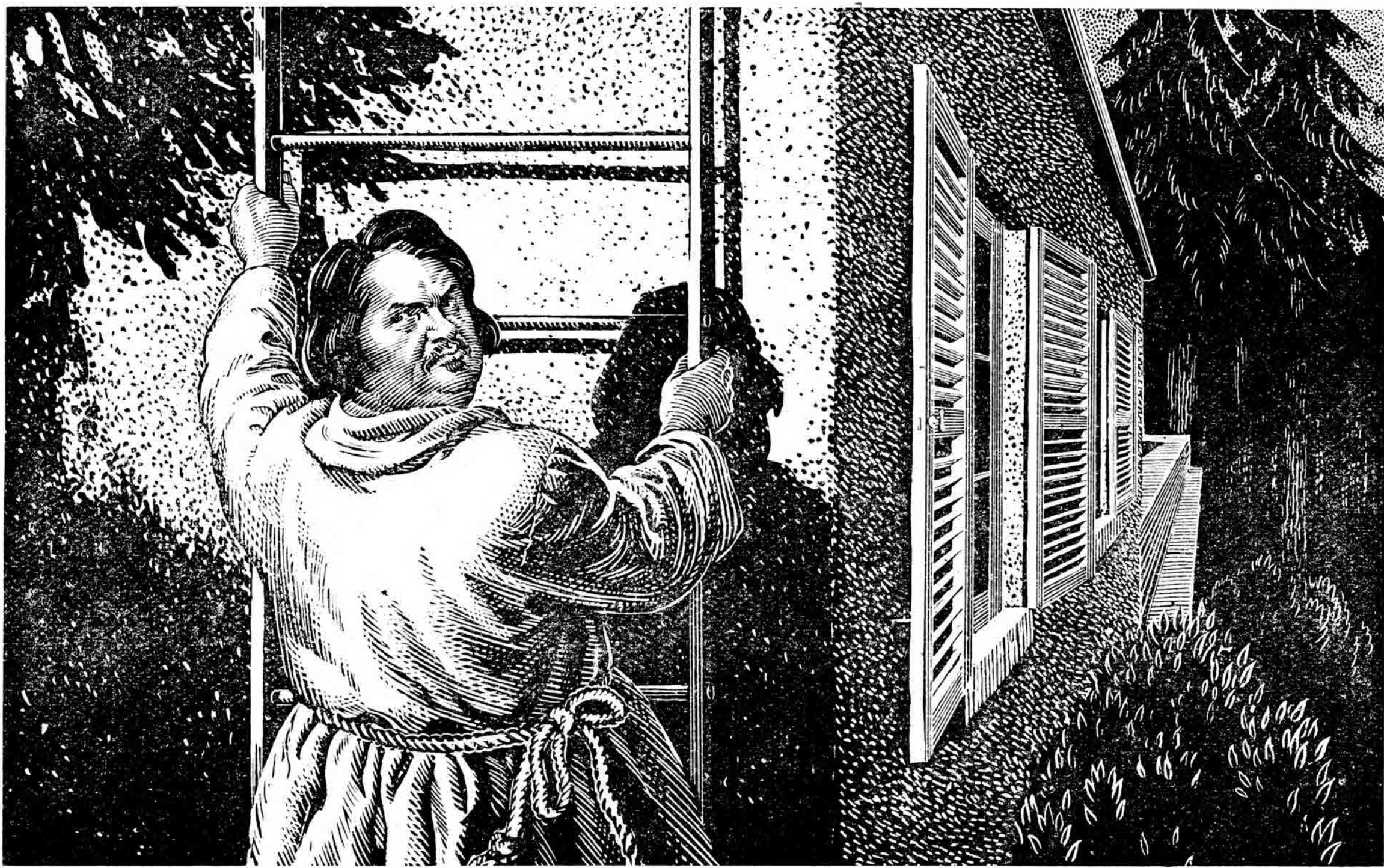
Plutte-Lyell.—On Oct. 28, at the Savoy Chapel, Flt. Lt. Robert Plutte, D.F.C., to Patricia Lyell.

Shepherd-Fox.—On Oct. 30, at the Minster, Warminster, Flg. Off. Douglas George Shepherd, R.A.F.V.R., to Dorothy May Carlyle Fox.

Stowell-Bradfield.—On Oct. 23, at St. Peter's, Eaton Square, Eldon Stowell, M.A., B.M., B.Ch. Oxon, only son of Mr. T. E. A. Stowell, M.D., F.R.C.S., and Mrs. Stowell, of 37, Sussex Gardens, W., to S/O. Hilda Mary Bradfield, W.A.A.F., only daughter of Mr. and Mrs. Bradfield, of 26, Dulwich Village.

Woolfe-Kynaston Williams.—On Oct. 30, in London, Flt. Lt. Geoffrey Woolfe, R.A.F.V.R., elder son of Mr. and Mrs. Woolfe, of Hove, to Phyllis, widow of Flt. Lt. Kynaston Williams, and only daughter of Brig.-Gen. and Mrs. Wood, of Guildford.

Wood-Trumpler.—On Oct. 30, very quietly at All Hallows' Church, Wellingborough, Sub. Lt. (A) J. A. F. Wood, R.N.V.R., elder son of Mr. and Mrs. J. Flint Wood, of Charnwood, Wellingborough, to Elizabeth Steward Trumpler, W.R.N.S., younger daughter of Mr. and Mrs. H. C. Trumpler, of Saundersfoot, Pem.



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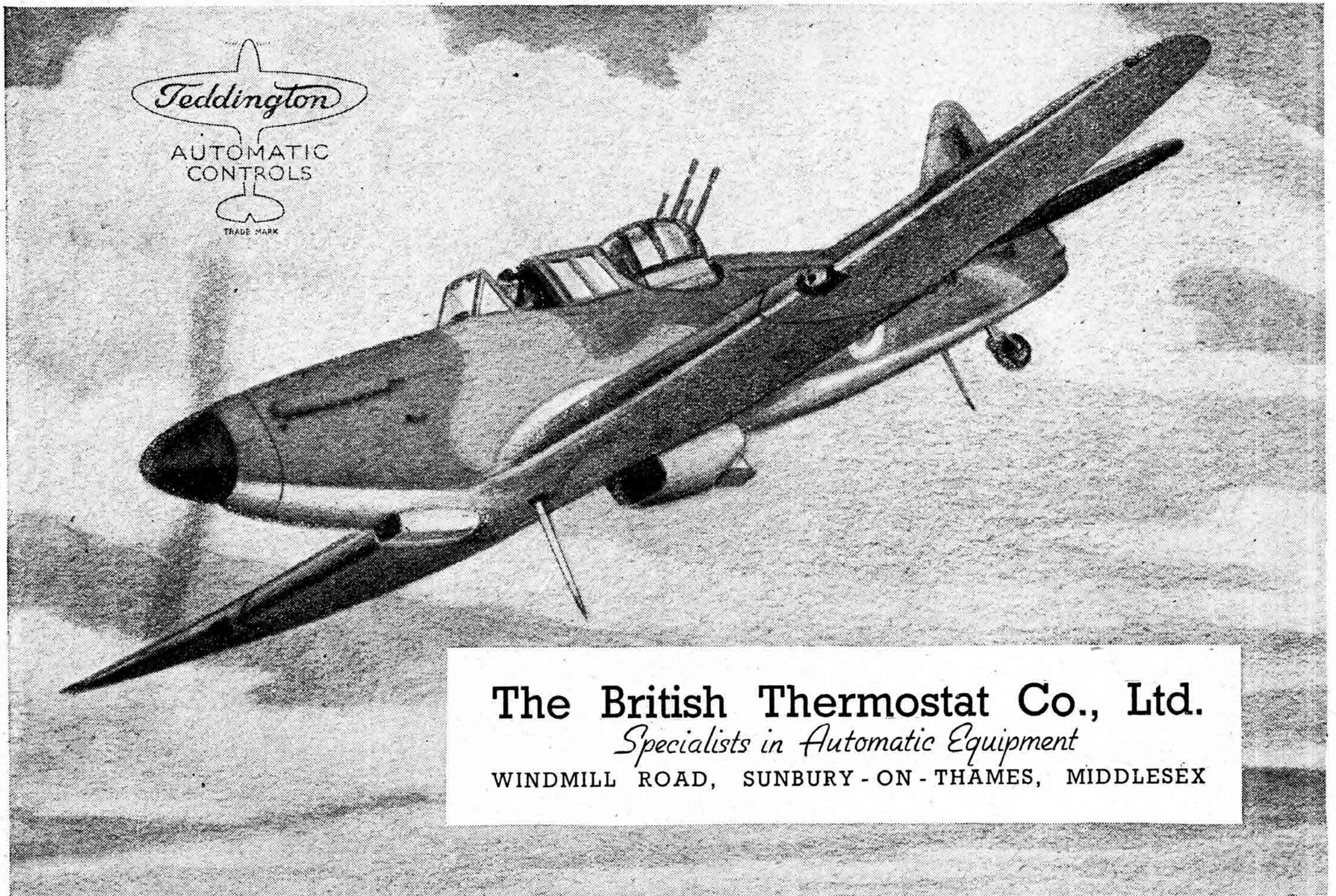
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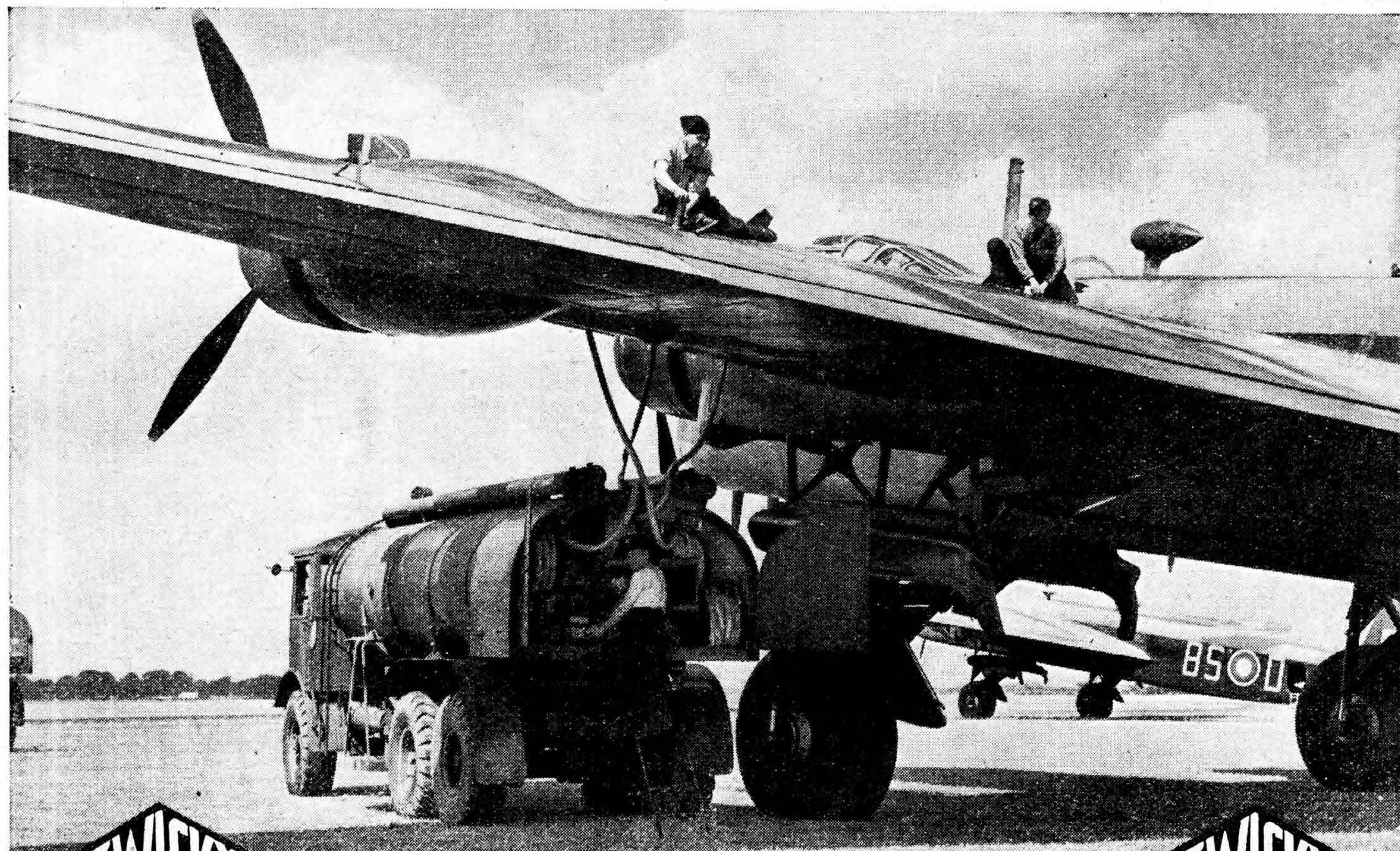
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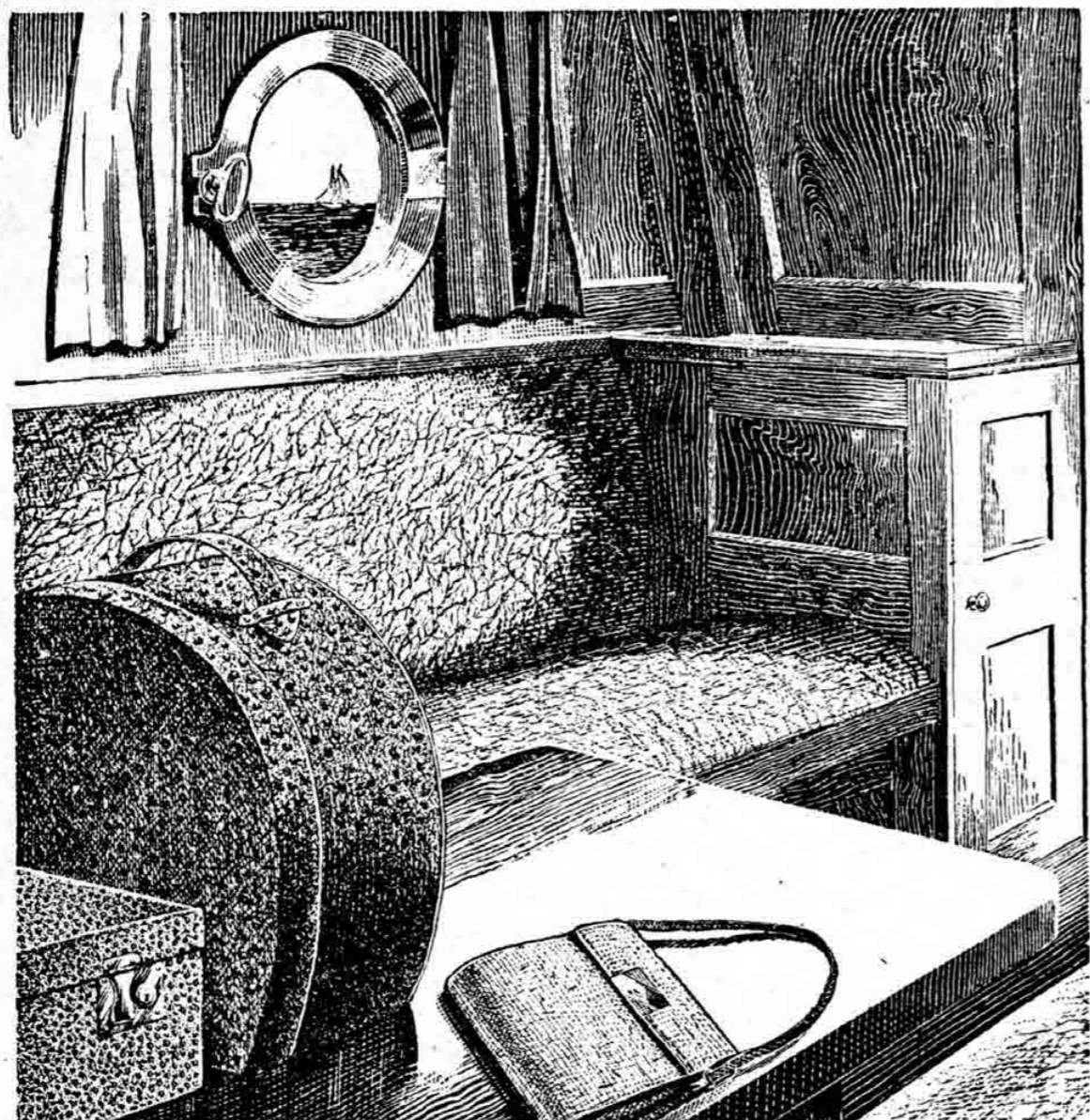


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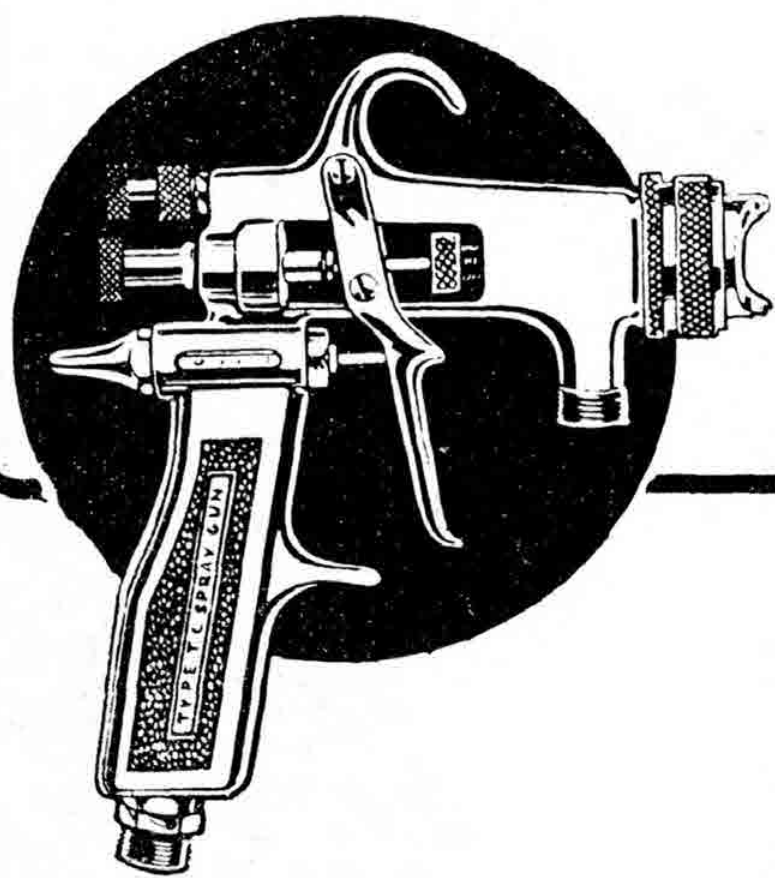
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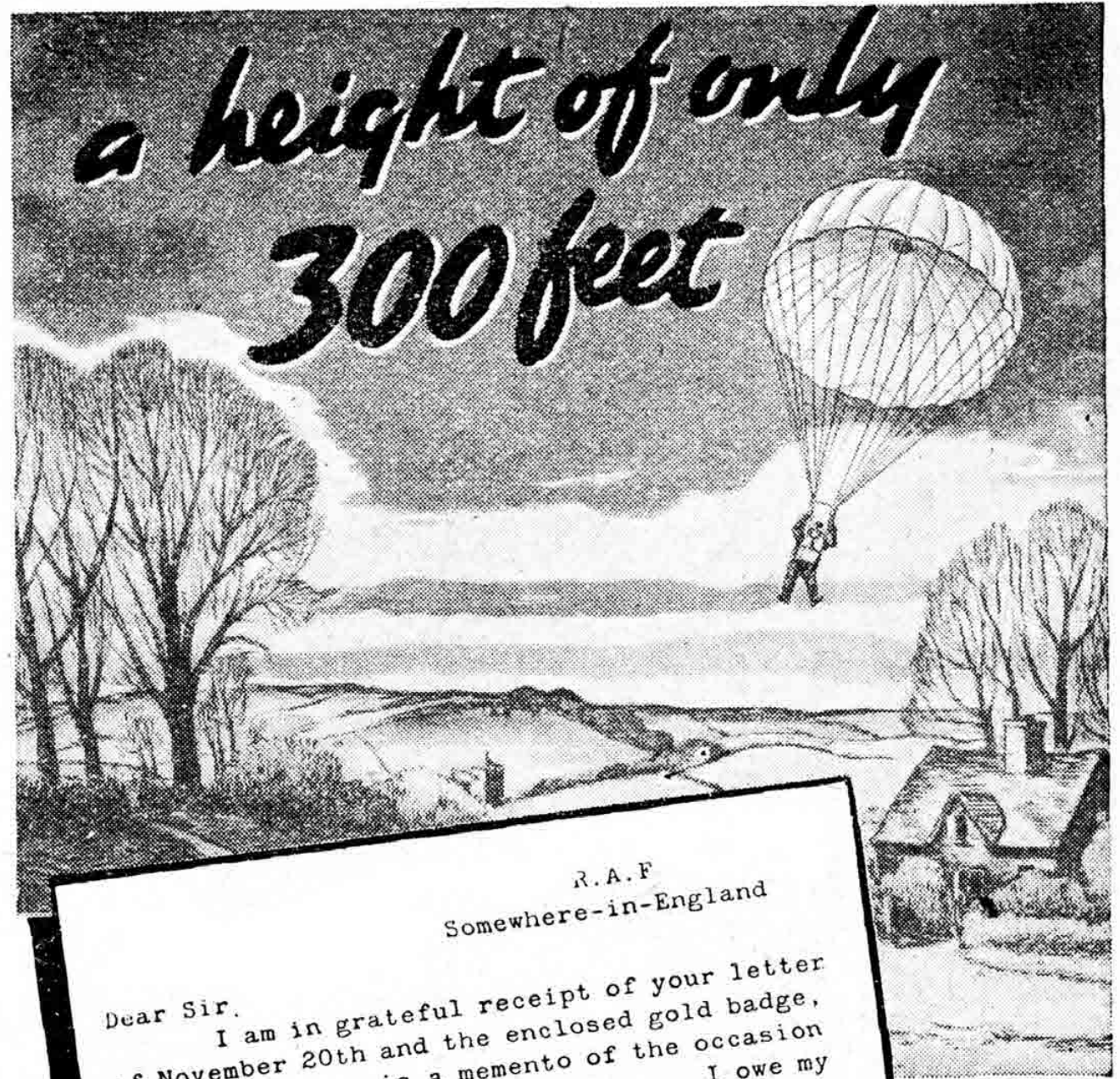
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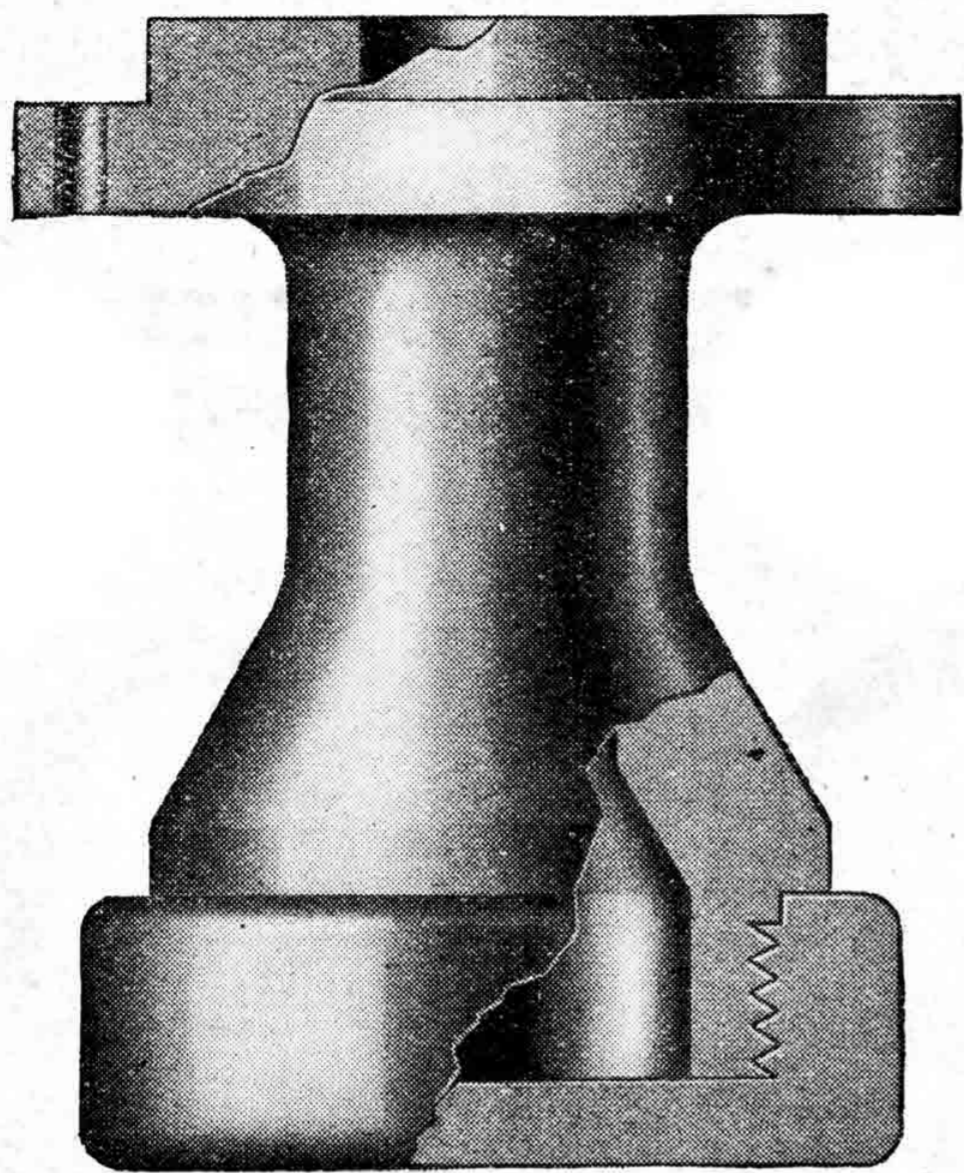
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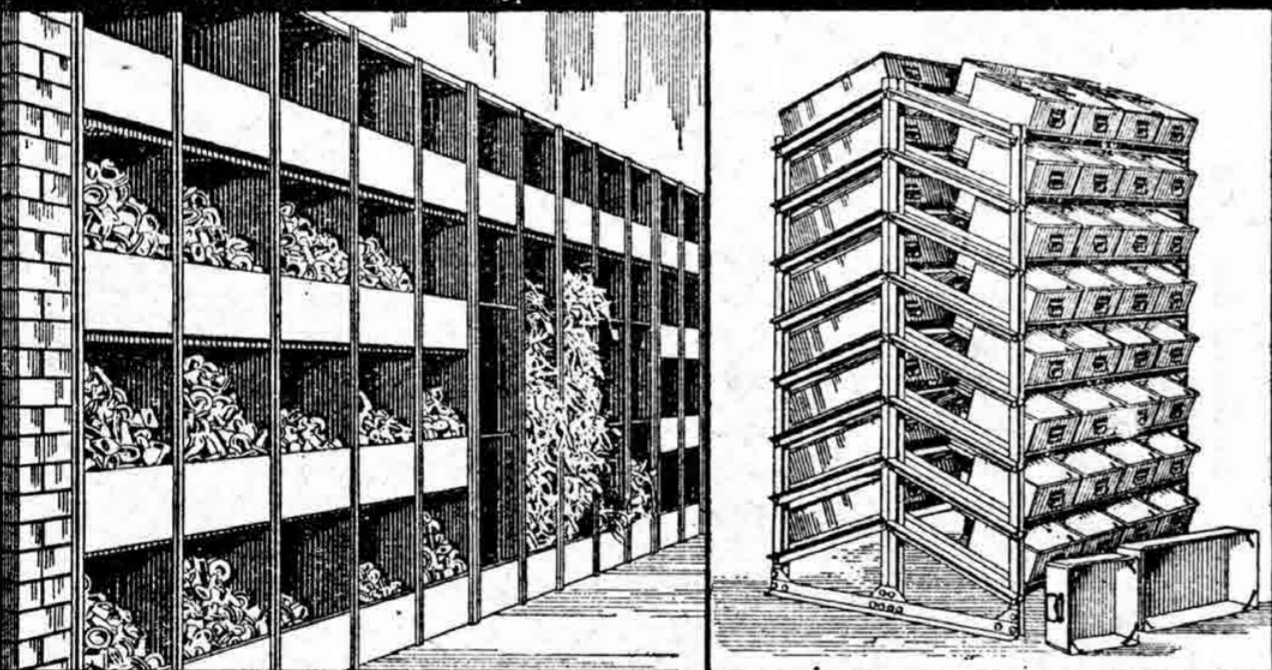
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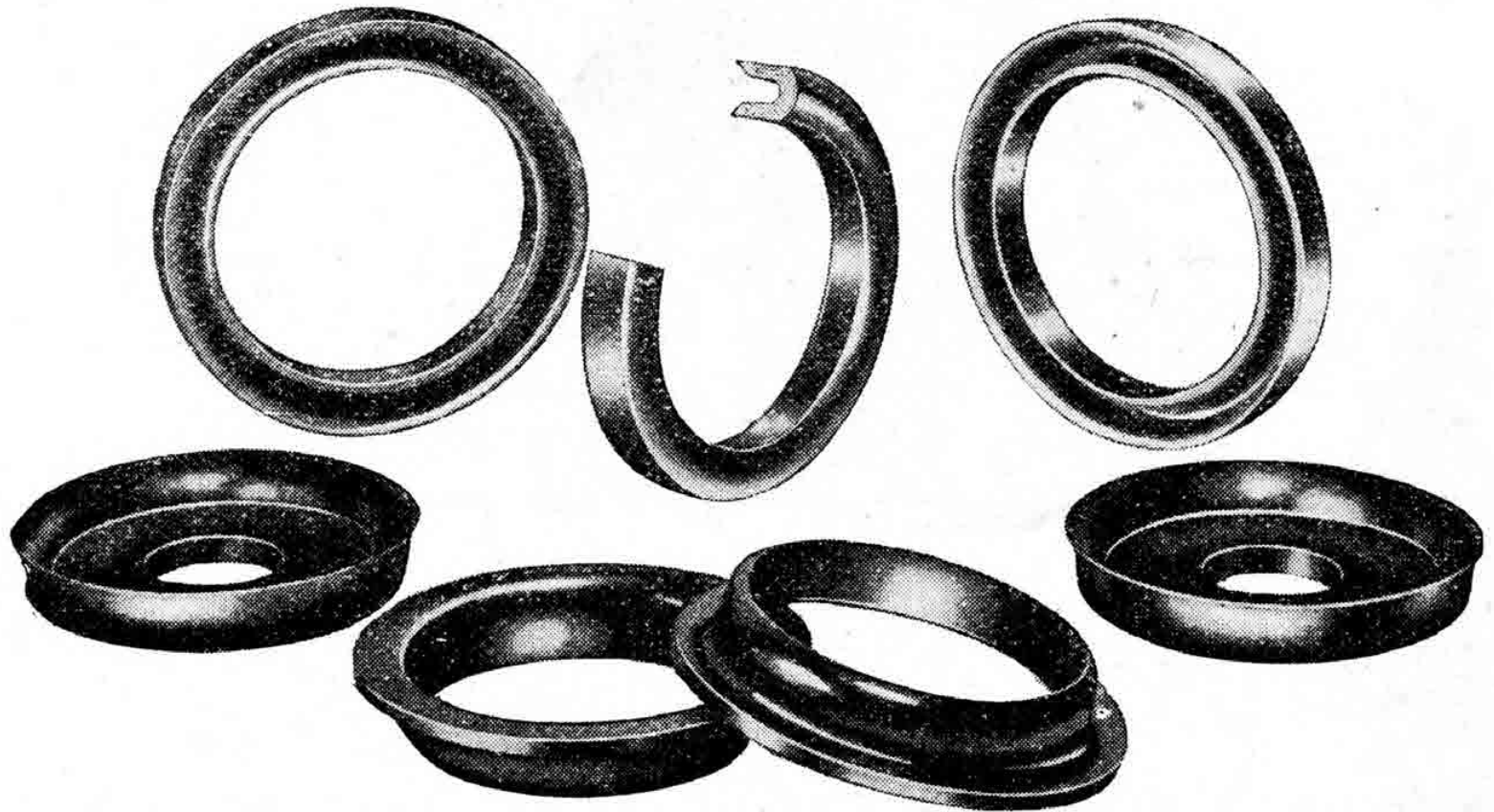
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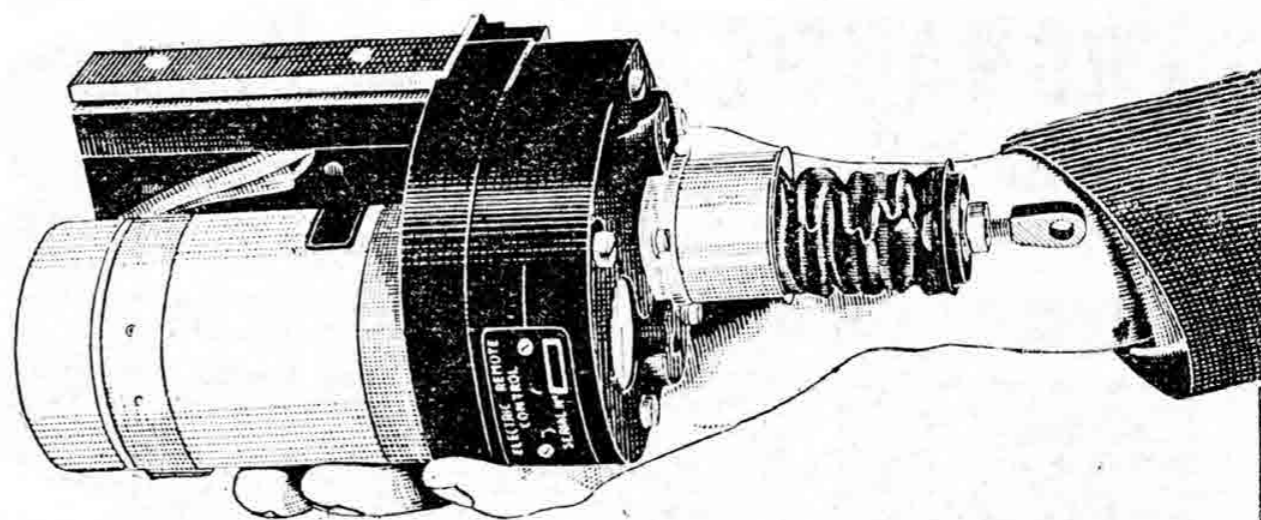
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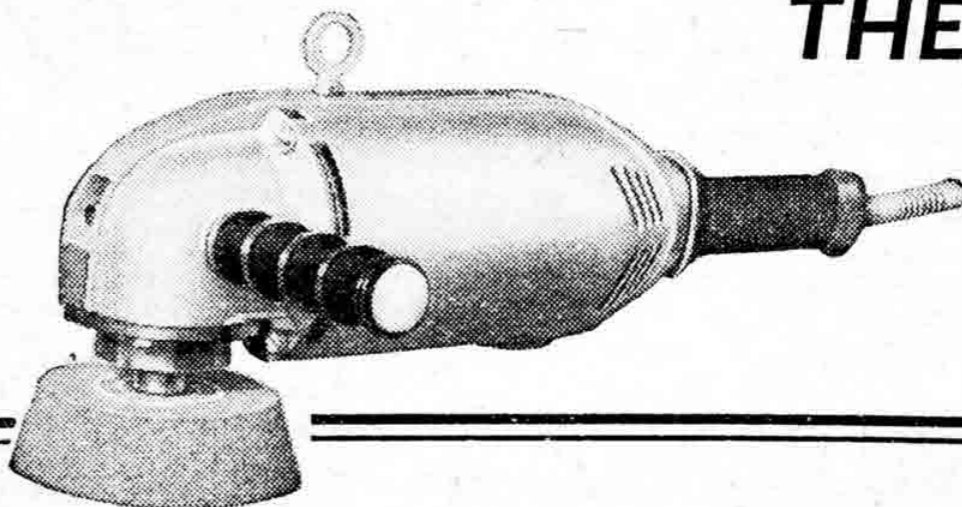
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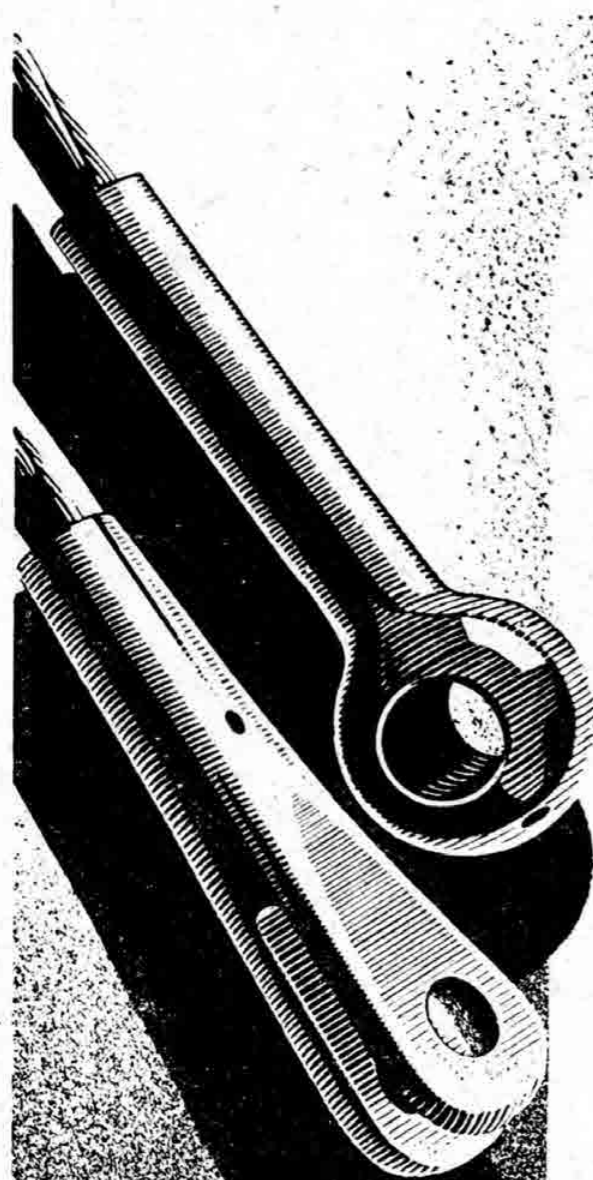
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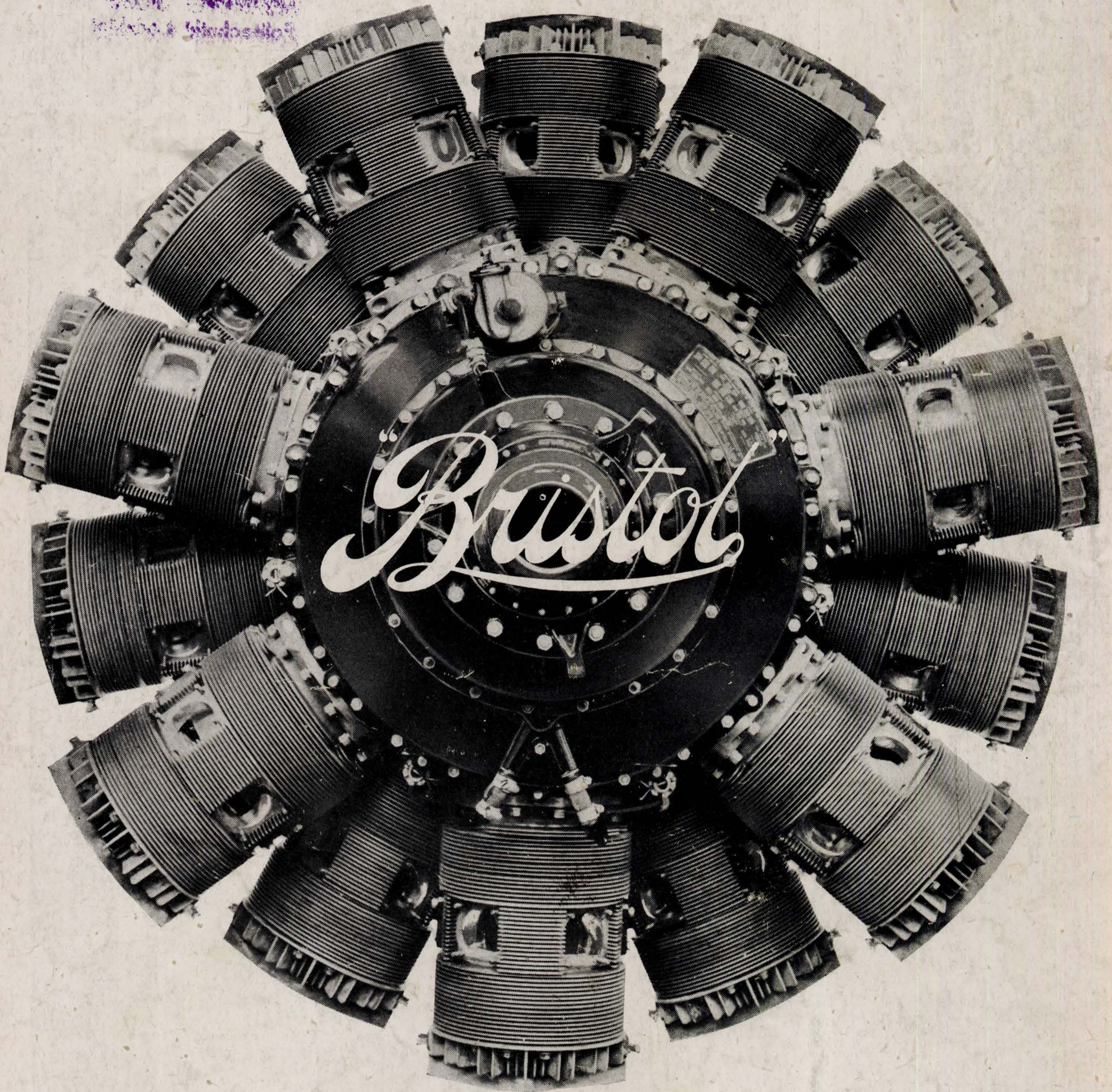


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