



# Passing the Buck!

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## MEMO

FROM DRAWING OFFICE TO WORKS

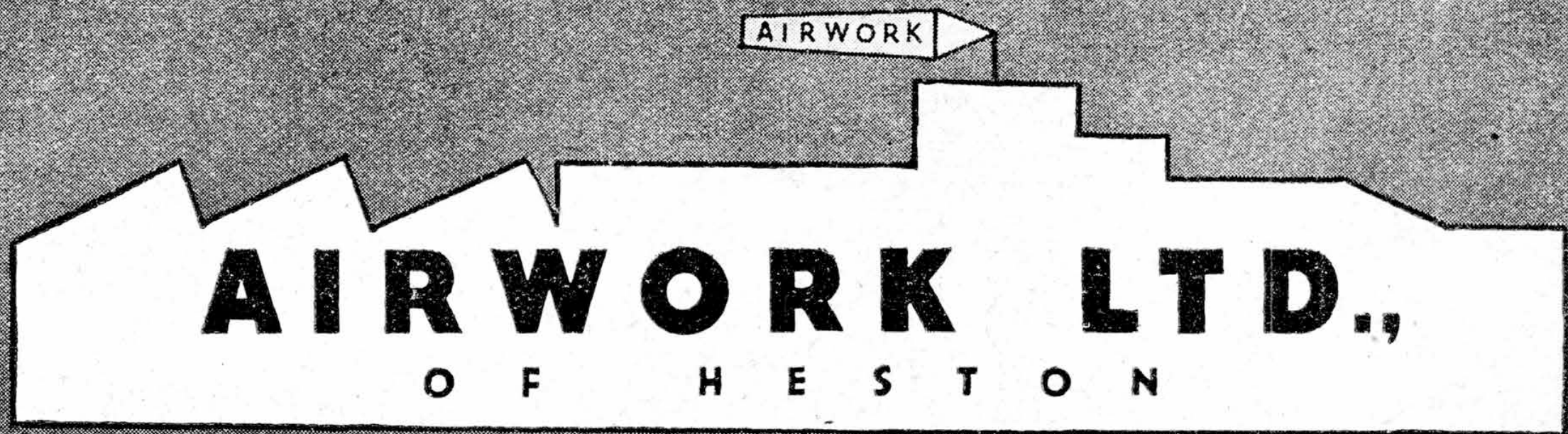
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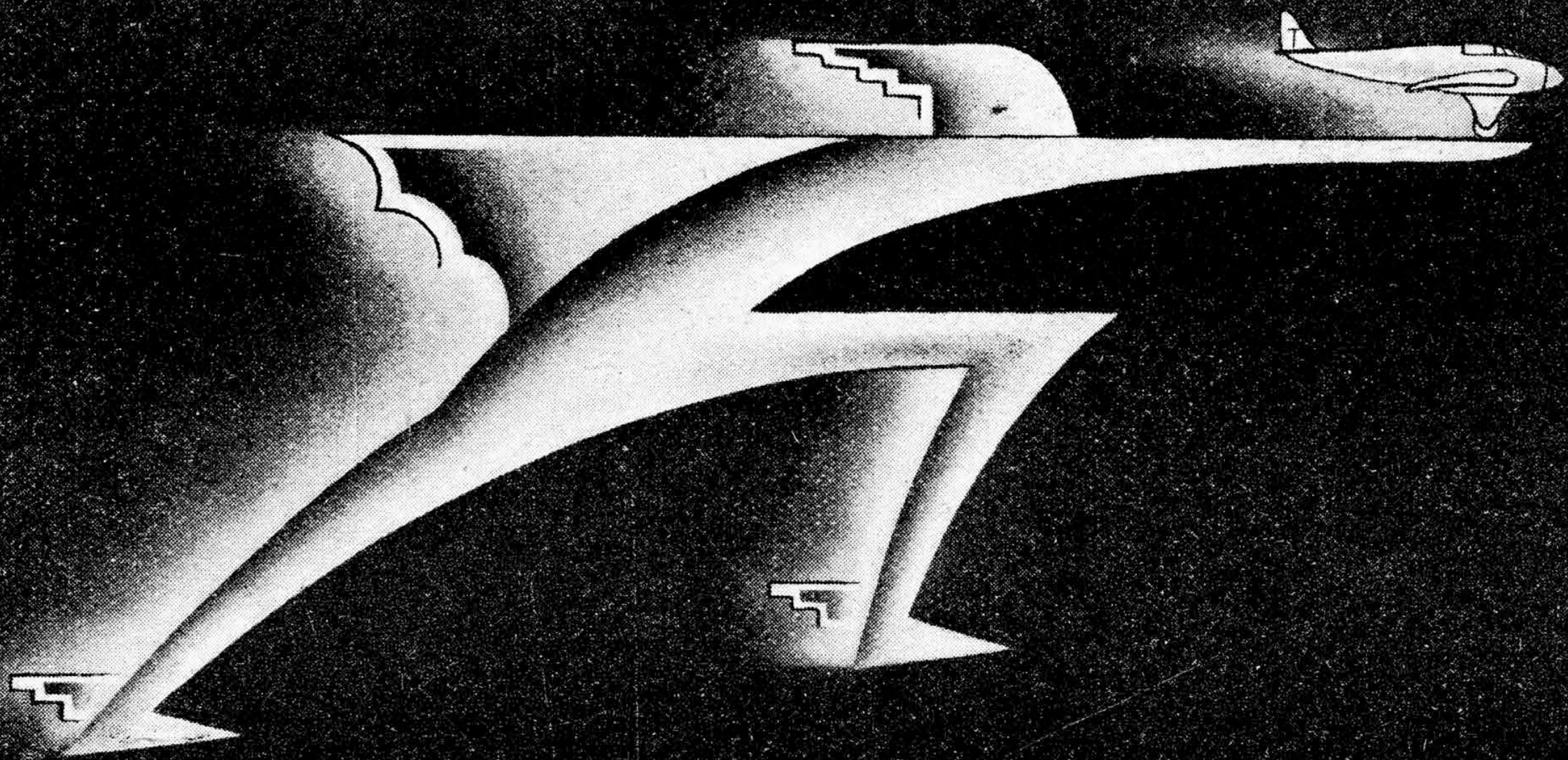
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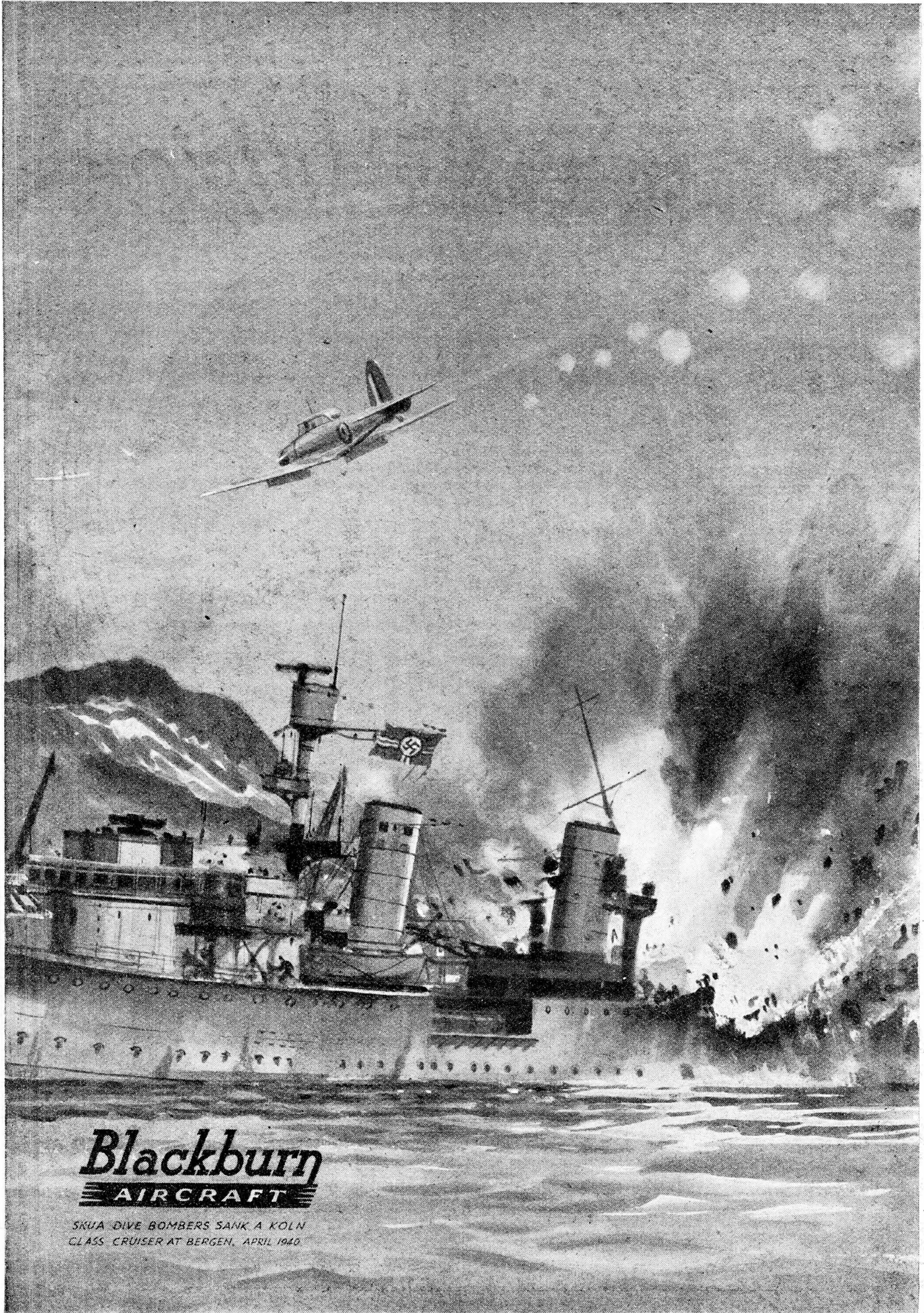
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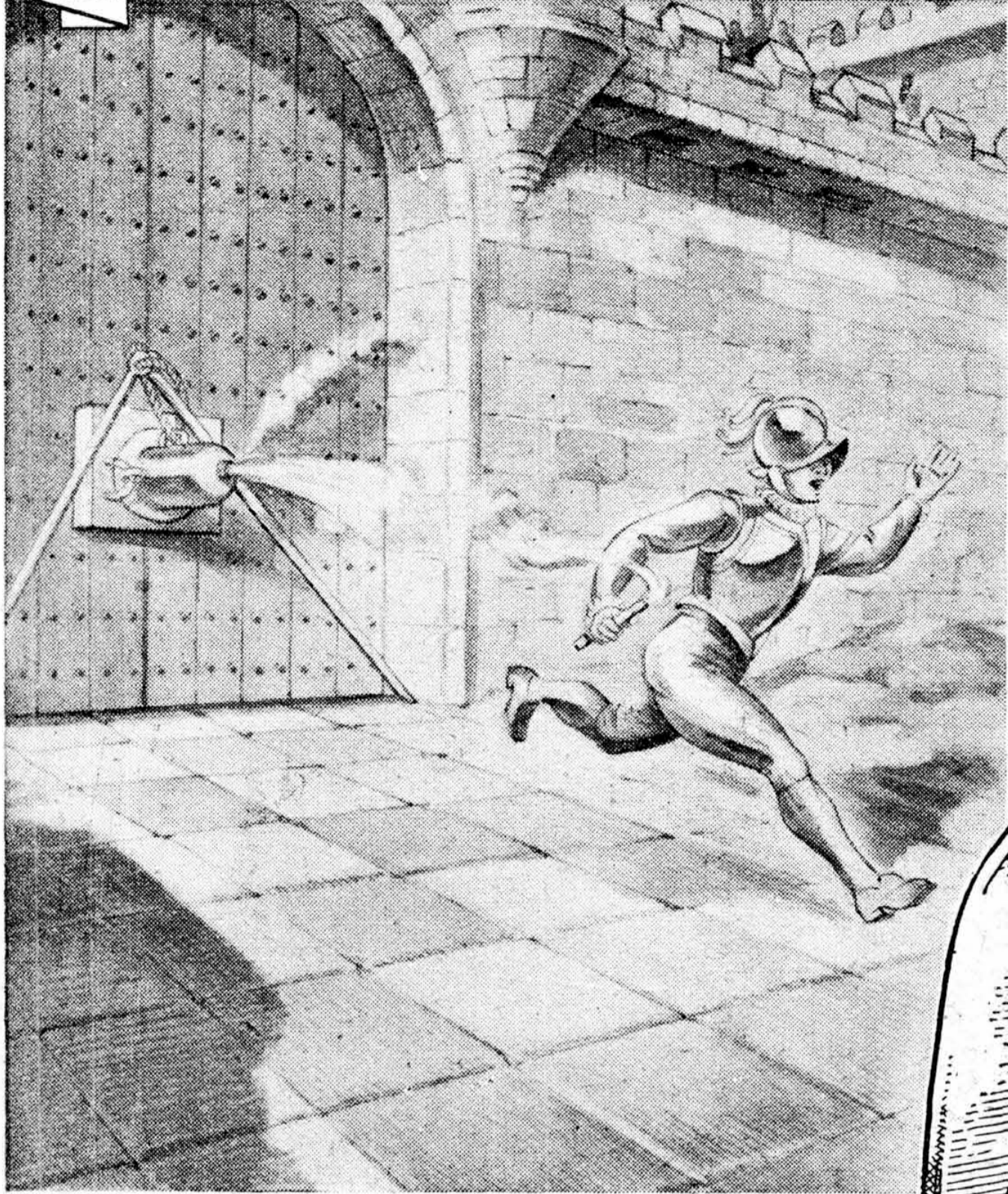
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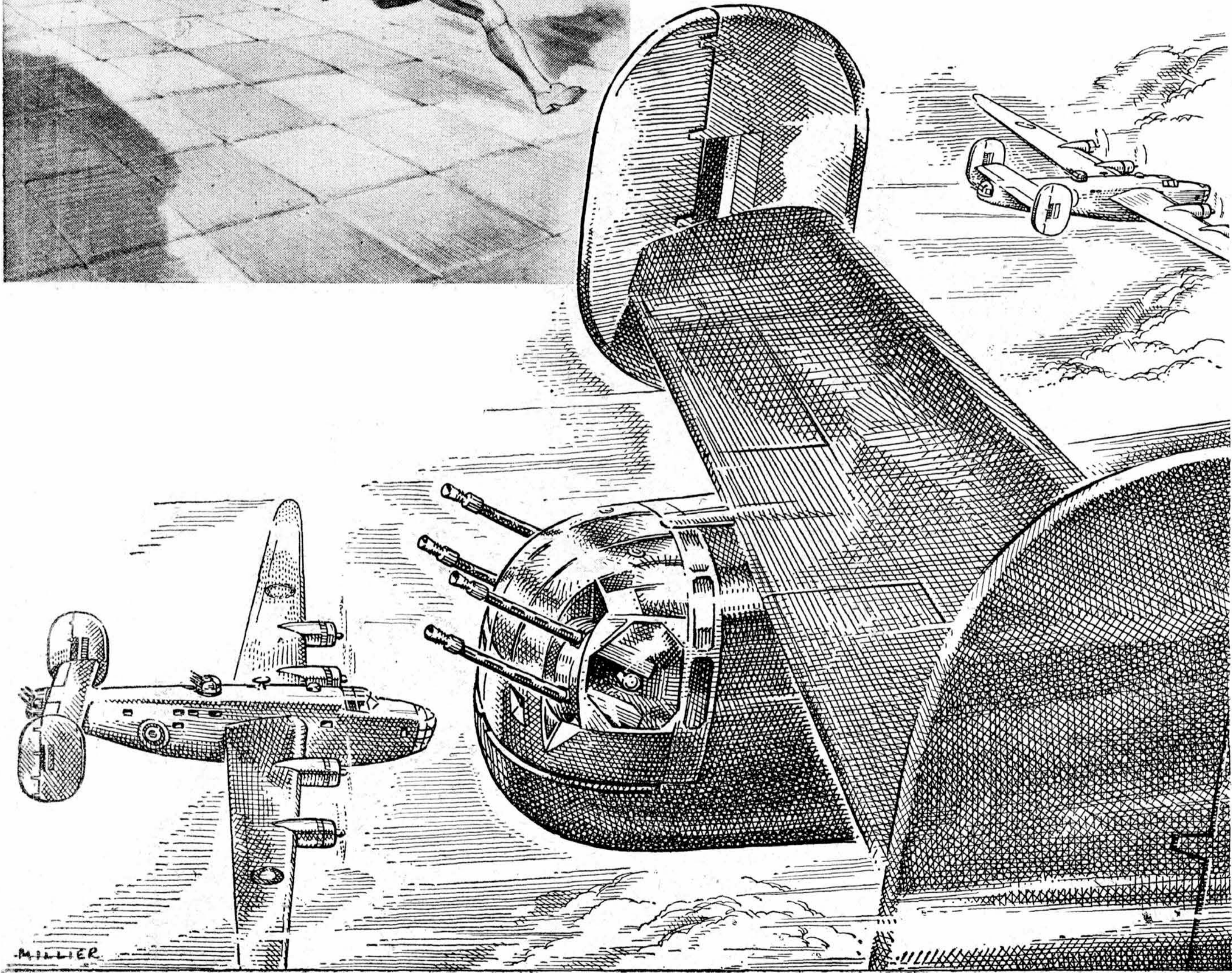
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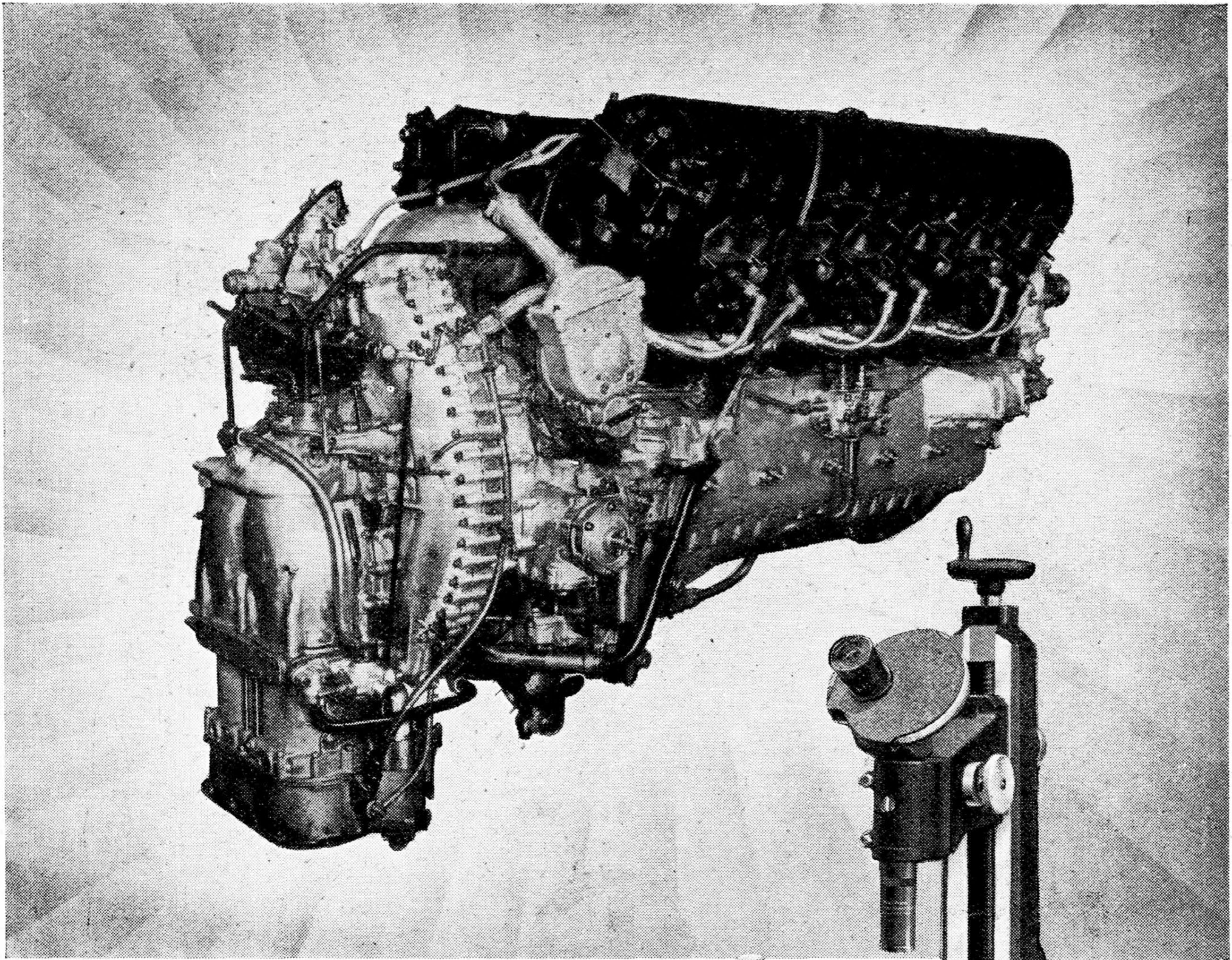
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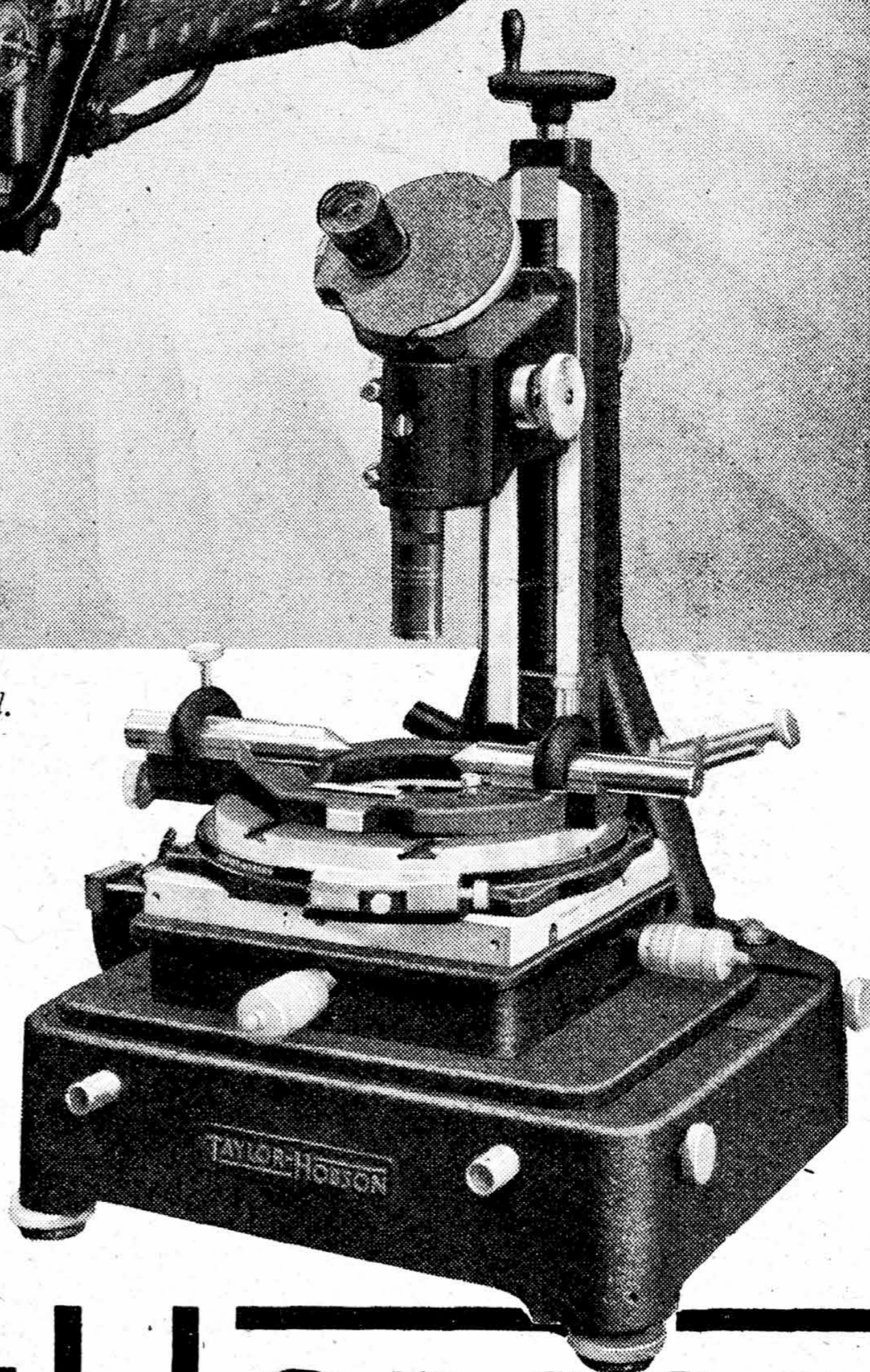
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*Photograph of "Merlin" engine courtesy Rolls-Royce Ltd.*

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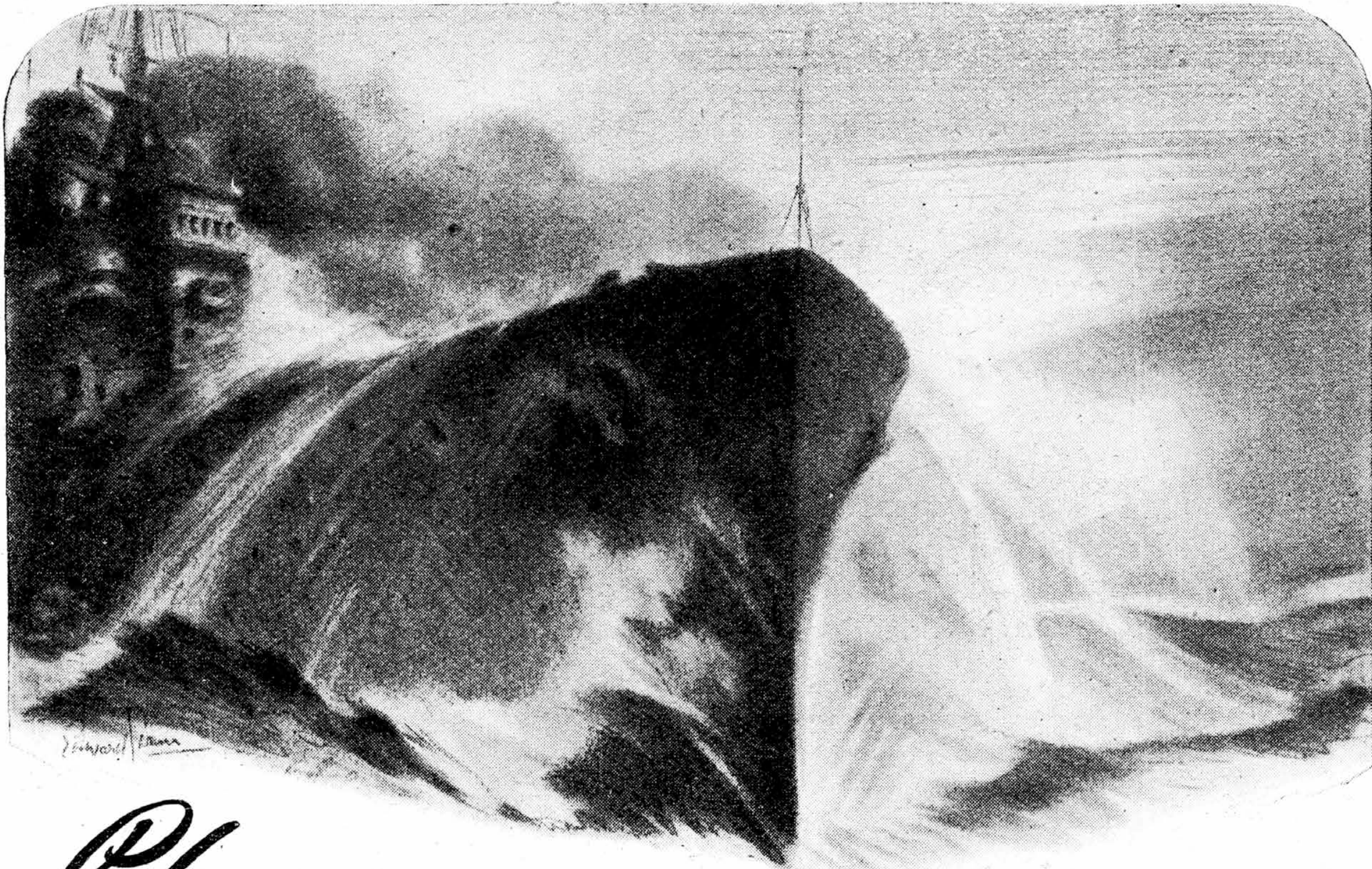


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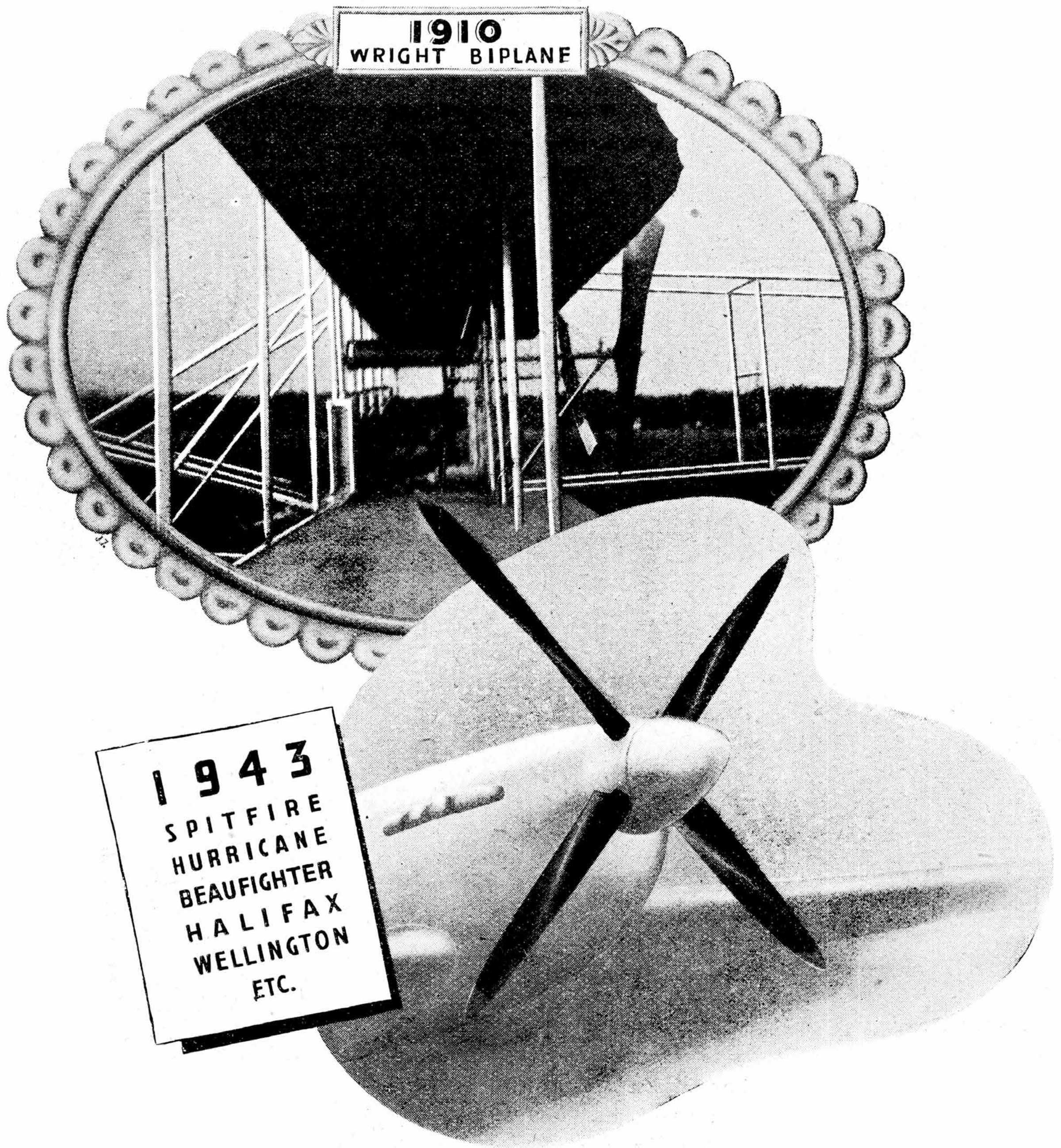


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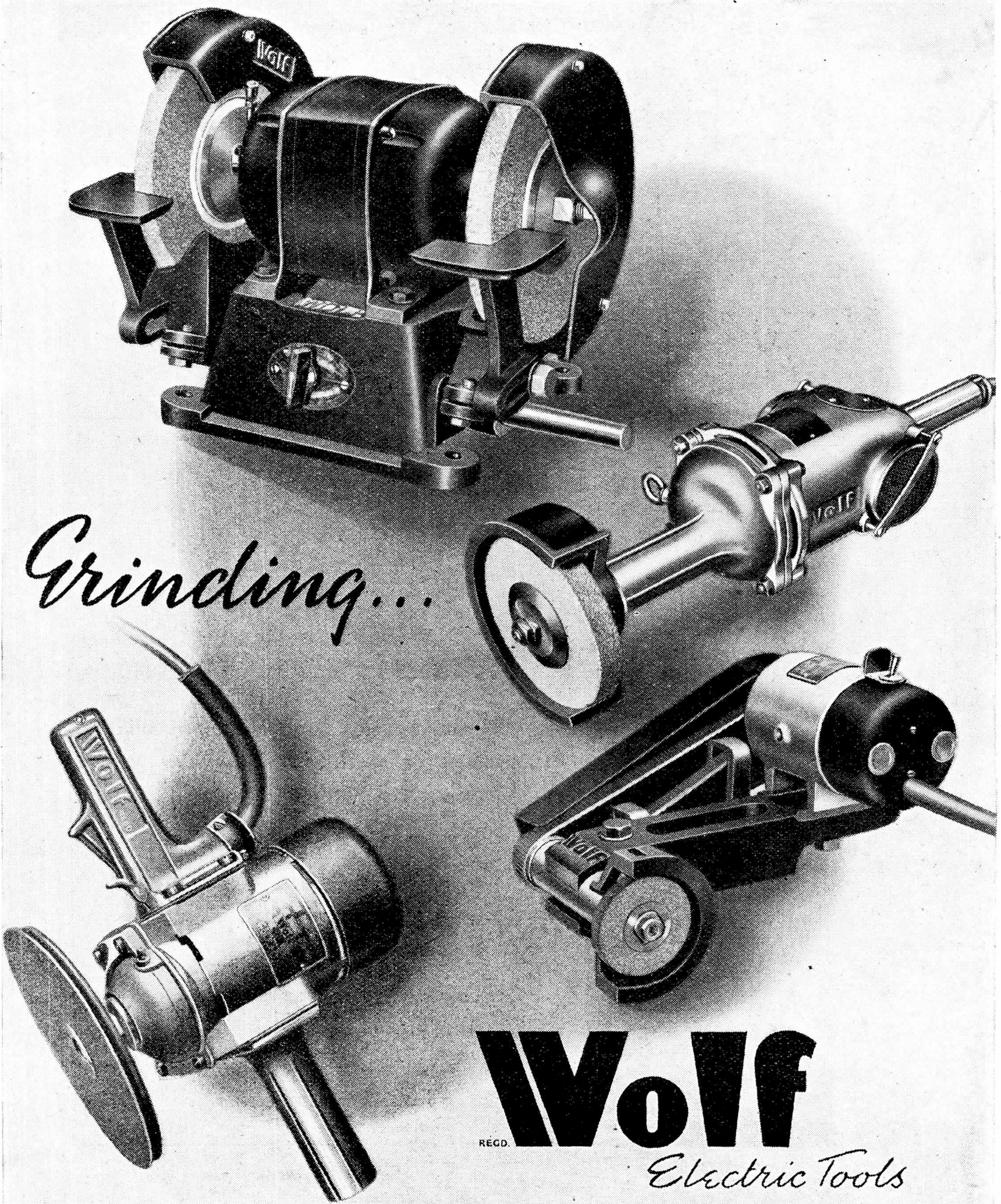
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## MATTERS OF MOMENT

### The True Aim of Strategic Bombing

TOO MUCH attention is being given by the public to the squealing of the Germans. Too little weight is given to the purely material effects of the strategic bombing. The outcry of the Germans is a sign of apprehension—the creaking of the tree as the fringes of the hurricane bend it—but it is not really concerned with the reaction of the human spirit to individual ordeal. The moral strength of the population is not yet the concern of the masters of Germany. What genuinely disturbs them is the loss of the material of war.

Now more than ever the British people should understand the basic principles which underlie and govern strategic bombing. The enemy naturally describes it as "terror bombing." Any propagandist stick has been good enough for him, from the pathetic wail of encirclement and lack of lebensraum to the hypocritical assertion of a benevolent mission for the raising of "inferior" peoples. Between the two there came his own period of terror, blatantly announced as a means of breaking the human will to resist. In that phase, the bomber was his tool.

German reliance on bombing as a means of spiritual compulsion is so typically German that it should not be mistaken for a gospel of universal acceptance. Least of all should it appeal to those residents of British towns who have endured German mass bombings. Those who survive the bombs may be shaken and weary, but the satisfaction which comes simply from having survived is a source of strength and of fresh resolution. The Germans in their arrogance failed to distinguish between the breaking of the spirit through the torture of the concentration camp and the resurgence of the spirit through escape from a night of fear.

#### The Will and the Power

Bomber strategy is a strategy of war and not of politics. Its business is not to frighten or persuade an enemy people into submission. British bombers were used in the "bomphlet" days for persuasion. The politicians and their appeasement were responsible then and they are responsible now for the dropping of leaflets in Italy. Those things belong to political warfare but they have no place in bomber strategy. Force and force alone is the concern of the bomber. Its function is to stop the enemy from making, distributing and using the things he needs in war. The aim is to take away not the will but the power to go on fighting. That makes it the most ruthless of all aspects of modern war. Ruthless though

it is, the war waged by the bomber has proved to be the most economical in human life.

At least two-fifths of the power of Germany to make what it needs in war has been destroyed by Allied bombers in the Ruhr and the Rhineland. The process of destruction is being and will be extended as the nights lengthen, to other parts of the German producing system. The neat plan of last week, which embraced Friedrichshaven and Spezia in a return trip, showed the elasticity of the bomber arm. The bombing of Gelsenkirchen through clouds showed the removal of one limitation. Bomber war is becoming not only more intense and more far-reaching but also less intermittent. What Essen or Bochum suffer to-night, Linz or Pilsen may endure to-morrow even though to-morrow bring a dirty night.

#### Disarming a Warrior Nation

The important point is that the ordeal is not devised for the reduction of the people of Essen or Bochum or Friedrichshaven or Pilsen so that they will decline to have any more part in the War but for the reduction of those towns and their factories so that the people cannot have any more part in the War in those places. They are to be forced out of contributing to the War by being deprived of the means. That may impose hardship on them. So did the German occupation of Warsaw and Kharkov. It may mean the loss of their homes. So did the German advance into Odessa. It may mean bereavement. So has the march of German troops through Poland and Russia. Strategic bombing is in the nature of an invasion—a relatively bloodless invasion—directed not to the subjugation but to the disarming of a warrior nation.

Between the Ruhr and the coast, arms to oppose this invasion have been concentrated. Fully 1,000 fighters and 30,000 guns are said to be massed against Allied bombers. They are not short of ammunition. The armies are not short of arms or other necessary supplies but they are not sufficiently assured of continuing supplies to launch offensives as they once did. They are having to stand and wait for whatever may be coming to them. The time may come when they are inadequately supplied with the means even of static defence. That is the prospect which the masters of Germany, unable to defeat the bombers, have to face. The task of the bombers is not merely to appal Germany by the prospect of insufficiency but to forge ahead with destruc-

tion until her impotence confronts and paralyzes her.

In that process a sense of hopelessness may descend upon the civilian population as it is driven out of home after home or set time after time to rebuild smashed factories and workshops. That result will be incidental to the achievement of the main objective of striking the sword out of Germany's hand. The weakening of Germany's weapon strength may again have a lowering effect on the spirits of the soldiers, sailors and airmen on whom the duty of defence falls. That would be an important element in the fighting which is to come, but it would be an indirect and fortuitous outcome of bomber strategy and not a result of deliberate planning.

Not until the War is done can external political influence of any weight be directed against a nation like Germany. The nation is committed to a course of its choosing and controlled by a gang it lifted into power. The bombers are out to beat it, much as the Navy was out to beat it in the years 1914-18, by taking from it the means to fight. The squeals of a Göbbels are those of the elephant which finds himself trapped.

## Industry and Education

**TWO FACTORS** which will have a large influence on the British Aircraft Industry were discussed last week. On the future of British Air Transport, the Industry gave its views through the Society of British Aircraft Constructors. On the provision of proper educational opportunities for the aeronautical engineer, a conference arranged by the Royal Aeronautical Society began to evolve a set of proposals. The two things are inter-related. Industry's ability to make use of the best engineers will depend largely on the demands which commercial Air Transport can make on it. The Industry's power to meet the heaviest operational demands of the future may be determined by the education of the next generation of engineers.

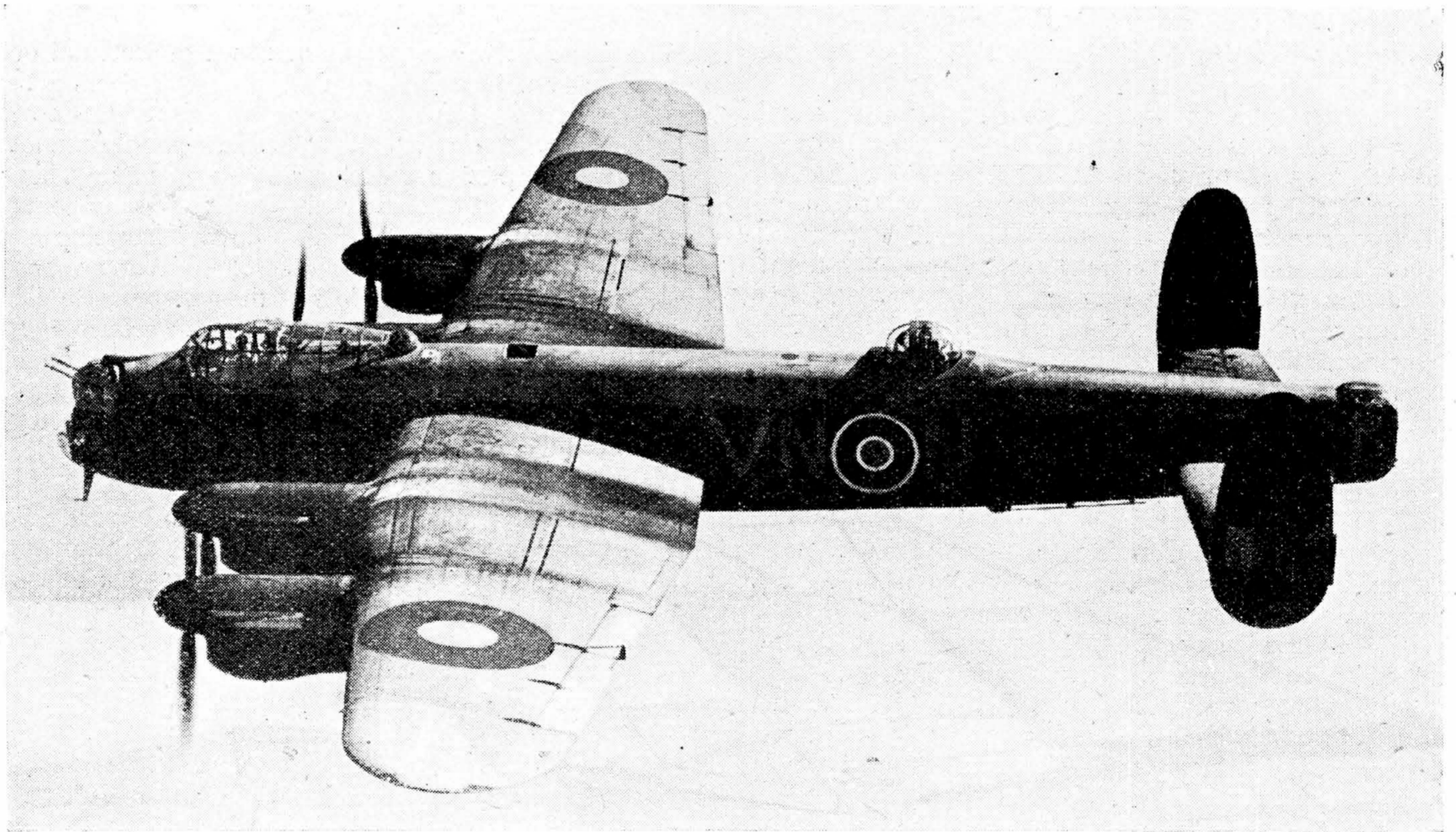
The Industry therefore looks for a lively Air Transport industry, stimulated by competition and enterprise to seek

the best, and capable of evoking the greatest possible effort from the constructors of aircraft. It does not expect to find the more vital forms of enterprise in a monopolist-operating concern and it maintains that there should be enough traffic on routes operated by British air lines to justify the existence of eight to 10 air operating companies. Those who took part in the Royal Aeronautical Society's discussion were also mostly against a teaching monopoly. Sir Lindsay Everard, M.P., and Mr. F. G. Miles recommended the establishment of a university of aeronautics and Sir Melville Jones suggested something like an aeronautical finishing school for post-graduate work.

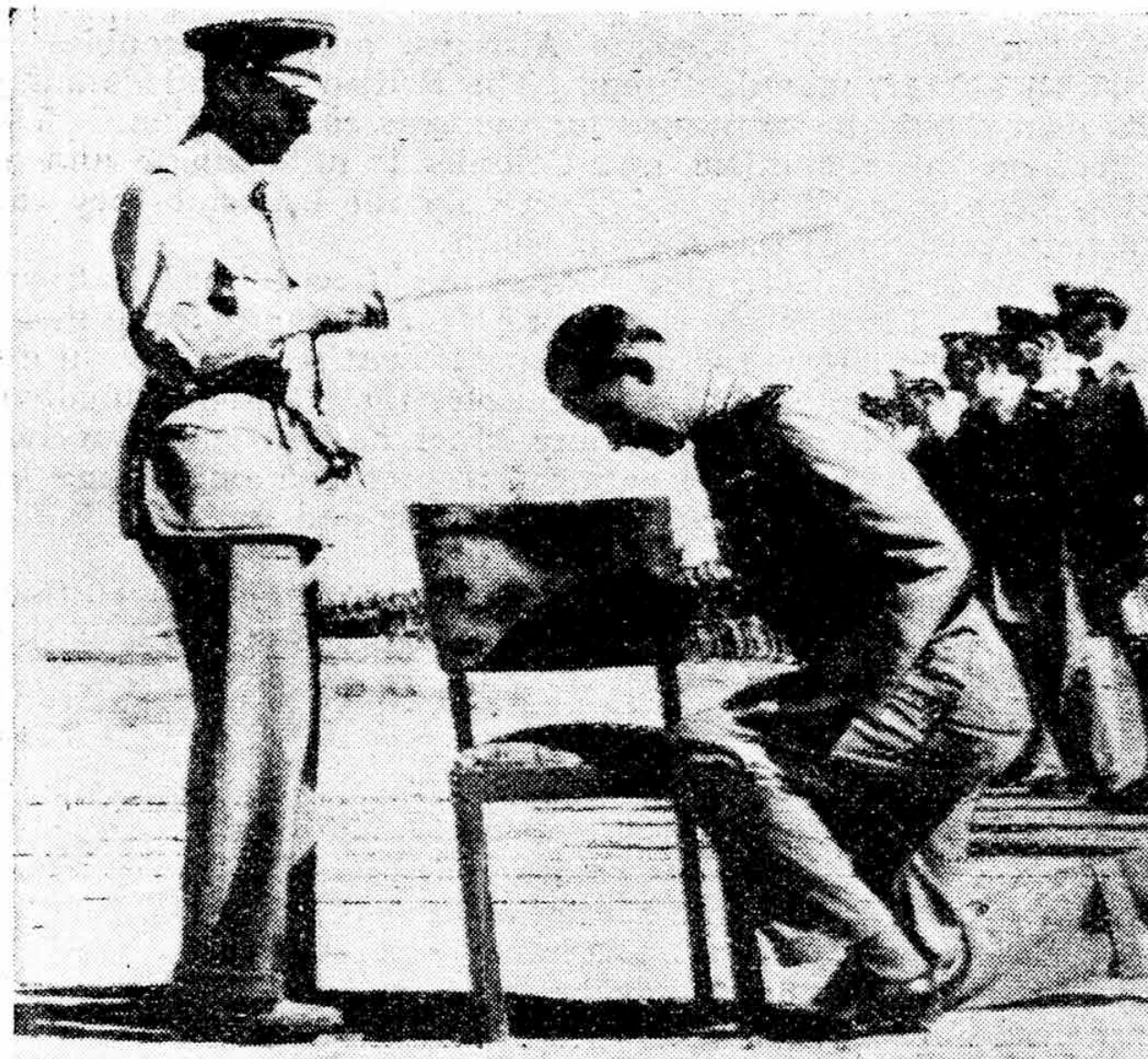
Most of the other speakers took the view that a wide training in the fundamentals of science and engineering should still be the basis of an aeronautical engineer's education and were in favour of expanding and multiplying those departments of existing universities which prepare young men for the Aircraft Industry and for the research work which nourishes it. Sir Roy Fedden laid the evidence of the United States' universities before the conference and spoke of the efforts previously made by the Royal Aeronautical Society to get some expansion of facilities in English Universities. Wing Commander T. R. Cave-Brown-Cave advocated the delay of specialisation in education as long as possible. Mr. W. E. Petter and Prof. W. J. Duncan propounded schemes for allying workshop experience with aeronautical education.

In this they had the support of Sir Frederick Handley Page, who held that the most difficult thing of all was to "educate the educated" in the practical aspects of engineering. He went much farther than most in his demand for specialisation. He declared that too little attention had been given to production. He thought that engineers who desired to go more deeply into the methods by which articles were made should have an opportunity to take post-graduate courses. There was need for research, too, in the administration and planning of engineering.

The discussion was not ended on June 25 and a final summary cannot fairly be given until all opinions have been heard, but the tendency was towards so large a



**BATTLEDORE OR SHUTTLECOCK.**—An Avro Lancaster I of the type used for the Trans-Europe bombing raid last week. A force of Lancasters bombed the radiolocation works at the old Zeppelin base at Friedrichshaven and, turning South, flew on to Africa. After refuelling and reloading, they bombed Spezia on their way home.



**KNIGHT IN THE DESERT.**—His Majesty the King gives the accolade of knighthood to Air Marshal John Linnell, Deputy Commander, Middle East Command, in the course of his recent visit to British forces in Africa. The ceremony took place on the edge of the runway at a desert aerodrome.

measure of ultimate specialisation that something like an institution for post-graduate study together with an increase in the faculties of aeronautics would seem likely to win most support. But the conference was fully aware that educational opportunities would be wasted if Industry could not offer good rewards to specialists. And the Industry is persuaded that the rewards it can offer will depend greatly on the health of British Air Transport.

### A Bristol Loss

**WE** regret to announce the death of Captain Alfred Charles Burgoine, a well-known experimental engineer of the Bristol Aeroplane Co., Ltd. Captain Burgoine started out in life in the best possible way for a budding engineer, as an apprentice indentured to his father's firm, Alfred Burgoine, Ltd., Marine Engineers, of Kingston-on-Thames. Some of the work he supervised was the construction of parts for early aeroplanes. In 1910 he became a consulting engineer. During the last War he served with the R.N.A.S. and R.F.C. His technical knowledge was later used in that War at the Air Ministry in supervising the manufacture of aero-motors.

After two years as a technical consultant to Lodge Plugs, Ltd., Rugby, he joined the Aero-engine Division of the Bristol Aeroplane Co. in 1925. Part of his work was to superintend the granting of manufacturing licences for Bristol motors in many countries. The rapid expansion of the firm led to his promotion in 1937 to special work on Bristol motors in a new works. As a result of enemy action in which he was involved during the Battle of Britain, Captain Burgoine had to retire for a time to improve his health. On returning to duty he once more took up experimental work in the Engine Division.

He was Local Chairman of the Institution of Automobile Engineers and Section President of the Institute of Production Engineers, holding office in each Society for two consecutive years; he was a member of the Society of American Automotive Engineers. He was also connected with the Merchant Venturers' Technical College.

Captain Burgoine was 63 years of age. By his death the Aircraft Industry in general and the Bristol Co. in particular have lost a loyal servant.

### Royal Aeronautical Society

**MR. ARTHUR GOUGE** was re-elected President of the Royal Aeronautical Society at a meeting of the Council on June 24, 1943, for the year Oct., 1943, to Sept., 1944.

At the same meeting Dr. H. Roxbee Cox and Mr. E. F. Relf were re-elected Vice-Presidents for the same period.

### A.T.A. Benevolent Fund

**THE FOLLOWING** is the latest list of contributions received by the Secretary of the A.T.A. Benevolent Fund at White Waltham, Maidenhead, Berks:—

	£	s.	d.
Subscriptions already acknowledged ...	7,393	15	11
Gloster Aircraft Ltd. ...	7	12	0
Officers Club, R.A.F. Kirkbride ...	5	5	0
Bennett Linz (Manchester) ...	3	3	0
	<hr/>		
	£7,409	15	11

### Education in the Aircraft Industry

**AN EXPANSION** of the educational activities of the de Havilland Aircraft Co. Ltd. has just been announced. An Education Board, comprising 12 members of the senior executive staff from the aircraft, motor and airscrew divisions has been formed to guide the technical training which this company has always fostered through the de Havilland Aeronautical Technical School, which was founded in 1928.

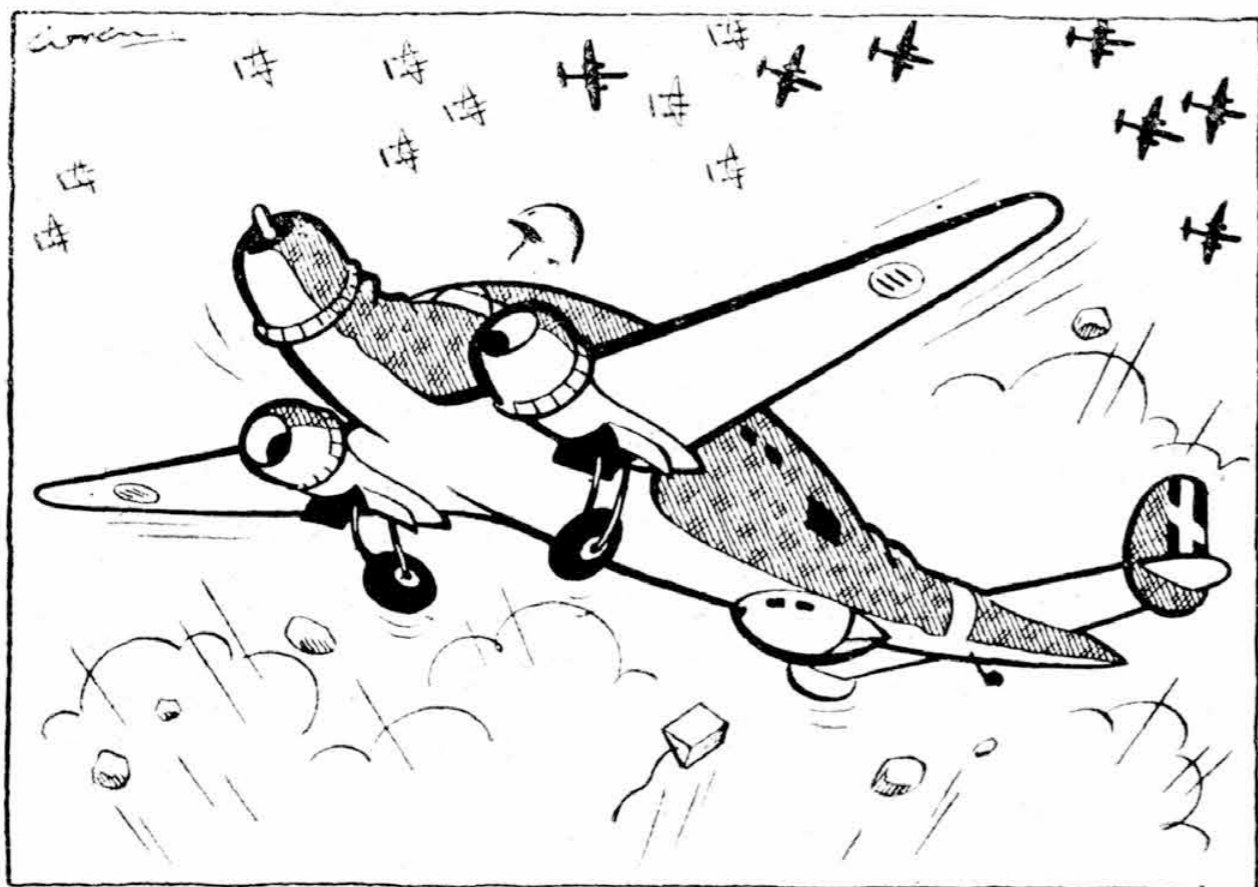
This new development centres around an apprenticeship scheme with scholarships and the provision of facilities for adult training. In addition, the scheme embraces a de Havilland Library, and other off-shoots, such as debating societies bearing on the acquisition of technical and general knowledge.

The need for this type of post-school or college training within the Aircraft Industry arose quite early in the development of British aeronautics. One of the earliest technical schools was instituted as long ago as 1917 in a famous aircraft establishment. The larger aircraft companies also realised early that the ordinary education received by the British student needed some amplification in the absence in educational establishments of specialist training, for the professions, business, or engineering. Private ventures within the Aircraft Industry to provide trained engineers of high standard is wholly laudable. The de Havilland expansion in this direction is all the more remarkable because of the difficulties imposed by the War.



**DE HAVILLAND EDUCATION BOARD.**—Members of the new Education Board of the de Havilland Company are shown here assembled under the Chairmanship of Mr. F. T. Hearle, the Managing Director of the de Havilland Aircraft Co. Ltd. Left to right, sitting: Messrs. C. C. Taylor (Chief Accountant), H. J. Nixon (Production Manager, Engine and Airscrew Division), W. J. Snell (Engineering Manager, Airscrew Division), W. E. Nixon (Director and Secretary of the Company and Vice-Chairman of the Board), J. M. F. Maslin (Personnel Manager, Second Aircraft Group), J. L. Brodie (Engineering Manager, Engine Division), A. J. Brant (Service Manager, Aircraft and Engine Division), M. Sharp (Public Relations Officer), T. C. L. Westbrooke (Production Controller, Aircraft Division). Standing: Sqdn. Ldr. R. W. Reeve (Principal of the de Havilland Aeronautical Technical School) and Mr. G. M. Saul-Brown (Education Officer). Mr. R. M. Clarkson (Assistant Chief Engineer, Aircraft Division), Mr. P. E. Gordon Marshall (Manager, Aircraft Repair Group) and Mr. R. E. Bishop (Chief Designer, Aircraft Division), who do not appear in the photograph, are also members of the new Board.

## ODDENTIFICATION—CXVII



(“Aeroplane” copyright)

See the startled dinosaur rear and turn and run  
From the brickbats down below; wasps from out the sun.  
Watch him toss his head on high, shy at every gun.  
Verily Savoia's lot is not a happy one.

## Six Points for British Air Transport

By W. Hudson Fysh, Managing Director of Qantas Empire Airways.

**I**N THE PRESENT critical period of British Air Transport, because whether we like it or not, War or no War, the present is critical, the more detached views of a visitor from Australia given from the Empire point of view may be of some value. I say Empire because to obtain the best results we must act in unison in regard to overseas Air Transport and each unit must think of the problem as more of a whole than has been done in the past.

With the urgency of the past few weeks no doubt many or all of the points which follow will have been acted upon, or may be receiving consideration. Even so, the question of Air Transport is now so large and so vital as to be an essentially public question and the expression of opinions should be of benefit.

The single and undivided first object of post-War Air Transport should be on the lines of co-operation between the British Empire and the U.S.A. If the British-speaking peoples cannot agree to co-operate as the natural sponsors of Allied co-operation, and World co-operation to follow, the alternative is a challenge to the civilised World.

The first requirement is British speaking co-operation. The second, a drawing together of the Empire by a common policy to provide the proper strength and cohesion or co-operation. Co-operation without domination is a difficult matter between a big partner and a small one but no one except the enemies of civilisation would agree that the British Empire should be broken up.

A policy and plan for British Air Transport is the third necessity and is doubly urgent because of the great “Air Age” campaign that is being conducted in the U.S.A.

Post-War Air Transport for the United Kingdom will probably fall into three categories—Empire, European and Internal. The design and production of suitable aircraft for those routes is the fourth requirement. For the past 20 years Great Britain neglected her Air Transport designs with the result that the U.S.A. practically captured the World's market. This was true in Australia and Canada. British military design was kept at a high level and the War gave the Aircraft Industry such an uplift that it has become the first in the land and an industry which has shown itself equal to the World's best. Australia would like to use British aircraft as well as American, but the British types must be as competitive as the military types.

The fifth point is propaganda and salesmanship. This must be divided into home, European and Overseas, but I am mainly concerned with Empire propaganda. While the U.S.A. pours out a flood of propaganda and advertising concerning its military aircraft, air transport and air operations, military, naval and transport, a veil of mysterious silence is drawn over similar British activities. This is not the case in Australia where the example of the U.S.A. has been followed in regard to air transport activities.

While the silence campaign is operating about the good things of British aircraft and air transport Australian papers have been full of the bad things, such as doubts about the future expressed by prominent persons; the resignations of the

directors of British Overseas Airways; and the troubles of British aircraft manufacturers. The British trait of damning its own should be restrained for overseas consumption. The effect on the Dominions and Colonies is unfortunate and as they hear no good but are given only the bad side they can have no faith in British Air Transport.

The sixth and last point is what might be termed National air moral. The Empire is building up a strong fighting moral but in some quarters the word appeasement seems to be in use still. The Empire, and particularly the United Kingdom, should not have to appease any other nation. Our survival and maintenance of international respect can only come by standing firm through any blitz methods and for what is fair to ourselves.

The six points are therefore:—British speaking co-operation; Empire Air Transport with a common objective; Formation of an Empire policy and plan; The design and building of suitable aircraft; Propaganda and publicity; and National Air Transport moral.

Australia depends on air transport for her future contacts with the U.S.A. and Europe and other countries. Australia is ready and willing to co-operate with the Mother country in the development of those routes which will form the life-line of the Empire, but Australia remembers the many pre-War disappointments and confidence must be rebuilt. Above all, Australia wants a strong and virile lead from the United Kingdom—something that will build confidence and enable Australia to face resolutely the Air Transport future with Great Britain.

Great Britain can do it. Will she?

## The Aircraft Industry on Air Transport

**A** MEMORANDUM on the future of British Air Transport has been drawn up and presented to the Prime Minister, the Secretary of State for Air, the Minister of Aircraft Production and the Minister of War Transport by the Society of British Aircraft Constructors. The Society represents the main body of the British Aircraft Industry, and the views expressed in the memorandum are fully endorsed by every member of its Council.

The document rests upon three premises: (1) That there will be a large post-War field for Air Transport operation; (2) That Great Britain and the Empire must take a leading part in that development, comparable with that Great Britain has taken in shipping and (3) That British-designed and British-built transport aeroplanes must be used on World air routes.

On the post-War international control of Air Transport the Society declares:

(a) That within a framework devised to prevent armed aggression there should be as much freedom of operation as possible.

(b) That the abolition of the single State-subsidised monopoly system and substitution of a system whereby commercial requirements come uppermost would enable Air Transport to be operated for commercial and economic needs and not for reasons of security, prestige, veiled military development and strategical requirements.

(c) That State aid to operators should be given in the form of payment for services rendered—say, for the carriage of mails—and not as direct payment by the State.

(d) That ground facilities, including navigational aids, meteorological information and provision for technical landings en route should be the liability of States flown over by international air line operators.

(e) That the right to operate international air lines might be restricted to those companies which submitted their operations to full audit and control, and to the regular and frequent publication of the results of such operations.

(f) That the intervention of Governments in technical matters should be limited by the establishment of bodies to supervise airworthiness requirements similar to the Air Registration Board set up in Great Britain.

The Society suggests: (i) the immediate establishment of a complete understanding with the Dominions, including decision as to the future home of Commonwealth research, with the object of ensuring maintenance of a technical standard at least equal to that of the United States and the Soviet Union;

(ii) an immediate Governmental decision on the future ministerial control of civil aviation (whether the Air Ministry, the Ministry of War Transport, or a new Ministry of Civil Aviation);

(iii) the abolition of the “single chosen instrument” policy to avoid the evils of monopoly and to ensure vigorous development of Commonwealth and World airways and the highest level of technical development of British transport aircraft;

(iv) the immediate large-scale production of British air

transports derived from conversion of existing British heavy bomber aircraft;

(v) the provision of prototypes of new commercial aircraft, as a short-term policy, by direct subvention for that purpose of reputable potential British operators of Empire and World air routes;

(vi) the provision with State aid of the larger and more costly apparatus of research needed to cope with the growing size and complexity of modern transport aeroplanes;

(vii) the encouragement at Universities and in the Industry of schemes designed to provide Great Britain and the Empire with an adequate and continuing supply of technicians, engineers, and skilled mechanics;

(viii) the immediate review of airport facilities in Great Britain and the Empire, with the object of providing the most efficient ground organisation for civil Air Transport; and, in particular, the immediate adoption of measures to provide Great Britain with at least one "super-airport" as soon as possible after the War;

(ix) decision on the licensing of internal air services, which should be conducted on lines similar to those governing road transport and directed to encourage the operation of efficient and economical services and to ensure safe and regular operation;

(x) provision for full interchange of operational data and experience, at home as well as abroad.

#### Pre-requisites of Progress

Amplifying its summarised declaration, the Society states that even more essential than consideration of the technical and commercial possibilities is a study of the international conditions in which post-War Air Transport operation will take place. World opinion, it maintains, will demand that the aeroplane, under the guise of civil aviation, shall not be again the instrument of aggression, and a main task of the United Nations in settling the peace conditions will be the determination of the degree of air control necessary to maintain peace in the post-War world.

Within the framework devised to prevent aggression, as much freedom as possible should be provided. Railways and shipping lines developed to their present wide extent in an atmosphere of liberty. Restraints became necessary when surface transport had reached virtual stabilisation and saturation point on many routes; but in the growing stages a new method of transport should not carry too heavy a burden of control. Indeed, an atmosphere entirely favourable to free technical and operational development could perhaps only be ensured if any transport company were permitted to run any air transport service it desired. Ultimately, the more efficient would prevail, both internationally and at home.

The pre-War assumption was that the air from the ground upwards, with no limitation of height, was under the sovereignty of the State below it. Rigid adherence to this rule would mean grave restriction of legitimate aircraft operation, and was in fact before the War partly waived by the adoption of "corridors" along which foreign air liners were permitted to fly.

Two closely interlinked British organisations were likely to be in sole possession of our Air Transport field—the R.A.F. Air Transport Command and British Overseas Airways Corporation at the end of the War. Unless strong and early action were taken, the aeroplanes operated by both concerns would probably be predominantly American. The Society submitted that the War had reached a stage where the air transporter was of vital importance and that the national war effort—as well as Britain's future in post-War transport—would be served if British-designed and built transport aeroplanes were put into early and large production.

Multiplication of Ministries was not, in principle, desirable, but the importance of Air Transport was such that the Government might be compelled to establish a separate Ministry of Civil Aviation, or to place civil aviation under the Ministry of Transport. The Society urged that much thought be given to the subject before control was removed from the Air Ministry, which was the only Government Department with some knowledge of the operational and technical complexities of air transport.

Monopoly is inconsistent with the advancement of British civil aviation; says the memorandum, which goes on to set out some of the steps taken by the Society from the early 1920s onwards to draw the Government's attention to the evils inherent in the "single chosen instrument" policy. The Society favoured, in principle, the throwing open of routes radiating from any country to the competition of all reputable transport operators. In default, it pressed for a system whereby each of the main routes operating from Great Britain would be entrusted to at least one operating company.

The Society believed that the traffic which would eventually be airborne from and into Great Britain, in the British

Commonwealth and across the oceans would be so great that there might well be scope for the operation of at least eight or 10 main British companies. Already the shipping companies, with their great experience of overseas transport, were taking powers to operate such lines.

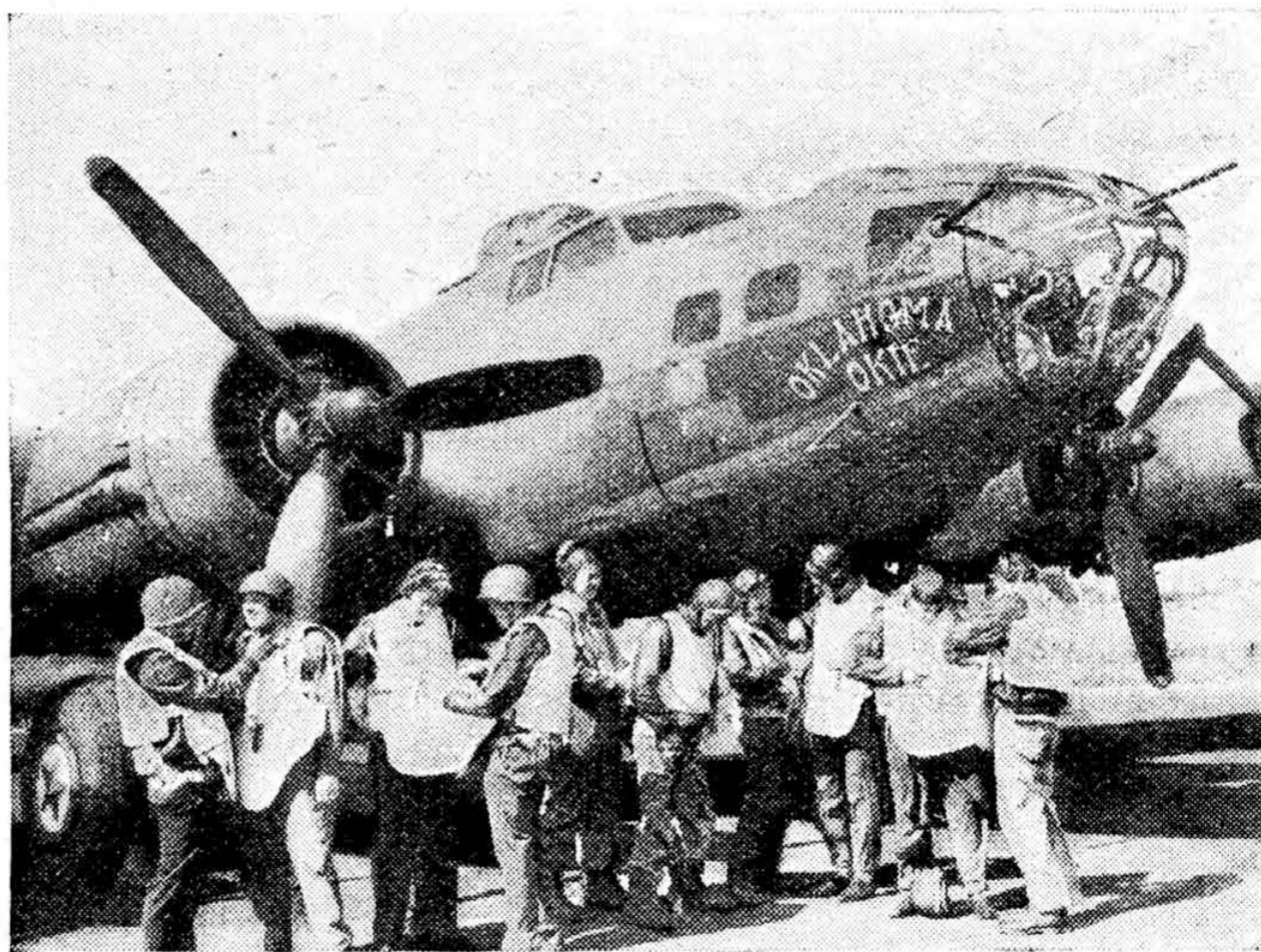
The best commercial aircraft, as in other fields of transport activity, were designed and built by constructors to meet the actual needs of operators over various routes, and previous experience had shown that civil aircraft designed and built to meet an official specification had been generally unsuited to commercial operation and, in fact, had not been sold in quantity to operating companies.

The Society foresaw three main stages in development of British transport aircraft:—the immediate post-War period, marked by use of aircraft derived from Service counterparts, but embodying present-day experience and practice; a period, which, if immediate action be taken, could begin in four to five years from now, with the coming into service of aeroplanes projected, it was hoped, with some regard to the needs of actual air line operators; and a period, beginning perhaps 10 years from now, using aircraft embodying jet propulsion, full boundary layer control, flying-wing design, and so forth.

There was pressing need for more of the large-scale apparatus of research demanded by the present and future advance of aerodynamics and aeronautical engineering—new laboratories, wind tunnels, engine test beds, really large high-speed tanks and similar devices. The United States was already building large 700 m.p.h. wind tunnels and test beds able to accommodate power plants of up to 8,000 h.p. Boundary layer control and jet propulsion brought in new problems. Such things as radio, de-icing and pressure cabins needed research on something more than the limited individual scale or governmental slowness. In the United States engineers directed and controlled aeronautical research, with resultant benefit to operators of aircraft.

In various ways the British Aircraft Industry sought to maintain its supply of trained technicians and engineers and to encourage a flow of promising young men into the shops, research laboratories and design offices. The Society annually awarded a number of scholarships to boys whose parents could not otherwise afford to maintain them during a period of comprehensive training in aeronautical engineering. In addition, the larger firms in the industry had their own individual apprenticeship schemes. There were chairs of aeronautical engineering at Cambridge University and at the University College of Hull. The Government should encourage the extension and improvement of facilities for such training.

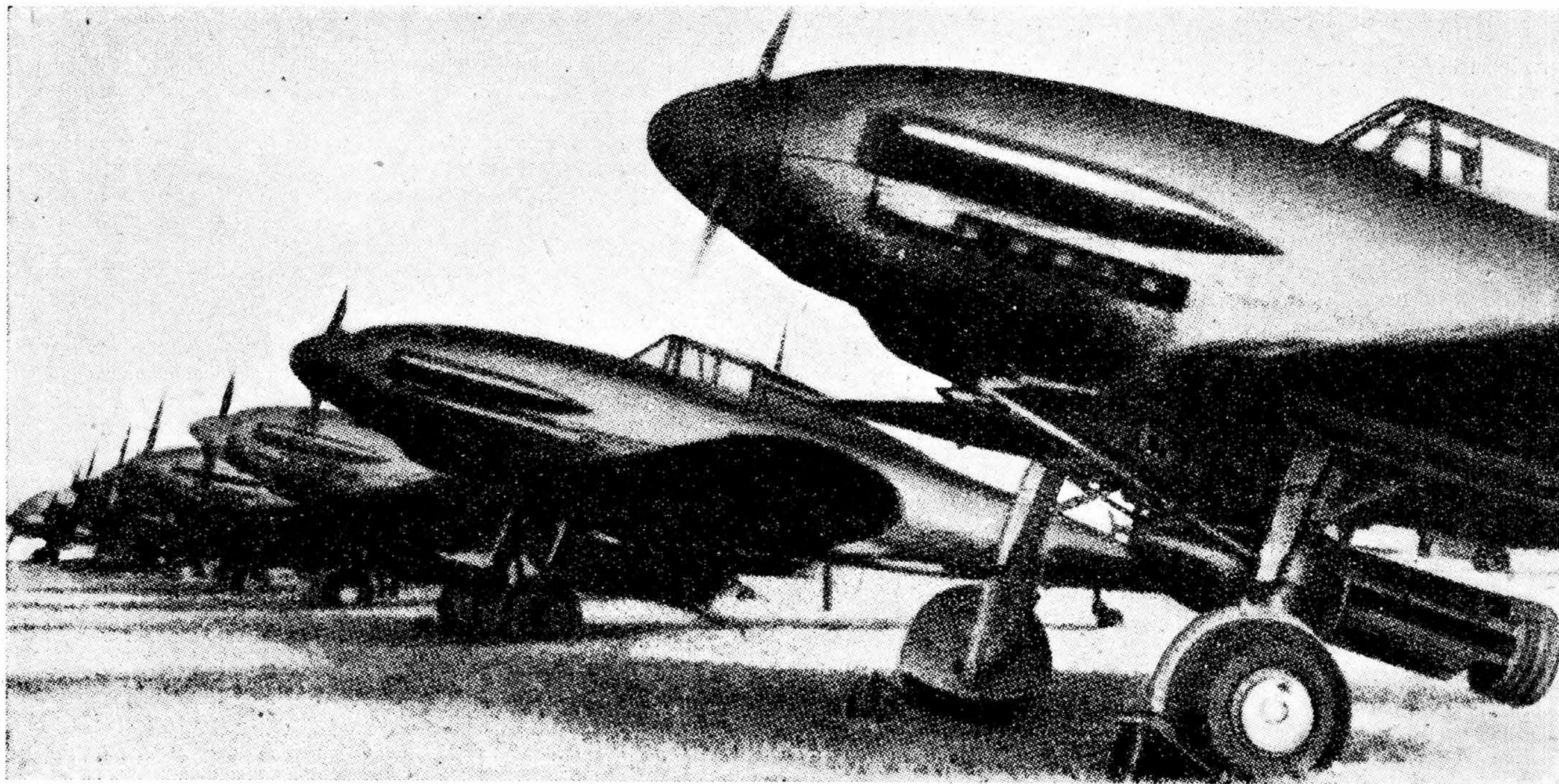
In the political field there was urgent need to establish a complete understanding with the Dominions, and the Society trusted that the consultations promised by Government with the Dominions would make rapid and energetic progress. The Society also remarked on past neglect of the Aircraft Industry's advice and the adverse results in Air Transport, and urged the importance of consultation by the Government with the Aircraft Industry on these matters.



**ARMADILLOS.**—The crew of a Flying Fortress of the U.S. Army Eighth Air Force don their "Flak Jackets" before setting off on a raid. These jackets are made of many small squares of manganese steel, sewn into layers of fabric, and are in two parts. They give body protection both fore and aft and can be slipped off in a moment by a quick release device. The full suit of armour weighs 16 lb. Colonel Malcolm C. Grow, Surgeon of the Eighth Air Force, was responsible for the development of the idea.

The 199th Week of

# THE WAR IN THE AIR



**FIGHTERS AS DIVE BOMBERS.**—This interesting enemy photograph shows that Caproni Reggiane Re 2001 fighters are being modified to carry bombs beneath the fuselage. The bomb rack, apparently like that of the Junkers Ju 87 is designed to swing the bomb clear of the airscrew, suggesting that these fighters are to be used as dive bombers as well as fighter-bombers. Apparently, the Axis still pins its faith to these obsolete weapons.

**N**EARLY all the war news from every theatre of operations last week was provided by Air Forces—principally Allied Air Forces. Nowhere was there any land fighting of major importance. Even on the Eastern Front, where two mighty armies stood facing one another on ground now fit for large-scale battles, the greatest efforts on both sides were made in the air.

The heaviest blows were struck at the Axis from bases in Great Britain and Africa. In a series of raids unrivalled for their weight and rapid sequence, Bomber Command continued its devastation of the Ruhr, erasing town after town and setting up a form of creeping paralysis in that great industrial area. The enemy exerted himself strenuously, but his massed guns, searchlights and night fighters could do nothing to halt the systematic destruction of the centres which provide him with the sinews of war. There were losses among the night raiders—the total for the week was 143—but this figure marked no rise in the percentage of losses among the raiders. When 700-odd bombers went to Krefeld, 656-odd came back.

Bomber Command also proved that it can still spring a surprise on the enemy by bombing a distant target on the shortest of Summer nights. Instead of returning the same night over the same route, a force of Lancasters was sent on

from Friedrichshaven, where its target lay, to North Africa. On the return journey, the Lancasters left their mark on Spezia, the Italian naval base, and reaped the reward of their audacity. Not one was lost in either raid.

As enemy announcements reported the steadily growing size and number of Allied convoys in the Mediterranean, so the rate and weight of Allied bombs on key targets in Italy and its southern islands increased. Wellingtons by night and Fortresses by day pounded Messina and Naples, while lighter bombers maintained the offensive against enemy aerodromes. A paralysis like that in the Ruhr is beginning to make itself felt in Italy.

Greater strength, too, has been given to the Allied Air Forces in the Pacific. There, targets are more distant, more widespread. Communications between the bases from which the bombers fly and the factories at home are long, but the events of last week must have made clear to the Japanese that they have virtually lost their freedom of operation in the air, and that, in consequence, they will soon lose their freedom to operate on the seas.

Thus, in every theatre, Allied Air Forces are swiftly preparing the common enemy for his final and absolute defeat, while the armies stand by, trained and equipped, ready to strike the blows that will bring about his overthrow.

## Paralysing the Ruhr

**G**RASPING the opportunity provided by better weather, Bomber Command in its night operations last week dealt the Axis six of the heaviest blows it has ever delivered. By day, its Venturas and Bostons, U.S. Army Eighth Air Force Flying Fortresses and Typhoon fighter-bombers of Fighter Command added to the havoc and destruction of the night raids. Spitfire and Typhoon fighters of Fighter Command in sweeps and covering operations, supported the bombers.

Intruders prowled the night skies over enemy territory, shooting up aerodromes and shooting down enemy raiders and night fighters. The week was indeed a memorable one both for the Allies and for the Axis.

In the night attacks, the targets bombed (in the order of their disappearance) were: the Luftschiffbau Zeppelin G.m.b.H. radiolocation factory at Friedrichshaven (June 20-21); Krefeld (June 21-22); Mulheim (June 22-23); Spezia

(June 23-24); Elberfeld (June 24-25); and objectives in the Bochum-Gelsenkirchen district (June 25-26). Flying Fortresses made four raids but only those on the synthetic rubber factory at Huls, near Recklinghausen, and the General Motors works at Antwerp, on June 22, met with full success. Fortresses attacking targets in North-West Germany on June 25 and objectives in occupied territory on June 26 were hampered by clouds.

Friedrichshaven was bombed by a force of Lancasters which flew, after the attack, another 750 miles or so to a base in North Africa and then bombed Spezia three nights later on their way back to their bases in Britain. After the raid on the radiolocation factory, three Lancasters were at first reported missing, but were subsequently found. There were no losses in the attack on the Italian naval base at Spezia.

Two of the principal Ruhr targets, Krefeld and Mulheim, had not previously felt the weight of a heavy attack, nor had Elberfeld, the remaining half of Wuppertal. Barmen, the eastern half, had been literally wiped out in the raid of May 29.

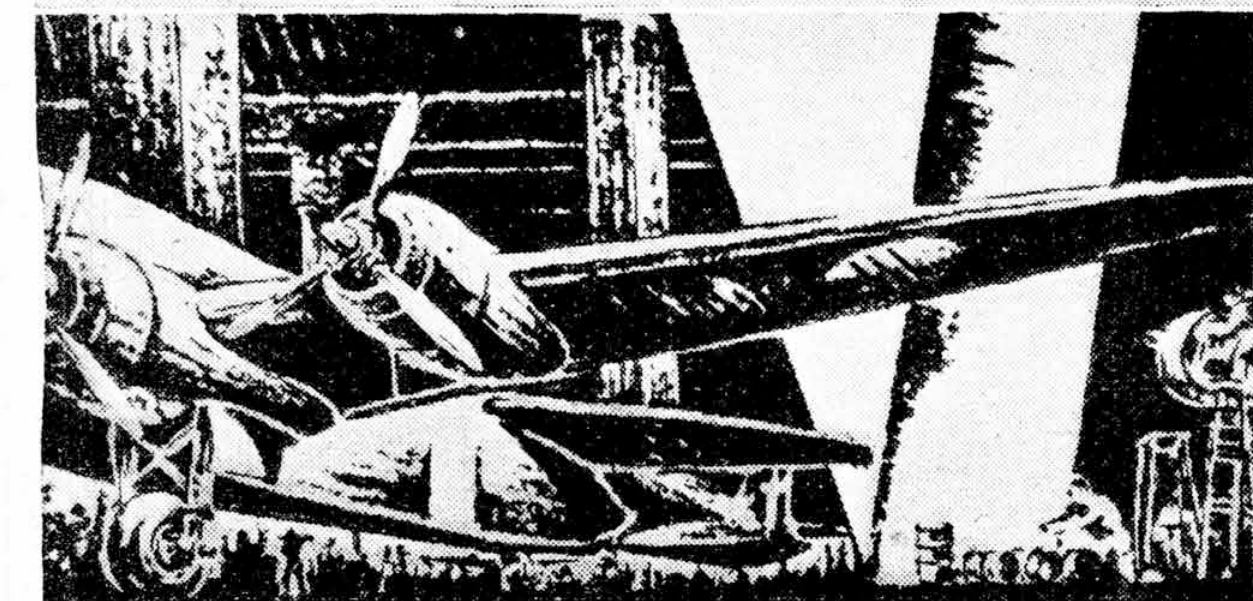
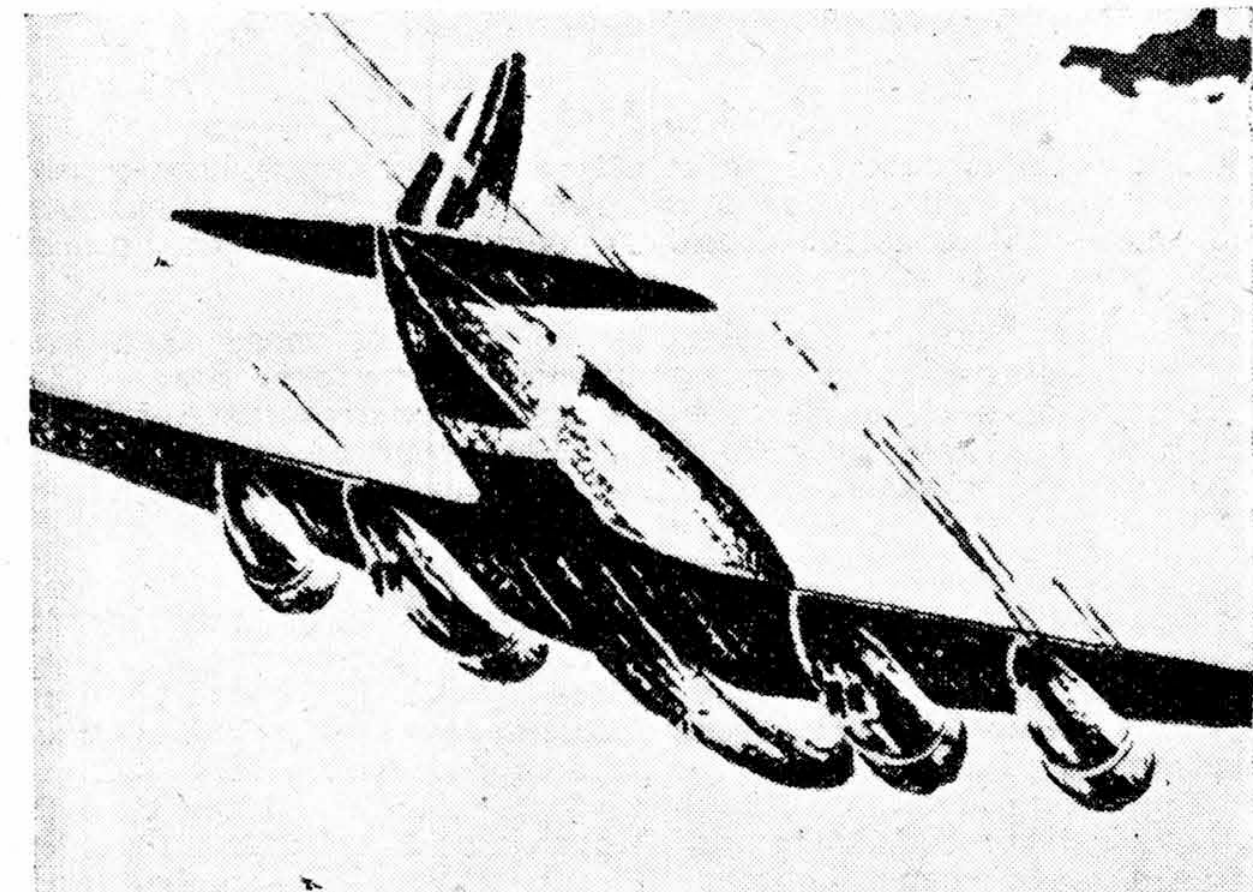
Of the six targets, Krefeld appeared to be the most heavily bombed. For this raid, Bomber Command sent out more than 700 Wellingtons, Halifaxes, Lancasters and Stirlings. They bombed for 50 minutes, and sent down (among others) five 4,000-lb. bombs every minute. One pilot, who had been in 20 other big raids, said that the whole target appeared to be one solid mass of fire, glowing and giving off dense clouds of thick smoke which rose thousands of feet into the sky.

Much damage was done, too, at the other places bombed. Three acres of the Friedrichshaven factory, including parts of the old Zeppelin hangar, were laid in ruins; great fires were left at Mulheim and Elberfeld, and preliminary reports indicated that the docks at Spezia were accurately bombed and stores of oil set on fire.

In defence of the Ruhr, the Germans massed a great quantity of guns, searchlights and night fighters, but their best efforts did nothing to raise the percentage of losses among the raiders. Of the 700-odd which went to Krefeld only 44 were lost—a little more than five per cent. The average loss for the six night raids was 23.6 bombers per raid.



**DESTROYING AXIS AIR POWER.**—Three of a formation of 25 Martin Marauder bombers of the U.S.A.A.F. belonging to the North-West African Air Forces crossing Alghero aerodrome during the heavy attack made on this Sicilian air base on May 24. Enemy aircraft can be seen at dispersal points. All other Sicilian and Sardinian aerodromes have been similarly treated.



**FOUR-MOTOR SAVOIA?**—Part of a Savoia Marchetti advertisement published recently in an Italian newspaper depicting a four-motor low-wing monoplane of unknown type. The motors are air-cooled radials, probably of Piaggio design or construction, driving three-blade variable-pitch airscrews. Undercarriage legs, similar to other Savoia designs, retract backwards into the inner motor nacelles and the tailwheel appears to be semi-retractable. High aspect ratio wings are tapered on leading and trailing edges with small rounded tips and tail surfaces are elliptical. Previous Savoia Marchetti fuselage design practice, notably in the S.M.82, seems to have influenced the fuselage of the aeroplane in the advertisement. It appears to have a nose similar in shape to the two-motor S.M.79B.

A rather higher percentage of losses seemed to be suffered by the Flying Fortresses in their two big daylight attacks. Twenty were lost on June 22 and 17 on June 25. The Germans made great capital out of the American losses in the raids on N.W. Germany, hinting at the use of new methods of defence, and predicting "the end of daylight raiding." Almost simultaneously came news from a "usually trustworthy authority" that the U.S.A.A.F. and the R.A.F. had decided to increase by the end of July the tonnage of bombs being dropped on Germany by 45 per cent.

A summarised record of the offensive operations of the Fighter, Coastal and Bomber Commands of the Royal Air Force and of the U.S.A.A.F. during the week appears on page 8. It includes a reference to the brilliant exploit of a Beaufighter Wing of Coastal Command which, in an attack on an enemy convoy off the Dutch coast, sank five escort vessels and probably sank a supply ship.

**The Mediterranean Air Offensive**

Good weather also allowed the Allied Air Forces in the Mediterranean Zone to develop their offensive against Italian targets. Wellingtons of the North-West African Air Forces made six consecutive night raids, attacking Messina (June 19-20), Naples (June 20-21), Salerno (June 21-22), Olbia (June 22-23), Catania (June 23-24), Olbia (June 24-25). Naples and Messina were also bombed by Flying Fortresses on June 21 and June 25 respectively. R.A.F. bombers of the Middle East Command bombed Messina on June 25-26.

Marauder and Mitchell bombers and Warhawk fighter-bombers of the North-West African Air Forces continued their raids on enemy aerodromes. Among those attacked were Castelvetro, Borizzo, Milo, Venafiorita and Capoterra. Chilivani and the Golfo di Aranci were also raided. Aeroplanes of the Coastal Air Forces sank an enemy tanker and a merchant ship and set fire to another merchant ship.

Strong opposition from anti-aircraft guns and from fighters greeted the Fortresses (which numbered about 100) over Messina, but the attack was pressed home and 20 enemy fighters were shot down. All the Fortresses returned safely. The subsequent Italian communiqué reporting the raid admitted heavy damage.

Reggio di Calabria and San Giovanni were raided by both the R.A.F. Middle East Command and the U.S. Army Ninth Air Force. Another target for the R.A.F. was Comiso aerodrome (Sicily), and for the Americans the aerodrome at Sedes (Salonika). The attack on Sedes took the enemy by surprise.

and there was little opposition. Hits were made on three hangars, which were left burning, and on administrative buildings, the aerodrome and dispersal area.

Long-range fighters of the Middle East Command attacked two schooners and two sailing vessels anchored in the harbour at Kyllene, off the West Coast of Greece, and set one on fire. Light bombers of the same Command sank a small sailing vessel off the coast of Scarpanto Island, in the Ægean Sea.

Intruders from Malta were out over Sicily and Southern Italy on most nights of the week, attacking factories and railway communications. Malta's fighters shot down three Axis fighters.

#### The Air War in the Pacific

Allied bombers spread their attacks over a wide area of the South-West Pacific last week. In the Solomons area there were raids by Liberators, Avengers, Dauntlesses, Wildcats and Warhawks on Kahili, Vila, Buka and Munda Bay, and by American Liberators from the Solomons on Tarawa in the Gilbert Islands. In the same area, the Japanese made an unsuccessful attack on an American light surface vessel near Savo Island on the night of June 20-21, and two nights later some enemy floatplanes made an abortive attack on two United States patrol craft near the Russell Islands.

In the New Guinea area, there was both land and air fighting. Twice the Japanese tried to force the Australians off the Lababia ridge, in the Mubo district, but twice they failed. The land drive was preceded by an air attack, in which 36 S-00 fighters were defeated by a formation of Lightnings half their strength. Fourteen were seen to crash or explode and nine others to be losing height or in flames. The destruction of 23 was described as probable.

Later, the aerodrome at Lae, from which the enemy doubtless operated, was given its heaviest raid of the War. Twenty tons of bombs were dropped on it before dawn on June 26, and the fires left burning completely obscured the target. Bostons and Beaufighters also bombed and strafed enemy positions and occupied villages in the neighbourhood of Lae and Madang. Beaufighters shot up the aerodrome on Selaru Island. A Beaufort dropped bombs close to an enemy cargo vessel off New Ireland, in the Bismarck Sea.

Rabaul, too, had another heavy raid. Macassar, the enemy's principal base on Celebes, was bombed by Liberators which made a round trip of 2,000 miles to drop 38 tons of bombs, including a number of 2,000-pounders. Direct hits were claimed on a Japanese cruiser and on a merchantman in harbour.

A strong force of Spitfires engaged Japanese raiders over Darwin on June 20. Six enemy bombers and three fighters were seen to crash, two bombers and one fighter fell in flames and eight bombers and two fighters were losing height with smoke pouring from them as they made off. Two Spitfires were lost. The damage done by the raiders was said to be "minor."

Kiska, in the Aleutians, was raided seven times during the week. The island is doubtless being blockaded by sea and air forces, preparatory to invasion.

Heavy cloud and storms hampered air operations in Burma, and the R.A.F. was limited to making regular reconnaissance patrols and to infrequent bombing and machine-gun attacks on Japanese positions in the Kalemio area and supply sampans South of Akyab. On land, the general situation in the Chin Hills remained quiet, but routine patrolling continued. There were a number of clashes between patrols,

in the course of which the enemy suffered the heavier casualties.

#### Back Area Bombing by Soviets

Air actions continued to supply most of the news from the Eastern Front last week. Russian long-range bombers kept up their night attacks on enemy air bases and railway objectives, concentrating in particular on those behind the Orel sector. Among the targets specifically named were the railway junctions of Pskov, Briansk, Orsha and Karachev, where good results were observed. Pskov is at the Southern end of Lake Ilmen on the main Leningrad-Warsaw line. In these attacks, the Red Air Fleet suffered only light losses—on an average, two bombers on each raid.

Raids by the Luftwaffe were directed chiefly at the Volkhov generating station which supplies much of the power for the factories of Leningrad, now in full swing again. These cost them more than 30 bombers.

On land, the Red Army captured an inhabited place in the Kalinin sector after artillery preparation. The Germans counter-attacked but after suffering heavy losses were forced to give up their attempts to recapture the place.

Moscow's review of the war in the air during the week claimed the destruction of 211 Axis aeroplanes and disclosed the loss of 74 Russian aeroplanes. Russian bombers also sank a German submarine.

## Diary of the Week

### Offensive Operations of the Fighter, Coastal and Bomber Commands of the Royal Air Force and of the U.S. Army Eighth Air Force. From June 20 to 26, 1943

#### Sunday, June 20

DAY .. Spitfire-escorted Bostons bombed Poix aerodrome. One Fw 190 destroyed. Typhoons and Spitfires attacked and damaged enemy ship off the Dutch coast. Four fighters lost.

NIGHT .. Main target: Zeppelin radio factory at Friedrichshaven. Bv 138 shot down by Mosquitoes over Bay of Biscay.

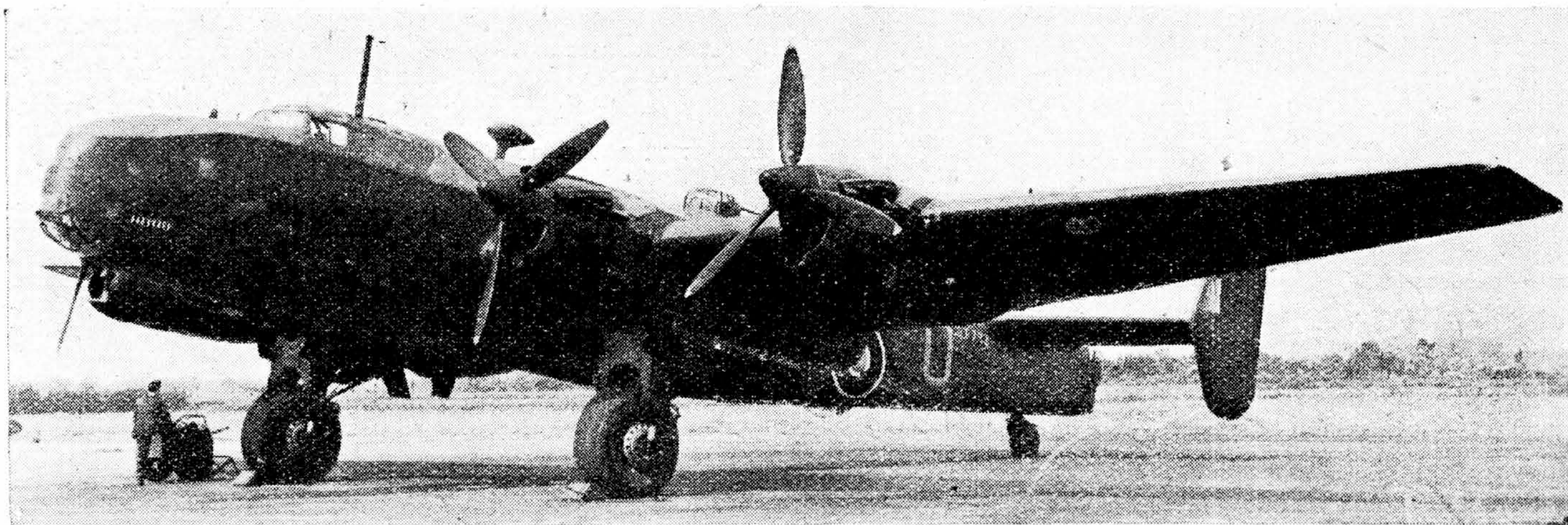
#### Monday, June 21

DAY .. Spitfires damaged an escort vessel and two mine-sweepers during attack on enemy shipping off Texel. Typhoons on offensive patrol attacked railway engines in Northern France. Two fighters lost.

NIGHT .. Main target: Krefeld (by a force of more than 700 bombers). Fighters on intruder patrols over France and Belgium attacked enemy targets and the enemy aerodrome at Poix. One Ju 88 destroyed over its base. Forty-four bombers and one fighter lost. One enemy raider destroyed over Great Britain.

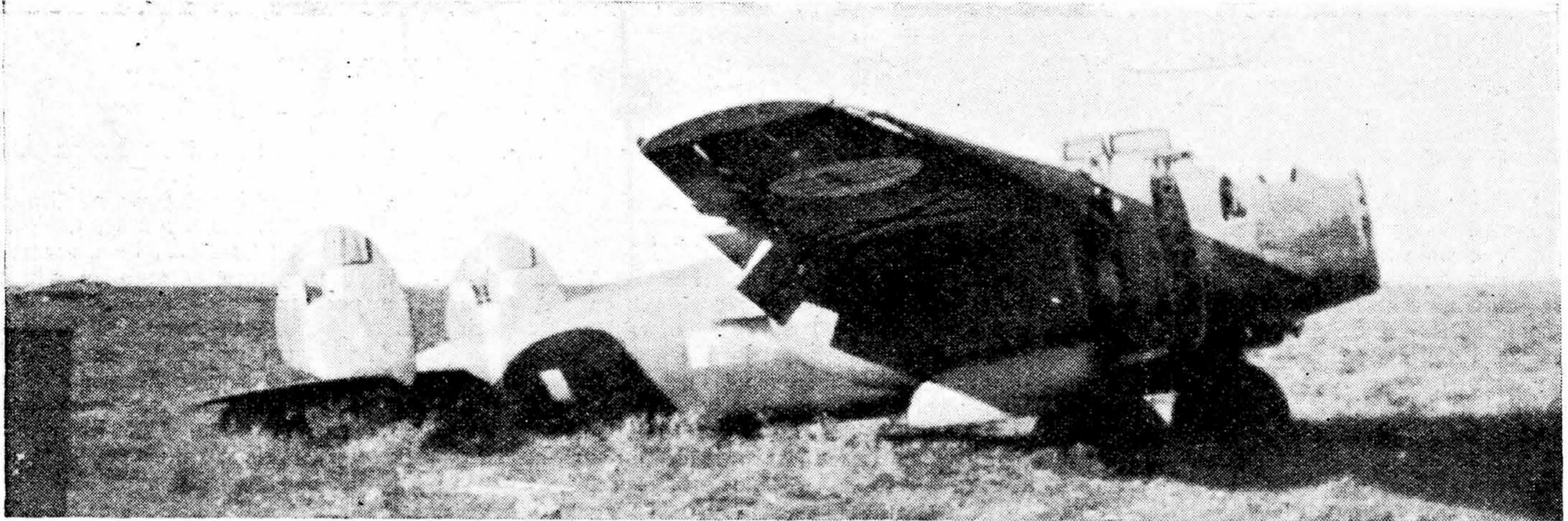
#### Tuesday, June 22

DAY .. Strong Force of Flying Fortresses of U.S. Army Eighth Air Force attacked the synthetic rubber factory at Huls, near Recklinghausen. Another force attacked General Motors factory at Antwerp. Bomber crews destroyed many enemy fighters. Squadrons of U.S.A.A.F., R.A.F., Dominion and Allied fighters flew supporting and escorting operations. R.A.F. Mitchells with fighter escort bombed docks and shipyards at Rotterdam. Fighters destroyed seven enemy fighters. Twenty U.S.A.A.F. bombers and four R.A.F. fighters lost. Five enemy escort vessels sunk and supply ship probably sunk as a result of attack on heavily escorted



A HYBRID.—This veteran of eight raids is a Handley Page Halifax II, Series I, fitted with the Boulton-Paul four machine-gun dorsal turret usually associated with the Series IA. Time may reveal still further experiments in the type and distribution of Halifax armament.

[“Aeroplane” photograph]



**FECKLESS FELINE.**—Italy placed great hopes in the Breda 88 Lince (Lynx) fighter bomber which began life well by setting up two World speed records, but structural troubles have since prevented its large use on active service and it has rarely appeared over the battlefield. The Breda 88, here shown damaged on Benina aerodrome, was captured by the Eighth Army during the North African campaign.

convoy off Dutch coast by Coastal Command Beaufighters accompanied by Spitfires and Typhoons. Spitfire-escorted Venturas bombed the aerodrome at Abbeville. Two Beaufighters and one Ventura lost.

**NIGHT** .. Main target: Mulheim. Four enemy night fighters destroyed by bomber crews. Aeroplanes of Fighter Command destroyed an Me 110 and an Me 210 during intruder patrols over Holland. Thirty-five bombers and one fighter lost.

**Wednesday, June 23**

**DAY** .. Spitfire-escorted Bostons attacked targets at Méaulte. Two Fw 190s destroyed. Typhoon bombers with escort of Typhoons attacked targets at St. Omer. Later, other Typhoon bombers, with Typhoon escort, attacked aerodrome at Maupertus. **NIGHT** .. Main target: Spezia (by Lancasters returning from North Africa, where they went after bombing Friedrichshaven).

**Thursday, June 24**

**DAY** .. Venturas bombed industrial targets at Flushing. Other Venturas attacked enemy aerodrome at Maupertus. Bostons attacked railway yards at St. Omer. Typhoon bombers attacked enemy aerodromes at St. Omer and Abbeville. Mitchells bombed aerodrome at Brest and Typhoons the aerodrome at Morlaix. Venturas bombed power station at Yainville, near Rouen. Many squadrons of fighters escorted and supported the bombers and between them destroyed 10 enemy fighters (including one Fw 190 by P-47s of U.S.A.A.F.). One bomber and four fighters lost. **NIGHT** .. Main target: Elberfeld. Other bombers attacked targets in the Ruhr and laid mines in enemy waters. Thirty-three bombers lost.

**Friday, June 25**

**DAY** .. Typhoon bombers, escorted and covered by Typhoon and Spitfire fighters, attacked aerodrome at Caen. Heavy

bombers of the U.S.A.A.F. attacked targets in North-West Germany. Many enemy fighters shot down by bomber crews. Seventeen bombers lost.

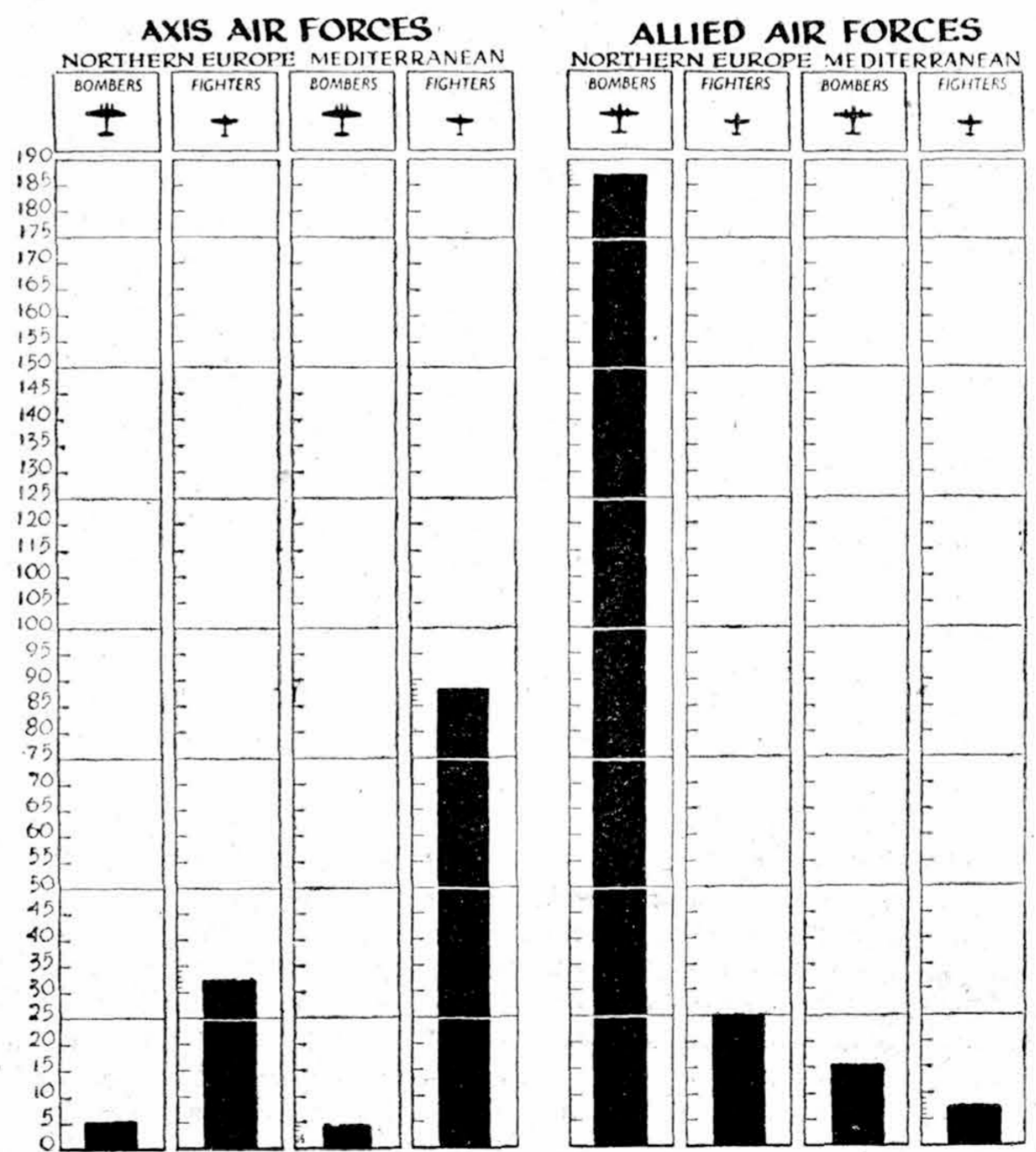
**NIGHT** .. Main targets: Objectives in the Bochum-Gelsenkirchen district. Two enemy night fighters destroyed by bomber crews. Thirty bombers lost. One enemy night fighter destroyed by intruders during attacks on aerodrome and other targets in the Low Countries.

**Saturday, June 26**

**DAY** .. Heavy bombers of the U.S.A.A.F., escorted by U.S.A.A.F. Thunderbolt fighters, attacked targets in occupied territory. Thunderbolts destroyed three enemy fighters. Typhoon bombers attacked Bernay aerodrome. Other Typhoons raided sidings and a station at Eu, near Le Tréport. Bostons attacked an aerodrome at Abbeville. Five bombers of the U.S.A.A.F. and seven fighters lost.

**NIGHT** .. Mines were laid in enemy waters. Targets in West and North-West Germany attacked. One bomber lost. Intruders shot down He 111 and Ju 88 over an aerodrome South of Paris.

**THE WEEK'S LOSSES.—June 20 to 26, 1943.**



**THE WEEK'S LOSSES AT A GLANCE.**—Comparative losses in the Air War for the week June 20 to 26, 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) 5 bombers (defence by day) 23 fighters; (defence by night) 9 fighters; Allied (daylight offensive) 44 bombers and 23 fighters; (night offensive) 143 bombers and 2 fighters. The figures for the Mediterranean theatre are: Axis, 4 bombers and 88 fighters; Allied, 15 bombers and 7 fighters. Approximate personnel losses are: Northern Europe; Axis, 53; Allied, 1,451; Mediterranean theatre: Axis, 104; Allied, 109.

**UNITED STATES ARMY EIGHTH AIR FORCE**

In operations during the week, the U.S. Army Eighth Air Force lost 42 bombers and an undisclosed number of fighters, and shot down "nearly 100 enemy fighters" in two of their three operations. Reported losses now stand at 272 heavy bombers, 10 medium bombers and 24 fighters, and reported successes in air combat at approximately 1,055 enemy fighters shot down.

**AXIS AND ALLIED LOSSES—JUNE 20-26, 1943**

Date	Axis (N. Europe)		Axis (Medit.)		Allied (N. Europe)		Allied (Medit.)	
	Aircraft	Personnel	Aircraft	Personnel	Aircraft	Personnel	Aircraft	Personnel
20-6-43	2	7	18	18	4	4	5	23
21-6-43	2	8	28†	28	47	308	2	8
22-6-43	13	13*	—	—	63	458	1	6
23-6-43	2	2	2	6	—	—	2	12
24-6-43	10	8*	21	23	38	238	9	45
25-6-43	3	3	20	20	47	380	3	15
26-6-43	5	12	3	9	13	63*	—	—
<b>Totals</b>	<b>37</b>	<b>53</b>	<b>92</b>	<b>104</b>	<b>212</b>	<b>1,451</b>	<b>22</b>	<b>109</b>

\* Excludes crews and pilots saved or probably saved.  
† Includes five shot down on June 18.

**TOTAL LOSSES IN THE AIR WAR\* (To dawn, June 27.)**

	Axis Air Forces	Allied Air Forces
Aircraft destroyed in combat or by A.A. gunfire .. .	14,334	9,835
Personnel .. .	34,419	34,991

\* Excluding Russia and the Far East.

# NEWS OF THE WEEK

**H. M. THE KING** landed at an R.A.F. station on June 25 after an all-night flight, concluding his 5,800 miles tour of North Africa and Malta. He was met by Air Chief Marshal Sir Charles Portal (Chief of the Air Staff), Air Marshal Sir Trafford Leigh-Mallory (C.-in-C. Fighter Command), and Air Chief Marshal Sir Frederick Bowhill (C.-in-C. Air Transport Command). His four-motor Service aeroplane was escorted by four U.S. Bell Airacobras over the African coast on the homeward journey and by R.A.F. Spitfires when it arrived over England. It had a crew of eight.

The two pilots were Wing Commanders H. B. Collins, D.F.C., and C. E. Slee. The King arrived in North Africa on June 12 and during his tour visited R.A.F. and U.S.A.A.F. stations and squadrons. Later he visited Malta. In North Africa he gave the accolade of knighthood to Air Marshal F. J. Linnell, Deputy A.O.C.-in-C., R.A.F. Middle East, and in Malta to Air Vice-Marshal K. R. Park.

**New tactics** were adopted by Bomber Command of the R.A.F. when a force of Avro Lancasters attacked Friedrichshaven on the night of June 20, flew on to North Africa and bombed the Italian naval base at Spezia on the return journey to Great Britain. No Lancasters were lost on the double journey.

**More than 700** heavy R.A.F. bombers dropped one of the heaviest loads of bombs so far released on a German target during a 50-minute attack on the industrial town of Krefeld in the Ruhr on the night of June 21. A total of 44 bombers was lost.

**U.S. bombers** of the Eighth Air Force made their first attack on the Ruhr on June 22 when Boeing Fortresses attacked the synthetic rubber factory at Huls, near Recklinghausen.

**Sir Archibald Sinclair**, after touring the Tripoli area, flew to Cairo with Air Chief Marshal Sir Sholto Douglas and Group Capt. Sir Louis Greig to visit R.A.F. squadrons and stations in Egypt. After a three-day visit he left on June 24 for Malta.

**Group Capt. H. J. Proud**, R.A.F., has been appointed Inspector-General of the Indian Air Force. The appointment is said to be an indication of the development and expansion of the I.A.F. and the importance attached to this rapidly growing force. Group Capt. Proud recently returned to India from England. He entered the R.A.F. in May, 1926.

**The number** of R.A.F. Bomber Command aircraft attacking industrial targets in Germany has increased by 66 per cent. during the first five months of this year as compared with the first five months of 1942. Average losses declined by 1.1 per cent. and during the same period the tonnage of bombs dropped was more than 100 per cent. greater than in the same period of 1942.

**The U.S. Army Air Forces** are to be increased by 115,000 new aircraft during the coming fiscal year. The programme will cost £9,000,000,000 and the U.S.A.A.F. will be calling for an additional civilian personnel of 56,000, bringing the total to 386,000. These facts were given to the Civil Service Committee of the U.S. House of Representatives on June 24 by

Lt.-General H. H. Arnold, Chief of the U.S. Army Air Forces.

**H.M. The King** has decided to issue, shortly, a Star to be known as the Africa Star to the victors of North Africa. A second Star, the 1939-43 Star, will go to officers and men in all Services who have fought in other theatres. These decisions were announced on June 25.

**"Daylight precision bombing** out of England has had a tremendous effect on the air operations of the German Army." This statement was made by General George Marshall, Chief of Staff of the U.S. Army during a speech at Columbus on June 21. He said that the losses inflicted on German fighters during the daylight bombing raids had had a direct and important bearing on the victory in Tunisia and on German air power on the Russian front. The Germans had assembled their best pilots in large numbers in an endeavour to halt the daylight blows at their vital installations.

Of the War in the Pacific, General Marshall said that to visualise the state of mind of the Japanese command was difficult when their ordinary losses ran from 30 to 75 per cent. with very moderate losses on the part of the U.S. pilots. He gave a warning against "hasty conclusion or impromptu conceptions regarding the utilisation of Air Power or any special weapon in the conduct of the War," saying that only by a combination of war-making means could victory be won.

**The first "regular airgraph"** mail from the United Kingdom was reported to have arrived at Canberra on June 23. The first dispatch consisted of one spool of negatives which left London on June 5 and took 18 days to reach Melbourne.

**Armoured vests** are now being worn by bomber crews of the U.S. Army Eighth Air Force as protection against splinters caused by "flak" and fragments from explosive shells. The vests are made of canvas fabric on which are sewn overlapping squares of manganese steel. An apron section suspended from the vest by hooks is also worn and gives protection as far as the knees. Two types of vests and aprons are made, full width for men whose duties cause them to stand and tapered for others. Pilots wear half-vests providing protection in front only. A full vest weighs 16 lb., a half-vest 7 lb., a full apron 6½ lb., and a tapered apron 4½ lb. The armour idea was developed by Col. M. C. Grow, Surgeon of the Eighth Air Force in collaboration with a London company experienced in making bullet-proof vests.

**A 50 per cent. increase** in the present strength of the R.A.A.F. is expected in Australia, according to Mr. Curtin, the Prime Minister, speaking in a debate in the House of Representatives at Canberra on June 22. Mr. Curtin said that the main object of Dr. Evatt's recent mission to the U.S.A. had been to obtain additional aircraft to defend Australia and President Roosevelt had approved the dispatch of the remaining aircraft required.

**The U.S. Army** has a new 4.7-in. A.A. gun that fires shells 60,000 ft., which is higher than the ceiling of any aeroplane now in use, according to Major-Gen. G. M. Barnes, Chief of the U.S. Army Ordnance technical division.

**A new U.S. combine**, known as Grand Rapids Industries Incorporated, was reported on June 21 to have been formed by 16 U.S. furniture companies which formed a pool last year to make parts for gliders. The new combine is said to have bought the rights in the General Aircraft Skyfarer, which it intends to build on mass-production lines at a low price after the War. The Skyfarer, officially named the Model G1-80 and originally known as the Puritan, was produced in 1941 by the General Aircraft Corporation of Lowell, Mass., after four years' development.

It is an all-metal two-seat side-by-side high-wing cabin monoplane with twin fins but no rudders, a tricycle undercarriage, and is powered with a 75 h.p. geared Lycoming motor. It was the second aeroplane in the U.S.A. to be certified by the C.A.B. as "characteristically incapable of spinning." General Aircraft claimed in 1941 that anyone who could drive a car could "solo" the Skyfarer after two-hours' dual instruction.

**Officers** for the Indian Air Force are being found to a large extent from the ranks, according to a report from Delhi on June 27. In the General Duties branch 28 per cent. of the officers are promoted airmen, in the Technical branch 30 per cent., and in the Equipment branch 25 per cent. During the past three months, 59 Indian airmen have been selected for training as pilot officers.

**A new Commandant** has been appointed, the Air Ministry announced on June 24, to the Royal Observer Corps, to succeed Air Commodore Geoffrey H. Ambler, O.B.E., A.F.C., who now takes up an appointment as Deputy Senior Air Staff Officer, Fighter Command. Air Commodore Ambler has carried out important and far-reaching changes in the organisation of the Royal Observer Corps, and is now succeeded by Group Captain Finlay Crerar, C.B.E. Group Captain Crerar has been a Station Commander, has held an appointment in Maintenance Command, and latterly as Deputy Director for Air Force Welfare. His military career began in 1925 with the City of Aberdeen Anti-Aircraft Company, R.E., and in 1937 he was commissioned in the Auxiliary Air Force and appointed to command the City of Aberdeen Squadron.

**The death** of Squadron Leader A. S. C. S. MacLaren, O.B.E., M.C., D.F.C., A.F.C., was reported on June 24 to have occurred at Madeira. In 1924 he made a gallant attempt to fly round the World in a Vickers Vulture (450 h.p. Napier Lion motor) with Flying Officer J. L. Plenderleith, R.A.F., as pilot and Sergeant Andrews, R.A.F., as engineer-in-charge. Squadron Leader MacLaren was the navigator. They left Calshot on Mar. 25 and fought their way through difficulties and misfortunes to Petropavlovsk, a distance of some 13,000 miles and half-way round the World. They crashed in a fog in the Komandorski Islands while flying to Alaska towards the end of July, 1924, and had to abandon the flight because they had no spares. Sqdn. Ldr. MacLaren retired from the R.A.F. in 1930.



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## News from Germany

THE RETURN of the German High Command to Clausewitz's defence strategy may prove to have marked the opening of the final stage of this War. After a struggle of three and a half years during which the German operations were based on Schlieffen's attack strategy, even Hitler had to accept the Clausewitz maxim that an offensive which does not result in the final overthrow of the enemy has been undertaken in vain. The defeat of the German Army at Stalingrad confirmed only what the German General Staff had realised since the break through of the Eighth Army at El Alamein, namely, that the balance of forces was being disturbed, not only on the various fronts, but also in military and industrial potential.

As far back as February, German military and aeronautical experts, among them General of Artillery Ludwig and General of Aviators Quade, revived Clausewitz and presented his classical conception of the superiority of the defence over the attack to the German public. At about the same time, German newspapers mentioned for the first time the presence of U.S. airmen in the North-West European theatre of War.

While the change in equilibrium of the forces on the front was of secondary importance to the German General Staff, that of the industrial potential was considered with utmost concern. In an analysis of the 1914-18 War, the superior economic potential of the enemies of Imperial Germany was given as the principal reason for Germany's collapse, although at that time America's industrial potential—in particular the potential of the U.S. aircraft industry—was still far from reaching its maximum output.

The generals stipulated, as far back as the early 'twenties, that German industrial production must be made so strong that it would always be superior even to a coalition of the highly industrialised Powers. For this reason, the generals made peace with Soviet Russia. They collaborated with their opposite numbers of the Russian General Staff and assisted the reconstruction of the Russian industry by setting up armament factories, and by selling new designs of aeroplanes such as those of Heinkel and Dornier.

Hitler's anti-Soviet obsession wrecked the plans of the generals. The Führer aimed to make Germany self-sufficient. The result was that, although Germany's industrial potential was strengthened by the conquest of many countries, the economic basis of the two European Axis members was still inadequate and was gradually surpassed by the Allies. Thus, in the second half of 1942, the General Staff demanded a further increase in industrial production which, under the direction of Reich Minister Speer, was to be achieved within one year. The increase was to be "an operation with limited aims." The German General Staff is aware that the Reich cannot now gain a decisive victory over the Allies in the field, but they still have hopes of winning the peace—and laying the foundations of another War.

Göbbels's skill as a propagandist can be recognised by the manner in which he tries to mitigate the shock which the German people suffered from the Axis setbacks in North Africa

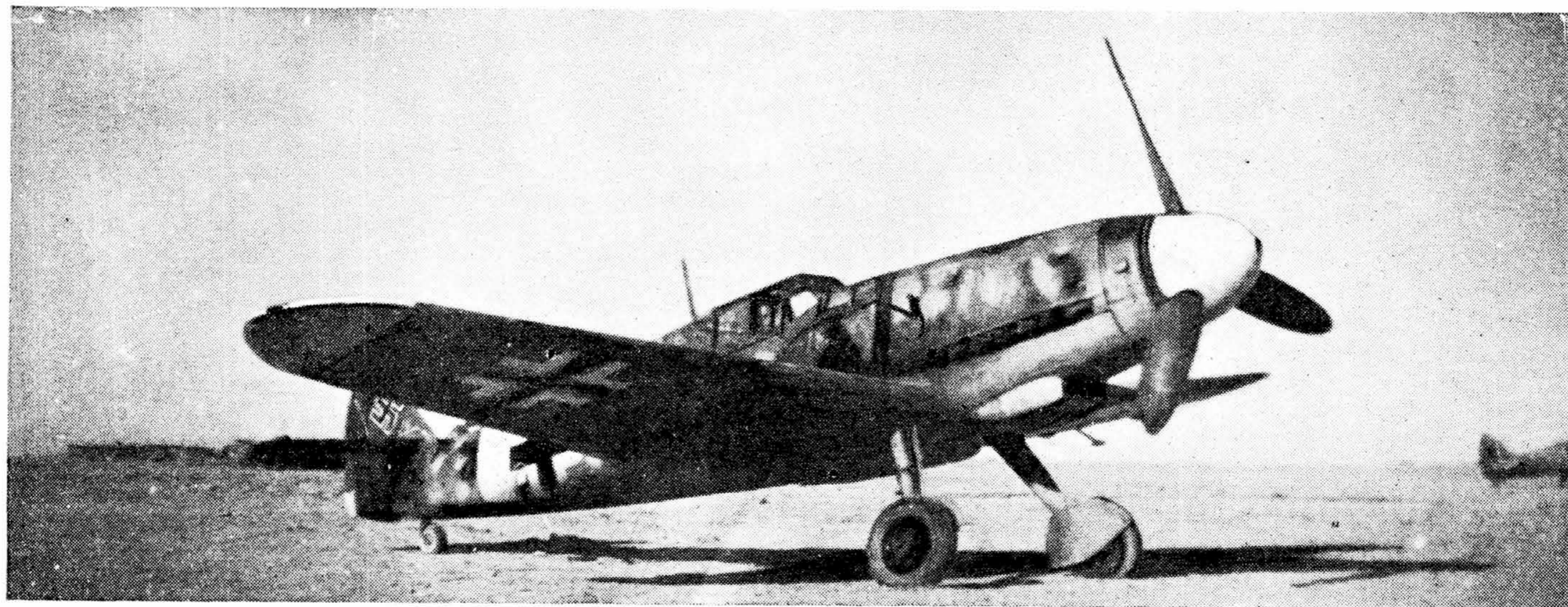
and at Stalingrad, and from the open admission of the High Command that the time of easy victories is not only over for Germany, but that she has to defend herself, at least temporarily. His main theme is that the Allies cannot win this War, even though their war potential has grown very big.

To prove the "superiority" of the Luftwaffe over the Allied Air Forces he invents Axis victories of the order of 40 to 1, or even higher. The figure of 18,346 British and American aircraft shot down between September 3, 1939, and May 31, 1943, has been circulated. British losses in night raids over Germany are exaggerated to emphasise the superiority of the German night fighters, and also to convince the German people that the British cannot continue to raid indefinitely because their losses in men and material cannot be made good. Material losses are calculated in working hours, while the significance of the personnel losses is explained by the fact that airmen take several years to train—at least in Germany, as Göbbels's mouthpieces never fail to boast.

Aeronautical writers and broadcasters, acting on an Order from the Propaganda Ministry, extol the high qualities of the Luftwaffe's equipment. The items most praised are the Do 217 bomber, the Fw 190 fighter, and the BMW 801 aero-motor, none of which, the propagandists maintain, can be surpassed by the Allies. Curiously enough, the Ju 86P and the He 177 are mentioned only in matter circulating abroad.

These "superior" German weapons, which are flown by "superior" airmen, are manufactured, according to Göbbels's propaganda, in factories which cannot be reached or found by Allied bombers. Factories in Southern Germany and South-Eastern Europe, writers and speakers explain, are too far inland for the heavy British and American bombers stationed in Great Britain. Those still within range of Allied bombers are so well camouflaged and so widely dispersed that they are difficult to locate and can be destroyed only by a prodigious number of bombs. American aircraft factories are described as vulnerable to air attacks because they are few and large, not small and numerous like those of Germany. In these "invulnerable" factories new aeroplanes for the Luftwaffe are being manufactured in great quantities, said Reich Minister Speer at the Nazi Party Rally last month.

German propaganda tries to conceal the seriousness of the labour situation by claiming that the entire labour force of Europe is united against "the common enemy." The twenty-eight million German factory workers are assisted by some four million foreigners, among them a million Frenchmen who crossed the frontier into Germany to build the weapons for the front. No mention is made of the many hundreds of Frenchmen who have returned to their homes after a short spell in Germany. Men and women of 20 different nationalities are employed in the Junkers factories, and the Germans use this to illustrate the "unity" of Europe in their home propaganda. But they do not admit the danger which this foreign contingent represents in the event of an Allied invasion of the European mainland.



MORE CANNON FOR THE ME 109.—Booty captured by the Eighth Army and other Middle East Forces during the North African campaign included some of the more modern enemy types. This Messerschmitt Me 109G2 was captured in perfect condition. It is now flying, under British markings, with a squadron of the R.A.F. The Me 109G2 is outwardly similar to the Me 109F, but has the new DB 605 motor. One version has the same armament as the Me 109F, plus two 20 mm. Mauser cannon in the wings. Other versions are fitted with pressure cabins.

# An Inspection Revolution by "Bristol's"

**I**NSPECTION has always been one of the cardinal factors in aircraft construction. It began as a measure of safety and was undertaken exclusively by the A.I.D. (or Aeronautical Inspection Department of the Air Ministry). "Approved" firms were later allowed to do their own inspection on the theory that a reputable firm dare not risk its good name by allowing inspection to be lax. Inspection is still partly a safety measure and the A.I.D. is still a dominant power.

Inspection of materials before they are used in the processes remains the basis of good aircraft products. Inspection of work done in the machine shops has become even more important than it was before production was expanded and sub-contracting and the dispersal of industry meant that parts made in many and diverse places must be sure to "fit" when they were brought together for assembly.

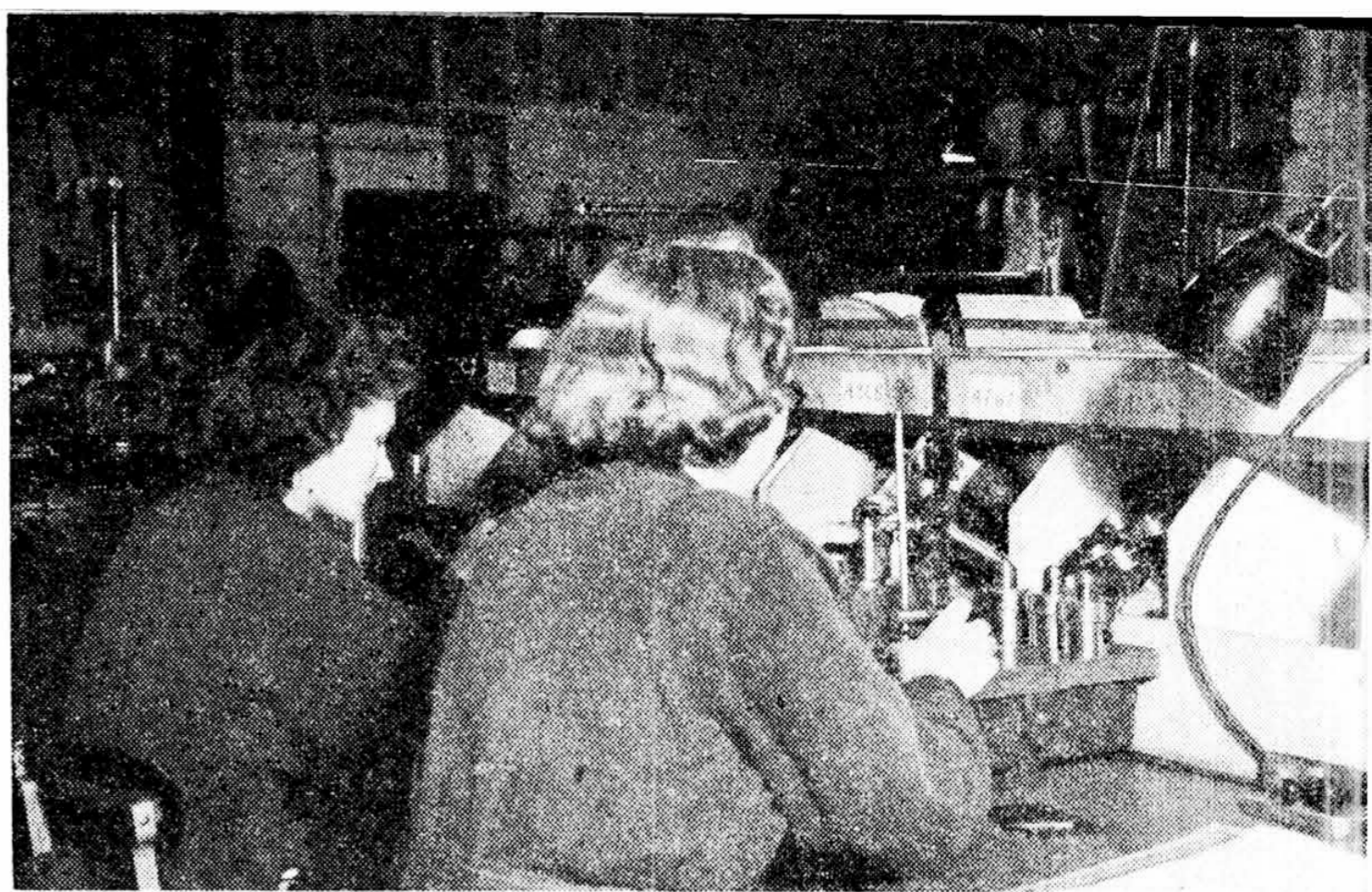
With the rise in the scale of production there has had to be a corresponding expansion in organised inspection. And inspection is a skilled and responsible duty. The inspector has often graduated from the foreman class. He is a skilled worker who has shown himself capable of assuming responsibility. In these days skill is needed where its influence on production is greatest and, as the younger men in industry are moved into the Forces, the more experienced workers find a growing demand for their skill in setting up machines for and supervising the work of semi-skilled workers, many of them women.

If production can be organised so that a large part of it can be undertaken by semi-skilled labour, a question which reasonably arises is whether or not a semi-automatic system of inspection can be devised for certain classes of product. A further matter of some consequence is an acceleration of inspection, not merely to keep pace with a greatly increased rate of manufacture but also to ensure that large numbers of defective parts shall not be produced.

In the past, parts awaiting inspection often piled up throughout the working hours of a shift and were passed or rejected later. In those circumstances, if a machine or an operative was turning out defective work, the proportion of "waste" was high and the amount of work which had to be done over again was equally high. Inspection now, therefore, is far more than a safety measure. It has had to become an essential agent in the co-ordination of dispersed manufacture. That is to say, it has got to ensure that the parts will go together on the assembly line. It has also to become a means of catching mistakes early if it is to play its part in avoiding waste and delay in the making of aeroplanes.

An inspector for every machine would possibly be the ideal if skilled labour were inexhaustible and cost could be ignored. That is impossible and the problem presented to manufacturers is precisely the reverse. It is the acceleration of inspection or its equivalent with fewer skilled workers engaged on the work. One method of meeting the situation has now been on trial in one division of an aircraft works for six months and has given such high promise that it will shortly be applied to another department. The experiment was made in a turning shop. It will be tried next in a press shop.

At the present stage the system has not reduced the number of persons engaged on inspection but it has permitted persons of no engineering experience to undertake the work after a brief three weeks' training. It has not wholly eliminated scrap but



**THE MEASURING BENCH.**—In this picture two operators of the "quality control" system are seen in a machine shop of the Bristol Aeroplane Co. The bringing together of production and inspection is well illustrated in this view.

it has reduced the amount of scrapped parts in the shop concerned from 3 per cent. to 0.75 per cent. and corrections from 7 per cent. to below 3 per cent. The system rests on an acceptance of the laws of probability. The statistical scientist says in effect that the probable range of variation in the manufacture of any part can be forecast on the evidence of a trial run, and that precise limits can then be set, within which an inspectress with a clock or other measuring gauge can check not every part but the average run of the job.

To the non-statistician the theory looks unattractive. A mystical mathematical factor, constant as an expression but varying with the number of samples taken in the trial run, turns the limits suggested by the trial samples into average limits for the whole of that particular job and, in fact, for any subsequent repetition of the job at quite long intervals. Nothing but ocular proof that the thing works would have led us to commend it. The Bristol Aeroplane Company has given it a sufficient trial in one of its machine shops to show that it works at least in that shop.

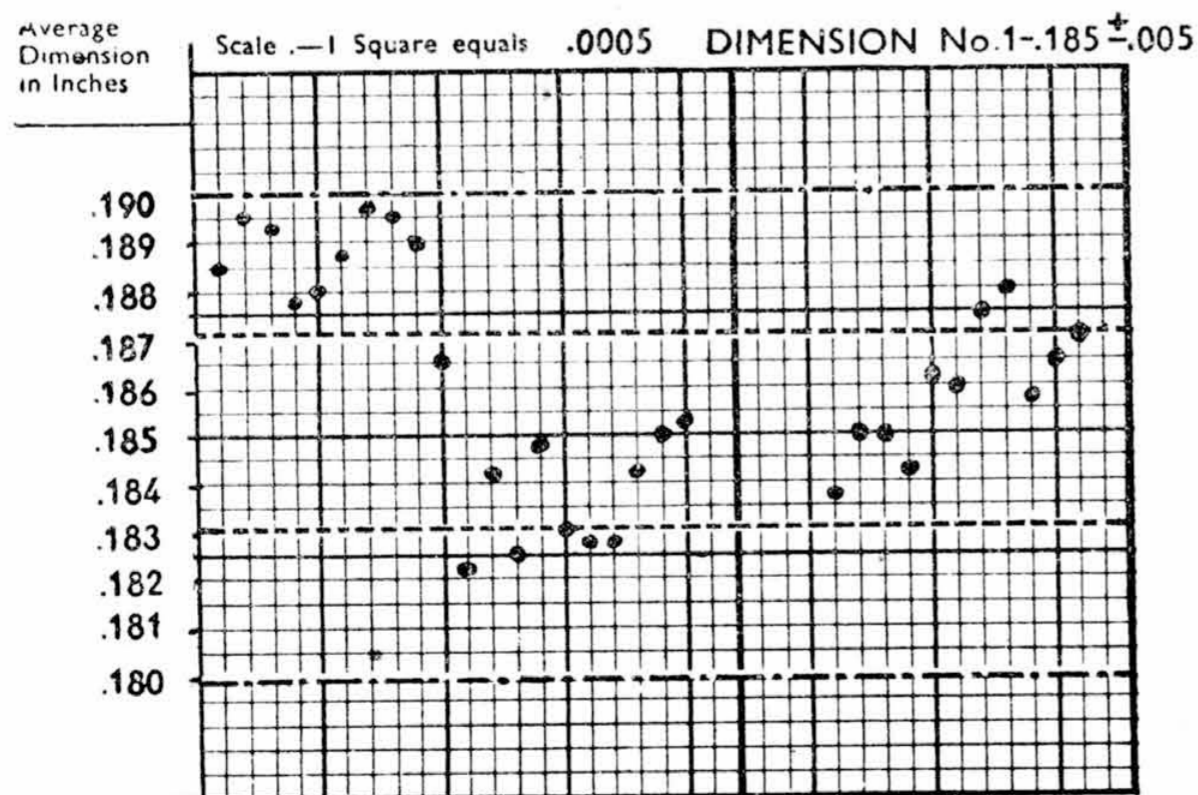
An objection which might be advanced by engineers who are unfamiliar with the system is that certain manufacturing tolerances are prescribed for every part and that the gauge can check these as easily as the artificial or statistical tolerances which this method of control sets up. The answer is that the new system seeks to anticipate faulty work by checking, not the spoiled parts but the very tendency to turn out spoiled parts. The inspection check can usually be applied before the faulty work is produced—in other words, it detects a trend on the part of the machine or the operator towards the tolerance limits and requires at once that something be done about it.

This is possible because every part examined by the inspector is recorded on a chart much in the same way as a patient's temperature is recorded periodically on a chart in hospital. That chart will show the permitted manufacturing tolerances, but it will not use them alone. Between those limits will be shown other lesser limits, arrived at by measuring the essential dimensions of the first set of samples and treating the average of them with the mystical constant which expresses the law of probability. Those limits will be represented by red lines on the chart. The chart is ruled out in small squares each equal to one-tenth thousandth or one-thousandth of an inch. A dot in the appropriate square will then show precisely the average measurement of each sample group of parts examined, just as a dot on a temperature chart records a precise condition in the patient at a particular time.

The temperature chart eventually does more. It constitutes a record of the patient's condition over a period and it shows any notable variation. That is exactly what the control chart does for the process of manufacturing a particular part. It comes into operation every hour, half-hour or less, to test the condition of the job. If the dots move determinedly over one of the red lines and are inclined to stay there, skilled advice has to be called in. Either the machine needs re-setting or the operator needs a further word of instruction or explanation or the machine may need repair. The virtue of the chart is that things cannot slide.

Any serious variation is shown up forthwith and the chart challenges the inspection and supervising staff to ignore it. Somebody has got to move in the matter or the chart will go on callously recording his negligence or dilatoriness. For this purpose, therefore, every machine is regarded as a patient. Its condition is tested by its product at regular intervals. Those intervals are fixed so that at least 15 per cent. but not more than 30 per cent. of the parts it produces will be measured. And as the time for each successive check comes round, the samples are taken from the parts "last off."

The use of this method obviously cannot mean that there will be no "defectives." Nor does it mean that ordinary visual inspection for flaws and cracks in the metal can be

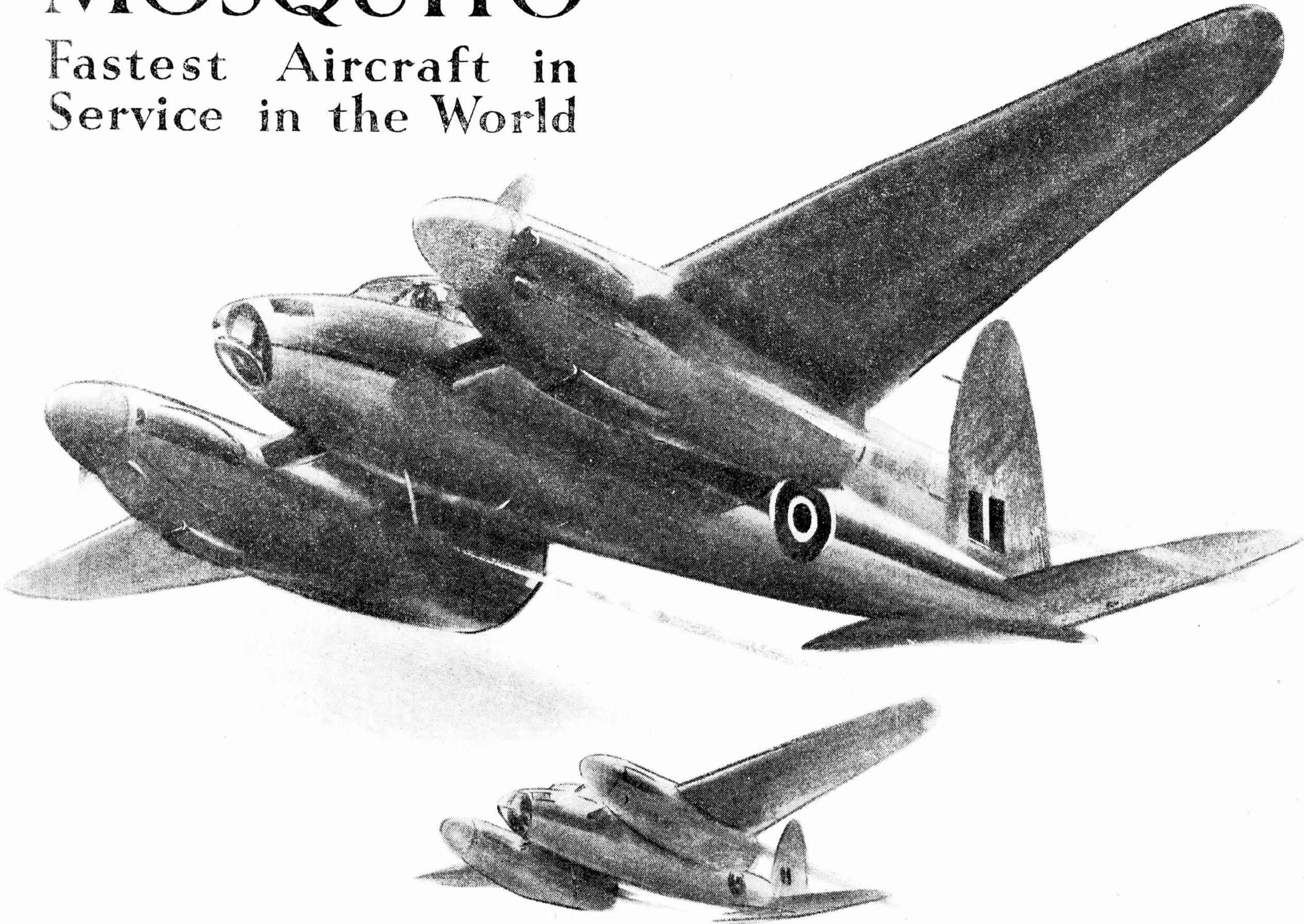


**CASE 1.**—This chart records one operation in the making of a special pin. As will be seen, the actual measurements are recorded by means of dots on the chart. The dotted lines shown at 0.187 in. and 0.183 in. are ruled in red on the control chart.

# MOSQUITO

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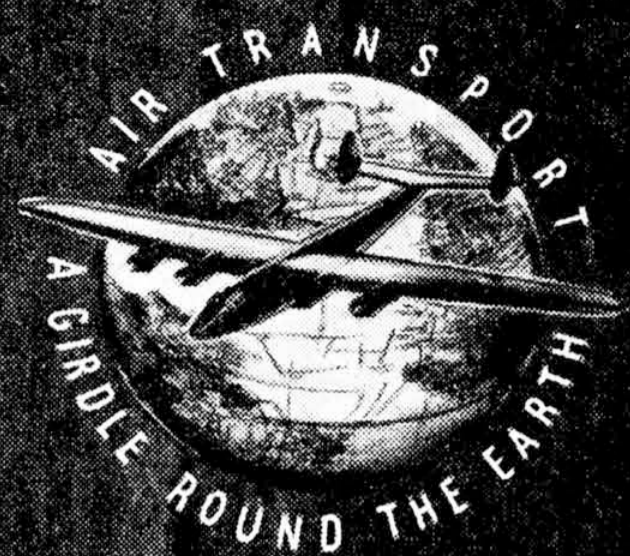
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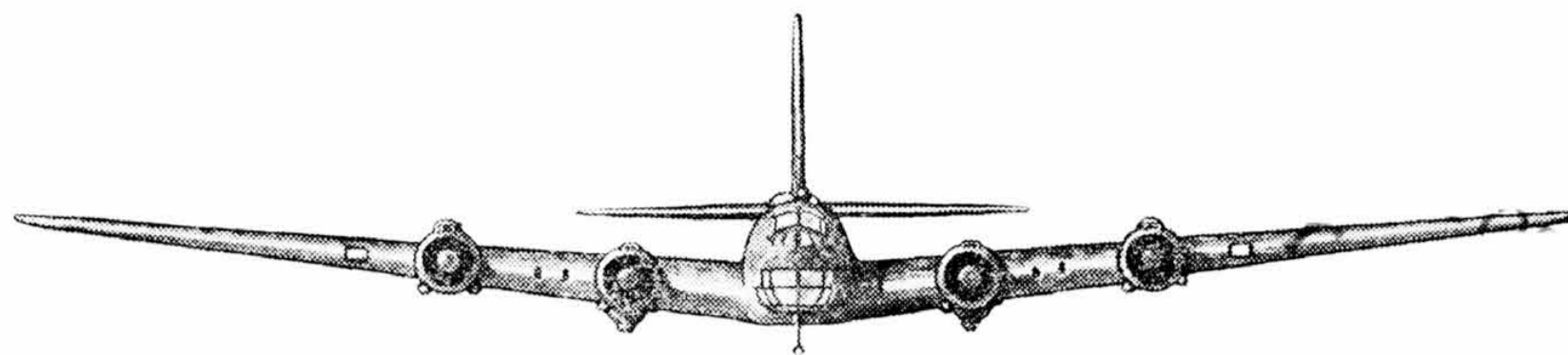
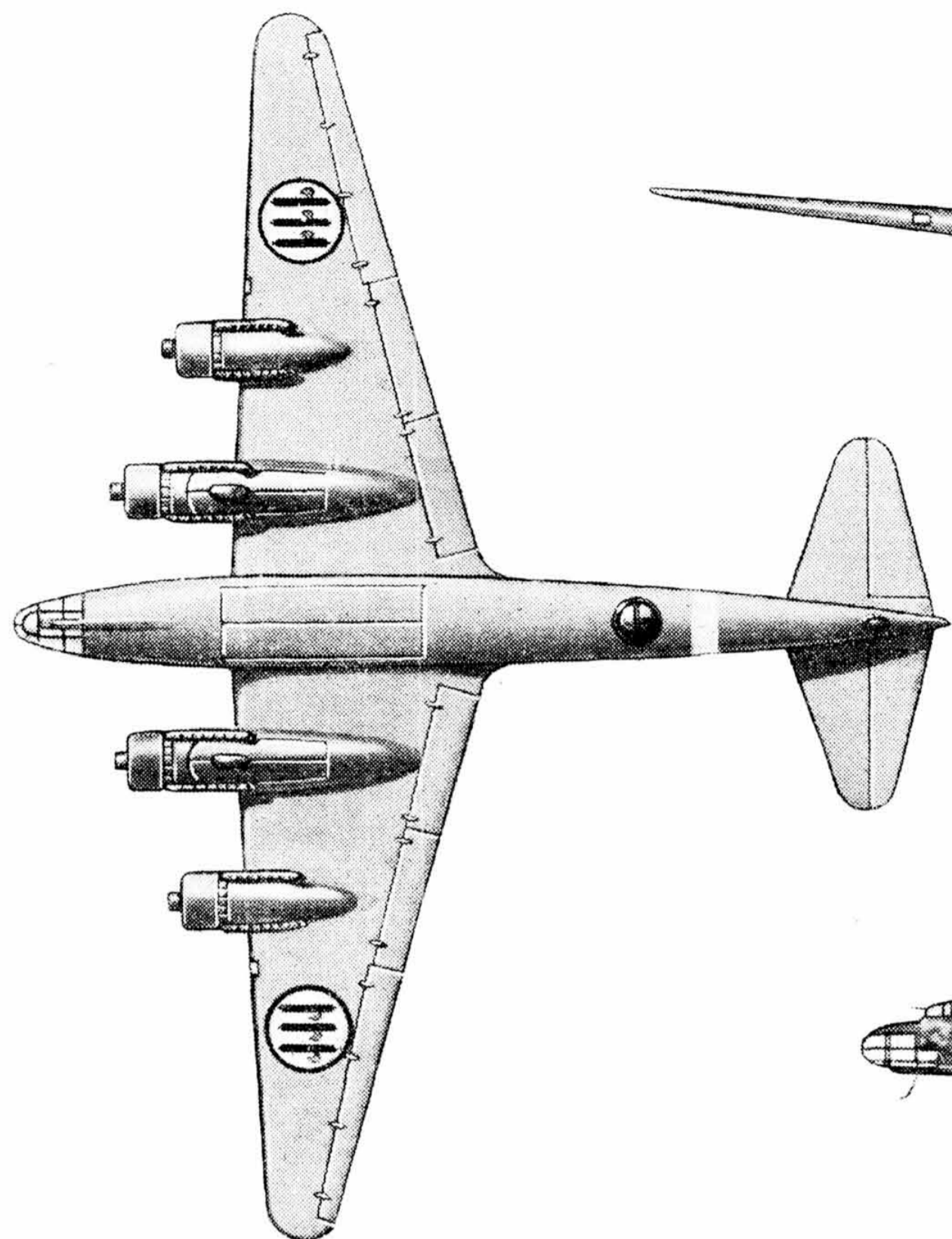
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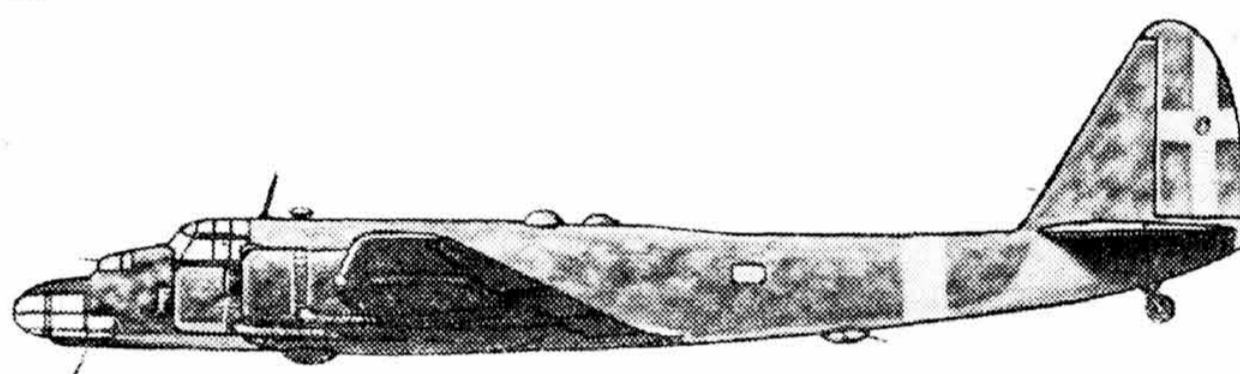
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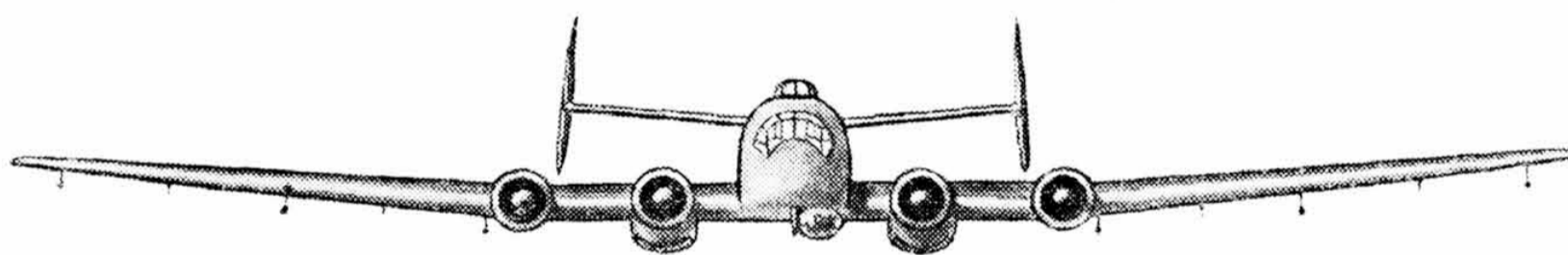
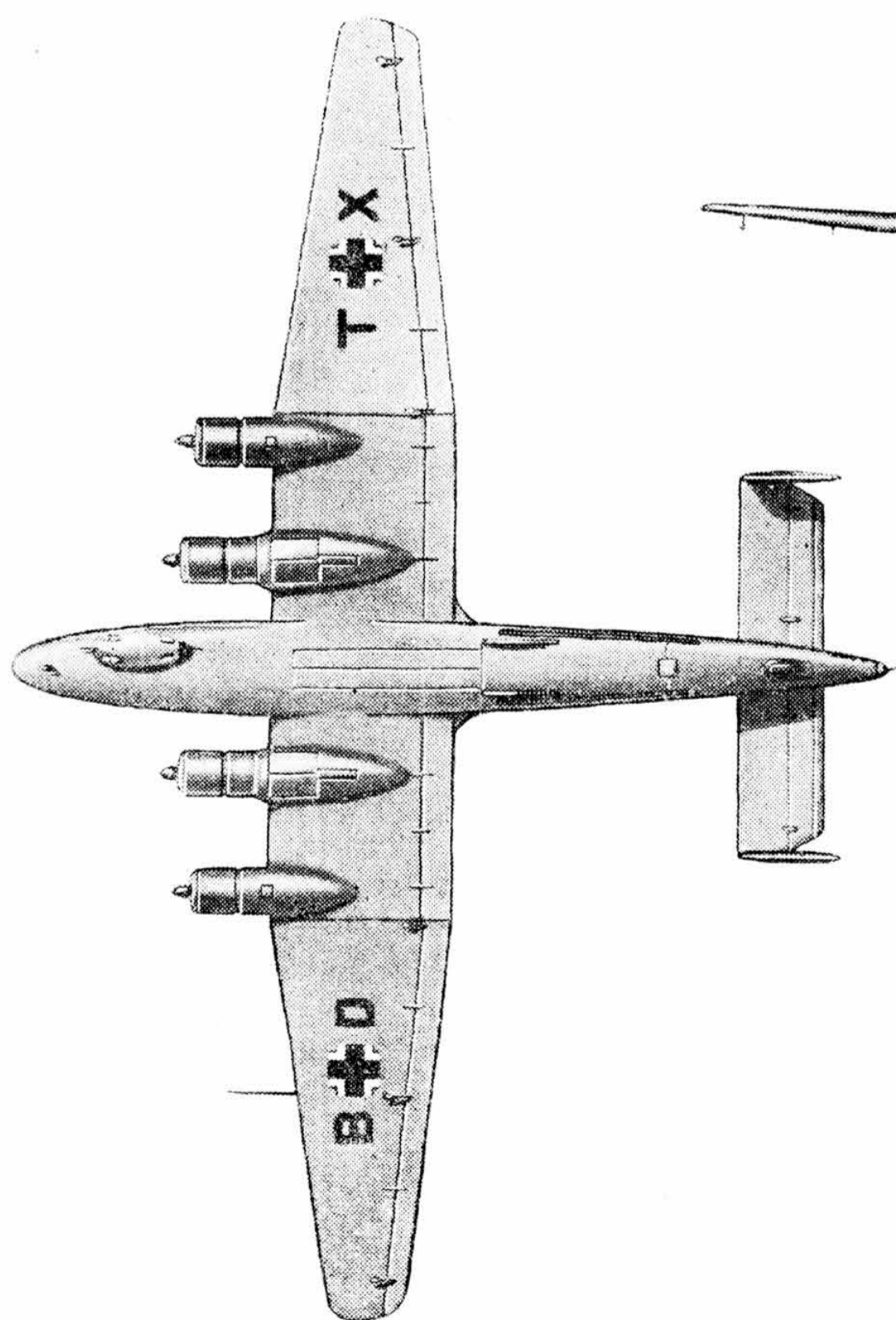
# AIRCRAFT RECOGNITION



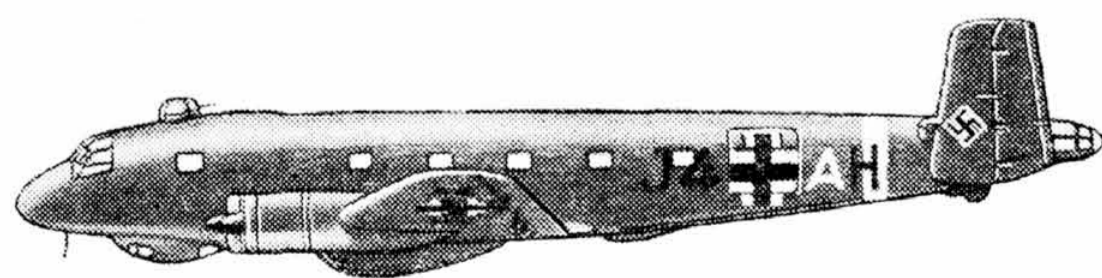
THE PIAGGIO  
P.108B



Span : 108 ft. 3 in.



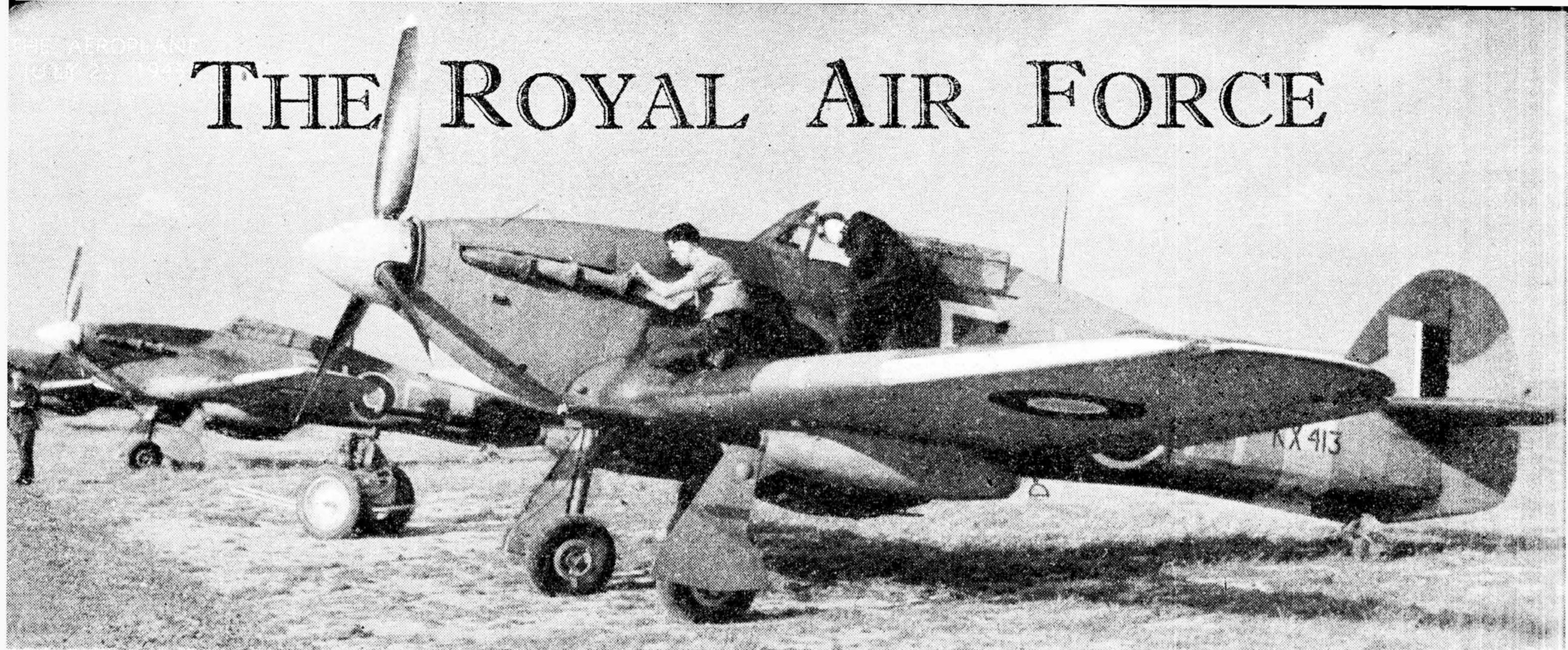
THE JUNKERS  
Ju 90s



Span : 137 ft. 6 in.

*"The Aeroplane."*  
Drawings by W. J. Everest.

# THE ROYAL AIR FORCE



ARMOUR PIERCING.—Hawker Hurricane II D tank busters showing the 40 mm. cannon under the wings.

## THE ROLL OF HONOUR

THE 247th and 248th Casualty Lists were published by the Air Ministry on June 18 and 21. They contain the names of 591 R.A.F. officers and airmen, including those of 173 mentioned in previous lists, as reported missing or missing believed killed and now presumed or reported killed in action or on active service.

The lists include 50 killed in action or on active service, 21 died or died of wounds or injuries received in action or on active service, 15 wounded or injured in action or on active service and 332 missing or missing believed killed in action.

The total of R.A.F. casualties officially reported since the War began is now 49,043.

The 247th and 248th Casualty Lists are:—

### ROYAL AIR FORCE Killed in Action

1077026 Sgt. J. G. P. Adams.  
1380725 Sgt. N. F. Bailey.  
644523 Sgt. O. Barraclough.  
34025 S/L I. M. T. De K.

1021483 Sgt. R. Brown. *Bocock.*  
1527436 Sgt. G. Dunn.  
1290985 F/Sgt. P. Inchcombe.  
1337819 Sgt. V. A. Rice.  
1352461 Sgt. J. Riley.

### Previously Reported Missing Believed Killed in Action, Now Presumed Killed in Action

80276 F/O L. G. Barlow.  
755880 F/Sgt. W. Barham.  
531369 Sgt. J. W. Brown.  
948764 Sgt. D. Hanlon.  
45486 F/O C. O'Brien.  
625189 Sgt. H. Smith.  
40866 Act. F/L R. W. A. Turtle.

### Previously Reported Missing, Now Presumed Killed in Action

109106 P/O W. H. Baber.  
516439 F/Sgt. T. F. Beaumont.  
1381239 Sgt. T. W. Belton.  
1112329 Sgt. F. N. Butterworth.  
944083 F/Sgt. T. Cook.  
1285428 Sgt. G. L. Cooper.  
65979 Act. F/L E. V. Darling. *D.F.C.*

580430 W/O B. Doyle.  
106565 F/O P. L. Edwards.  
36075 W/C J. A. G. Gordon.  
109016 P/O A. G. Hersey.  
904338 F/Sgt. F. C. House.  
48425 P/O C. E. Hurt.  
1169135 Sgt. G. M. Jones.  
1256771 Sgt. K. A. Lloyd.  
1113437 Sgt. I. D. Lowther.  
1304714 Sgt. B. E. B. Luckman.  
1052525 Sgt. T. H. McGrenery.  
535222 Sgt. A. Marvell. *D.F.M.*  
62689 F/O J. H. Menary.  
1007366 Sgt. P. Milnes.  
1016944 Sgt. J. E. Percival.  
931128 Sgt. A. W. Ragan.  
1313246 Sgt. L. N. Reynolds.  
1325076 Sgt. E. G. Ronson.  
114074 P/O G. Teicheira.  
120171 P/O E. F. Valentine.  
1309976 Sgt. W. R. Wagstaff.  
644993 Sgt. E. F. Webb.  
129281 P/O K. V. Whelan.  
61037 F/O K. D. Whisken. *D.F.C.*

114748 P/O P. P. Wilson.  
112280 P/O W. A. Arends.  
998260 F/Sgt. H. Asquith.  
1192885 Sgt. D. Barkway.  
1254387 Sgt. P. W. Barrett.  
1359903 Sgt. A. H. D. Barton.  
945463 Sgt. A. Bentley.  
1203654 Sgt. C. N. Bower.  
101535 F/O J. S. Bunbury.  
1292223 Sgt. E. R. J. Burrell.  
775126 F/Sgt. W. R. Cook.  
1162815 Sgt. H. Dauncey.  
1018216 F/Sgt. K. E. J. Evans.  
646908 Cpl. F. J. Few.  
932126 Sgt. G. W. Franks.

40470 S/L J. E. Gorrings-Smith.  
923461 F/Sgt. P. W. Gregory.  
115641 P/O W. F. B. Griffiths.  
1109846 Sgt. J. Grocock.  
755929 F/Sgt. T. E. Grosvenor.  
616588 F/Sgt. A. E. Groves.  
912780 Sgt. T. G. Gunn.  
1077240 Sgt. H. R. Hallam.  
44881 F/O H. G. Jones.  
65546 P/O J. A. Leslie.  
1341681 Sgt. I. C. McKeand.  
971310 F/Sgt. A. MacN. *McKelvie, D.F.M.*

985152 Sgt. J. McKenna.  
974024 Sgt. S. A. Marr.  
68148 F/O W. S. Marshall.  
548174 Sgt. A. B. Norman.  
1054935 F/Sgt. W. Onions.  
1053543 Sgt. E. E. Patchett.  
1177133 Sgt. R. W. Payze.  
574729 Sgt. F. C. Pearman.  
119010 P/O P. Pearson.  
1167487 Sgt. R. T. Perrin.  
119811 P/O D. T. W. Phillips.  
1184740 Sgt. R. H. Richardson.  
943217 F/Sgt. F. Roe.  
1313849 Sgt. M. B. Rogerson.  
104477 P/O C. I. A. Sandland.  
573717 Sgt. A. R. Scott.  
106856 P/O F. H. Shackleton.  
965570 Sgt. P. Simpson.  
1026301 Sgt. R. Slimings.  
60551 F/O G. R. Stead.  
1180185 Sgt. D. G. Symons.  
963850 F/Sgt. P. H. Thimblebee.  
33072 S/L H. R. Tidd.  
1007457 Sgt. N. Tomlin.  
108005 P/O L. Treppass.  
121523 P/O B. V. H. Tweedie.  
955762 Sgt. H. H. Watson.  
1063335 Sgt. G. A. White.  
576796 Sgt. R. C. M. White.  
971859 Sgt. N. Windle.  
909528 F/Sgt. K. D. Wright.  
550298 F/Sgt. F. J. E. Womar. *D.F.M.*

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133481 P/O T. E. C. Collinge.  
626794 F/Sgt. D. Axtell.  
657523 Sgt. H. Bateman.  
78682 F/L L. J. Davies.  
102140 F/O M. Duncan.  
531174 Sgt. T. Galloway.  
43548 F/L D. G. Harley.  
1379032 Sgt. R. Henderson.  
138684 P/O D. F. Howlett.  
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1316069 Sgt. D. H. Reid.  
144260 P/O F. M. Thompson.  
580705 W/O R. P. West.  
1216336 Sgt. J. W. Young.

1380224 Sgt. R. W. Adams.  
531185 Sgt. J. H. Aspden.  
1375117 Sgt. J. G. Baker.  
655682 F/Sgt. L. W. Baldwin.  
132190 P/O H. W. Barnett.  
126873 F/O A. D. Baxter.  
926857 F/Sgt. J. A. Beach.  
1601542 Sgt. R. F. Beaumont.

1010574 Sgt. J. A. Bell.  
113411 F/O R. L. Bellamy.  
1180082 Sgt. W. F. Biggs.  
125987 P/O K. S. Bird.  
1558122 Sgt. T. Boland.  
1029629 Sgt. A. Bone.  
1257971 Sgt. R. G. Boustead.  
657501 Sgt. G. Brady.  
971743 Sgt. L. C. Cameron.  
1160100 Sgt. L. W. Canning.  
1333550 Sgt. M. G. W. Capon.  
652517 Sgt. T. Carter.  
124706 F/O R. F. Clements.  
114724 Act. F/L D. O. Collinge. *D.F.C.*

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1430231 Sgt. A. J. Cousins.  
814139 Sgt. D. Curtis.  
569552 Sgt. R. E. Dadd.  
1691788 Sgt. F. P. Dadds.  
629241 Sgt. J. J. Davis.  
1551245 Sgt. W. Davis.  
124456 F/O H. H. Day.  
141800 P/O R. C. W. Dennis.  
125643 F/O H. D. Dixon.  
1810602 Sgt. H. E. Dixon.  
1531353 Sgt. K. C. Eagland.  
124560 F/O J. H. Elder.  
1187983 Sgt. L. L. Everden.  
1182265 Sgt. J. Gould.  
658400 Sgt. J. Goalling.  
124318 F/O H. Gray.  
921996 Sgt. W. G. Groveat.  
1281616 F/Sgt. T. J. Gwynn.  
1578210 Sgt. G. W. Hall.  
911341 Sgt. J. Hall.  
1810453 Sgt. R. A. Hall.  
1126345 Sgt. W. M. Hamilton.  
1244010 Sgt. T. F. Hayden.  
101543 F/O J. W. Holloway.  
1108958 Sgt. T. H. Hutton.  
1249758 Sgt. D. J. A. Hyde.  
1387760 Sgt. W. Illingworth.  
1271750 Sgt. D. F. Inch.  
1332170 Sgt. L. A. James.  
1332016 Sgt. A. F. Johnson.  
1453416 Sgt. R. J. Johnson.  
1236043 Sgt. F. J. Knight.  
547135 Sgt. J. P. Lacy.  
1132944 Sgt. E. M. Lee.  
1203653 Sgt. L. Lewis.  
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1333188 Sgt. R. W. Maron.  
1391083 Sgt. L. C. Minshaw.  
117484 Act. F/L E. G. Mortenson.  
700735 Sgt. E. Mumme.  
139423 P/O J. North.  
627985 F/Sgt. S. F. Pannell.  
114393 F/O D. B. Panting.  
1078306 Sgt. J. Parkinson.  
1384483 Sgt. S. W. Patton.  
116397 P/O D. C. Payne.  
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1202044 F/Sgt. C. B. Perring.  
1376120 Sgt. R. L. Pierson.  
1578344 Sgt. D. A. Pitman.  
966174 Sgt. J. Pomret.  
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1128117 Sgt. K. Ray.  
1172613 Sgt. J. H. Reynolds.  
535019 F/Sgt. C. G. Rich.  
1391946 Sgt. N. P. Richmond.  
1079476 Sgt. M. Riley.  
120669 F/O T. C. Robinson.  
950253 Sgt. L. Rudkin.  
1149715 Sgt. T. G. Shergold.  
137324 P/O A. F. Sherwin.  
1052462 F/Sgt. J. L. Shiells.  
1197663 Sgt. R. S. Sidwell.  
126887 P/O H. E. Smith.  
1232112 Sgt. J. A. Smith.  
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39136 Act. W/O J. G. W. Swain.  
657419 Sgt. A. T. Symens.  
1378543 Sgt. W. C. Tassell.  
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124478 F/O D. A. Trotman.  
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40210 F/L R. A. Craigie.  
143859 P/O R. P. Cryer.  
47871 F/O A. Daley. *D.F.M.*  
1505512 Sgt. E. F. Doolittle.  
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1474209 Sgt. F. Grant.  
1237253 Sgt. W. D. Griffith.  
1257965 Sgt. I. C. Haines.  
1210696 Sgt. R. Harrison.  
905022 Sgt. R. E. Haywood.  
1335814 Sgt. H. R. Henley.  
1220683 Sgt. C. H. Herbert.  
1378583 Sgt. E. A. Higham.  
959541 F/Sgt. R. Hill.  
1078836 Sgt. W. Holding.  
128518 P/O G. F. Jones.  
1260533 Sgt. K. W. Jury.  
1383957 Sgt. A. D. Kitchen.  
963184 Sgt. M. Kleinhorn.  
1312487 Sgt. R. A. Knapman.  
1004486 Sgt. J. Lees.  
1387933 Sgt. A. O. Lewis.  
1586011 Sgt. N. E. Lind.  
1090703 Sgt. R. F. Lyster.  
1098034 Sgt. F. H. McConville.  
84004 F/L H. M. D. Magill.

1295036 Sgt. R. E. Smith.  
64282 F/O J. C. Stevenson. *D.F.C.*  
39136 Act. W/O J. G. W. Swain.  
657419 Sgt. A. T. Symens.  
1378543 Sgt. W. C. Tassell.  
1270671 Sgt. E. G. Thomas.  
1004634 Sgt. L. Thompson.  
125888 F/O C. Thwaites.  
124478 F/O D. A. Trotman.  
1193816 Sgt. D. Wainwright.  
656462 Sgt. R. F. Wanstall.  
1305419 F/Sgt. L. E. Wardill.  
1652776 Sgt. D. A. Watkins.  
1312572 Sgt. D. M. T. Watts.  
49997 P/O J. F. Webb.  
131125 P/O C. E. Wellard.  
1316504 Sgt. C. G. West.  
1333520 Sgt. R. A. Whellams.  
106037 F/O K. D. Williams.  
1486633 Sgt. V. J. Williams.  
1383005 Sgt. G. J. Wilson.  
1413863 Sgt. D. B. Wombwell.  
130506 P/O R. G. Wood.  
995589 Sgt. R. Woodhall.  
1213927 Sgt. G. C. Wright.  
1290993 Sgt. L. R. Akehurst.  
1104527 Sgt. K. Ambler.  
1241805 Sgt. R. A. Asbury.  
915913 Sgt. G. H. Austin.  
1354869 Sgt. D. R. Barber.  
1412081 Sgt. H. R. Barnes.  
1313503 Sgt. A. Barrie.  
1078000 Sgt. J. A. Bates.  
916170 Sgt. F. V. Bayford.  
1300620 Sgt. J. Bayliss.  
1535181 Sgt. A. Beard.  
626944 F/Sgt. R. Beavan.  
1162200 Sgt. A. W. Berry.  
43195 S/L F. C. Bertram.  
40202 S/L W. A. Blake.  
1376911 Sgt. W. C. Bostock.  
1312833 Sgt. B. T. Brett.  
125668 F/O W. C. Brisbane.  
1289968 Sgt. J. H. H. Brownlee.  
1068572 Sgt. N. Bruce.  
127066 F/O R. H. Capron.  
1200432 Sgt. C. H. Collins.  
1600059 Sgt. W. J. Colwill.  
1271985 Sgt. J. C. F. Cook.  
1313990 Sgt. G. S. Cooper.  
542661 Sgt. J. Cooper.  
1496446 Sgt. K. Coulson.  
40210 F/L R. A. Craigie.  
143859 P/O R. P. Cryer.  
47871 F/O A. Daley. *D.F.M.*  
1505512 Sgt. E. F. Doolittle.  
132025 P/O W. J. Dowdell.  
902553 Sgt. W. J. Drayton.  
1346422 Sgt. J. G. Duncan.  
577654 Sgt. H. V. Durrant.  
198784 Sgt. D. Edwards.  
1078045 Sgt. G. H. Edwards.  
1167329 W/O J. G. Edwards.  
1579640 Sgt. A. K. Eley.  
976368 Sgt. R. G. Elkans.  
929876 Sgt. W. T. Fair.  
1575746 Sgt. D. C. Farley.  
996048 Sgt. A. P. Gletty.  
49935 P/O R. H. Glover.  
1474209 Sgt. F. Grant.  
1237253 Sgt. W. D. Griffith.  
1257965 Sgt. I. C. Haines.  
1210696 Sgt. R. Harrison.  
905022 Sgt. R. E. Haywood.  
1335814 Sgt. H. R. Henley.  
1220683 Sgt. C. H. Herbert.  
1378583 Sgt. E. A. Higham.  
959541 F/Sgt. R. Hill.  
1078836 Sgt. W. Holding.  
128518 P/O G. F. Jones.  
1260533 Sgt. K. W. Jury.  
1383957 Sgt. A. D. Kitchen.

1351177 Sgt. J. N. McHarrie  
 1559316 Sgt. A. I. Mackay.  
 1236515 Sgt. M. F. McKeon.  
 657876 Sgt. A. D. McKilligan.  
 1393417 Sgt. D. B. Martin.  
 57800 P/O F. C. Milton.  
 143666 P/O I. M. P. Morgan.  
 1391847 Sgt. G. A. Nunez.  
 913181 Sgt. J. D. Olding.  
 81927 F/L C. W. Parish.  
 1475694 Sgt. C. Payne.  
 1029848 Sgt. F. T. Peake.  
 1559144 Sgt. T. Peat.  
 657052 Sgt. G. C. Peters.  
 972811 Sgt. G. M. Pettigrew.  
 130512 P/O G. J. Phillips.  
 998431 Sgt. L. Pickford.  
 1218594 Sgt. R. G. Prince.  
 1520443 Sgt. J. A. Proctor.  
 1187793 Sgt. A. S. Quick.  
 1238287 Sgt. W. D. Ramsay.  
 658424 Sgt. H. Ray.  
 37480 S/L J. C. Richards.  
 949104 Sgt. S. Richardson.  
 651771 Sgt. G. E. Roberts.  
 1391145 F/Sgt. J. Rodgers.  
 1321620 Sgt. L. A. Rummery.  
 1062060 Sgt. I. W. Sanderson.  
 577631 Sgt. R. G. H. Sees.  
 1123560 Sgt. P. Shortland.  
 1388118 Sgt. P. H. Snow.  
 1345207 Sgt. D. MacK. Smellie.  
 947859 Sgt. J. Spiers.  
 1216102 Sgt. L. S. Staight.  
 1351810 Sgt. J. Stephen.  
 1150881 Sgt. R. W. Stockton.  
 1334603 Sgt. N. Thompson.  
 127120 P/O A. W. A. Trevarthen  
 70691 S/L E. F. Tyler.  
 1333767 Sgt. D. A. H. Underwood  
 955160 Sgt. W. N. Underwood.  
 1316342 Sgt. C. Vandy.  
 49733 F/O L. Walters.  
 1020872 Sgt. F. G. Ward.  
 635944 Sgt. J. C. Waring.  
 1090550 Sgt. C. W. Warne.  
 1487877 Sgt. J. J. Waulkhard.  
 1318661 Sgt. D. Weight.  
 127044 F/O W. B. Wells.  
 935454 Sgt. H. Wilford.  
 1314142 Sgt. R. H. Winter.  
 1314128 Sgt. L. J. Yeo.

**Killed on Active Service**  
 1324042 Sgt. C. B. Brockington  
 1393627 Sgt. J. R. G. Calvert.  
 1235944 Sgt. P. J. Conwell.  
 123104 F/O D. B. De Kretser.  
 130571 P/O G. H. D. Druce.  
 1476182 Sgt. C. A. Good.  
 1383142 Sgt. D. C. Grocock.  
 122236 F/O P. C. Price.  
 1276964 A.C.1 W. T. M. Price.  
 1313694 Sgt. R. V. Rosser.  
 1385329 Sgt. F. C. Townsend.  
 1007194 Sgt. H. Wilcock.  
 1282690 F/Sgt. D. E. Hamlyn.  
 127354 F/O S. Hetherington.  
 1035815 Sgt. W. P. Hoare.  
 1433551 Sgt. H. M. Holmes.  
 120020 F/O L. C. Hoslin.  
 130330 F/O R. V. Moore.  
 1395720 Sgt. A. G. Page.  
 1295112 Sgt. L. F. J. Short.  
 138479 P/O R. W. H. Stock.  
 1587193 L.A.C. M. H. E. Thomas.  
 1489918 L.A.C. D. H. Washer.  
 48007 F/O H. B. Waterson.  
 1128697 Sgt. W. L. White.  
 139846 P/O N. G. Woodward.

**Previously Reported Missing, Now Reported Killed in Action**  
 109943 P/O N. G. Sprake.

**Wounded or Injured on Active Service**  
 1422881 A.C.1 A. C. Halford.  
 571239 Sgt. L. J. Hayward.  
 1200411 A.C.1 H. G. W. Lamb.  
 1460168 L.A.C. A. E. E. R. Nicholls.  
 972929 L.A.C. T. R. Penny.  
 1297471 L.A.C. V. Stephen.  
 952163 Sgt. E. G. Clarke.  
 122957 F/O J. R. Jones.  
 1252915 F/Sgt. D. Manser.  
 931710 F/Sgt. T. Whetstone.

**Died of Wounds or Injuries Received on Active Service**  
 1126460 Sgt. K. Howarth.  
 1065764 F/Sgt. D. A. McCluney.  
 1010887 L.A.C. S. Schofield.  
 908498 F/Sgt. W. P. Whorlow.

**Died on Active Service**  
 958487 Cpl. G. A. Bolland.  
 1104265 L.A.C. A. Briggs.  
 327619 L.A.C. J. Davis.  
 647635 L.A.C. D. M. Dimmer.  
 919471 Cpl. L. C. Fredericks.  
 1537166 Act. Cpl. W. Glover.  
 1891709 A.C.1 J. Hamme.  
 1359610 A.C.2 D. Mason.  
 49076 F/O C. Morgan.  
 525909 Sgt. E. M. Philpott.  
 1524389 A.C.1 H. Ryder.  
 339503 Cpl. J. Harding.  
 616155 L.A.C. D. Harper.  
 1122383 A.C.1 H. M. Hughes.  
 1458925 L.A.C. W. J. Jones.

**ROYAL AUSTRALIAN AIR FORCE**

**Previously Reported Missing Believed Killed in Action, Now Presumed Killed in Action**  
 Aus.400642 P/O G. G. Buckland.  
 Aus.401305 Sgt. T. E. Exell.

**Previously Reported Missing, Now Presumed Killed in Action**  
 Aus.401308 Sgt. A. J. Grabham.  
 Aus.404522 P/O N. W. Richardson, D.F.C.  
 Aus.403157 P/O C. K. Tait.  
 Aus.402687 Sgt. E. D. Williams.  
 Aus.404679 F/O W. D. Bohl.  
 Aus.405469 F/O R. C. Carson.  
 Aus.404016 F/Sgt. A. Greaves.  
 Aus.401588 Sgt. R. G. L. Holton.  
 Aus.404853 Sgt. J. F. Jacklin.  
 Aus.403054 P/O G. R. Jones.  
 Aus.403179 Sgt. N. K. Judd.  
 Aus.400476 F/O A. G. Macdonald.  
 Aus.405094 Sgt. A. M. T. Mears.  
 Aus.21152 A.C.1 W. E. Menzies.  
 Aus.403761 Sgt. P. O'Connell.  
 Aus.403171 Sgt. A. J. Pankhurst.  
 Aus.407459 P/O N. H. Shillabeer.  
 Aus.401333 Sgt. A. Wotherspoon.

**Wounded or Injured in Action**  
 Aus.416735 F/O C. B. Anderson.

**Died of Wounds or Injuries Received in Action**  
 Aus.400523 F/Sgt. K. C. Birdsey.

**Missing Believed Killed in Action**  
 Aus.406702 Sgt. R. C. Stuart.

**Missing**  
 Aus.405819 Sgt. P. L. Boasse.  
 Aus.403336 P/O M. A. Harland.  
 Aus.416574 F/Sgt. R. S. Hogben.  
 Aus.413208 Sgt. N. C. Keeffe.  
 Aus.408770 F/Sgt. E. L. Lancaster.  
 Aus.412633 F/Sgt. F. McGlinchy.  
 Aus.411165 Sgt. I. G. Miller.  
 Aus.411043 Act. F/L B. F. Myers.  
 Aus.420327 F/Sgt. M. A. B. Watkins.

**Killed on Active Service**  
 Aus.408232 Sgt. L. N. Bain.  
 Aus.411439 Sgt. C. MacL. Bridgen.  
 Aus.408564 Sgt. W. V. Chittock.  
 Aus.405676 Sgt. P. J. Cramer.  
 Aus.406804 Sgt. B. F. K. Green.  
 Aus.409157 F/Sgt. J. W. F. S. Liley.  
 Aus.401527 Sgt. I. S. McLennan.  
 Aus.401176 F/Sgt. G. R. Webb.

**Wounded or Injured on Active Service**  
 Aus.403811 F/O R. R. Hely.  
 Aus.408244 Sgt. G. E. Boyes.  
 Aus.412399 Sgt. L. T. Cook.  
 Aus.410236 Sgt. L. N. Ingram.  
 Aus.403383 Act. F/L A. I. Stuart.

**ROYAL CANADIAN AIR FORCE**

**Killed in Action**  
 86850 F/Sgt. B. Anderson.  
 J.20010 P/O D. R. McLean.  
 R.95405 F/Sgt. H. J. Taylor.

**Previously Reported Missing Believed Killed in Action, Now Presumed Killed in Action**  
 J.7076 P/O K. H. Taylor.  
 J.7197 P/O B. P. Cardinal.

**Previously Reported Missing, Now Presumed Killed in Action**  
 J.15015 Act. F/L T. W. Allen.  
 R.76305 Sgt. D. M. Baird.  
 R.91184 Sgt. J. R. Collins.  
 R.76026 Sgt. B. A. Dakin.  
 J.4107 F/O G. G. O. James.  
 J.15225 F/O S. S. Martin.  
 R.75145 Sgt. R. McA. Neil.  
 R.79687 Sgt. D. Pearce.  
 R.100818 Sgt. R. A. Russell.  
 J.7825 P/O S. F. Smither.  
 R.77490 Sgt. I. R. Watson.  
 R.73182 Sgt. V. B. Whelpley.  
 R.78711 Sgt. G. L. Wilkinson.  
 J.8414 P/O E. Atkinson.  
 R.74994 Sgt. E. K. Brennan.  
 J.7473 P/O G. H. Chaffey.  
 R.101535 F/Sgt. H. A. Chislett.  
 R.61096 F/Sgt. N. E. Costigan.  
 R.78493 W.O. W. R. Davies.  
 J.15419 P/O F. R. Donnison.  
 R.55404 F/Sgt. R. E. Fuller.  
 R.62217 F/Sgt. R. A. A. Gorieu.  
 J.15584 P/O A. H. Harris.  
 R.69856 Sgt. J. T. Hunter.  
 R.69338 Sgt. J. H. Kinch.  
 R.76219 Sgt. H. A. Macdonald.  
 J.15579 P/O B. A. Miller.  
 J.15648 P/O W. J. Ruddy.  
 J.15260 P/O G. A. J. Ryckman.  
 R.78934 Sgt. A. Shepherd.  
 R.65215 F/Sgt. E. E. Sheppard.  
 R.58531 F/Sgt. L. Sidney.  
 R.53943 W.O. G. H. Smith.  
 J.15454 P/O J. E. Sumpton.  
 J.6001 F/O E. D. Vanier.  
 R.54847 Sgt. C. S. Walsh.

**Died of Wounds or Injuries Received in Action**  
 R.129438 Sgt. J. P. Merton.

**Missing Believed Killed in Action**  
 R.64824 F/Sgt. D. D. McLeod.  
 R.125006 Sgt. D. E. Roberts.  
 R.84046 F/Sgt. R. H. Stewart.  
 R.130533 Sgt. S. Tomyn.  
 J.9902 F/O K. R. Waters.

**Missing**  
 R.73769 Sgt. K. T. P. Allan.  
 R.139949 Sgt. S. Archie.  
 R.87330 F/Sgt. R. J. Barnes.  
 R.94993 Sgt. J. A. Bessette.  
 R.90351 F/Sgt. R. Birchall.  
 R.73825 Sgt. A. C. Cantley.  
 R.114486 Sgt. G. D. Cline.  
 J.16360 P/O B. M. Harker.  
 R.120606 Sgt. G. C. Heming.  
 R.127784 Sgt. L. M. Horahan.  
 R.124524 Sgt. J. E. Isaacs.  
 R.92762 F/Sgt. D. E. James.  
 R.149986 Sgt. S. J. Jorgensen.  
 R.109126 Sgt. J. C. Kennedy.  
 R.95511 Sgt. J. M. Leblanc.  
 R.135092 Sgt. E. J. Longstaff.  
 R.80093 W.O. J. S. Phelps.  
 J.17557 P/O K. M. Piche.  
 R.113191 Sgt. J. K. Plank.  
 R.122884 Sgt. F. A. Robb.  
 J.4784 F/O W. M. Struthers.  
 R.59449 F/Sgt. A. R. Twiss.  
 R.86348 F/Sgt. W. J. Watters.  
 R.102353 Sgt. J. O. Way.  
 R.53979 F/Sgt. E. A. Whalen.  
 R.115908 Sgt. D. Zaeschuk.  
 R.115483 F/Sgt. W. G. Blight.  
 R.123973 Sgt. L. R. Coutis.  
 R.105169 Sgt. P. J. Cozens.  
 R.136360 Sgt. L. Dutton.  
 R.81030 Sgt. H. W. Fill.  
 R.134457 Sgt. S. G. Giffin.  
 R.55551 W.O. J. J. A. Guay.

R.117684 Sgt. I. G. Haines.  
 R.98354 Sgt. W. C. Hencke.  
 R.89611 Sgt. L. J. Krulicki.  
 R.88100 Sgt. I. Macdonald.  
 J.8807 F/O N. M. McLellan.  
 R.86762 F/Sgt. J. S. Marshall.  
 R.105856 Sgt. J. Paplowski.  
 R.90867 Sgt. F. R. Pilon.  
 R.86547 Sgt. A. Podolsky.  
 R.50471 Sgt. N. O. Robinson.  
 R.123492 Sgt. J. A. Smith.  
 R.134019 Sgt. E. Strandberg.  
 J.16604 P/O E. R. Vance.

**Killed on Active Service**  
 R.78961 F/Sgt. R. W. Cairns.  
 J.13098 F/O G. F. Jackson.  
 J.9424 F/O R. B. Reed.  
 J.7324 F/O F. G. Willis.  
 J.20226 P/O J. E. L. Cantin.

**Previously Reported Missing, Now Presumed Killed on Active Service**  
 R.56162 Sgt. A. J. Lassner.

**ROYAL NEW ZEALAND AIR FORCE**

**Previously Reported Missing Believed Killed in Action, Now Presumed Killed in Action**  
 NZ.41342 Sgt. S. H. Lincoln.

**Previously Reported Missing, Now Presumed Killed in Action**  
 NZ.405215 Sgt. T. B. Ainger.  
 NZ.402438 Sgt. B. J. Daley.  
 NZ.404950 Sgt. S. H. Schofield.  
 NZ.401291 F/Sgt. L. McK. Scott.

**Missing Believed Killed in Action**  
 NZ.415980 Sgt. R. C. Anderson.  
 NZ.411859 F/O R. N. Chancellor.

**Missing**  
 NZ.412211 F/O K. E. Debenham.  
 NZ.415819 P/O K. H. G. Groves.  
 NZ.403027 F/Sgt. N. E. Powell.  
 NZ.413281 Sgt. R. C. Stone.

**Killed on Active Service**  
 NZ.39197 W.O. T. B. Blackburn, D.F.M.

**SOUTH AFRICAN AIR FORCE**

**Previously Reported Missing Believed Killed in Action, Now Presumed Killed in Action**  
 103420 Lt. B. S. Thornhill-Cook.

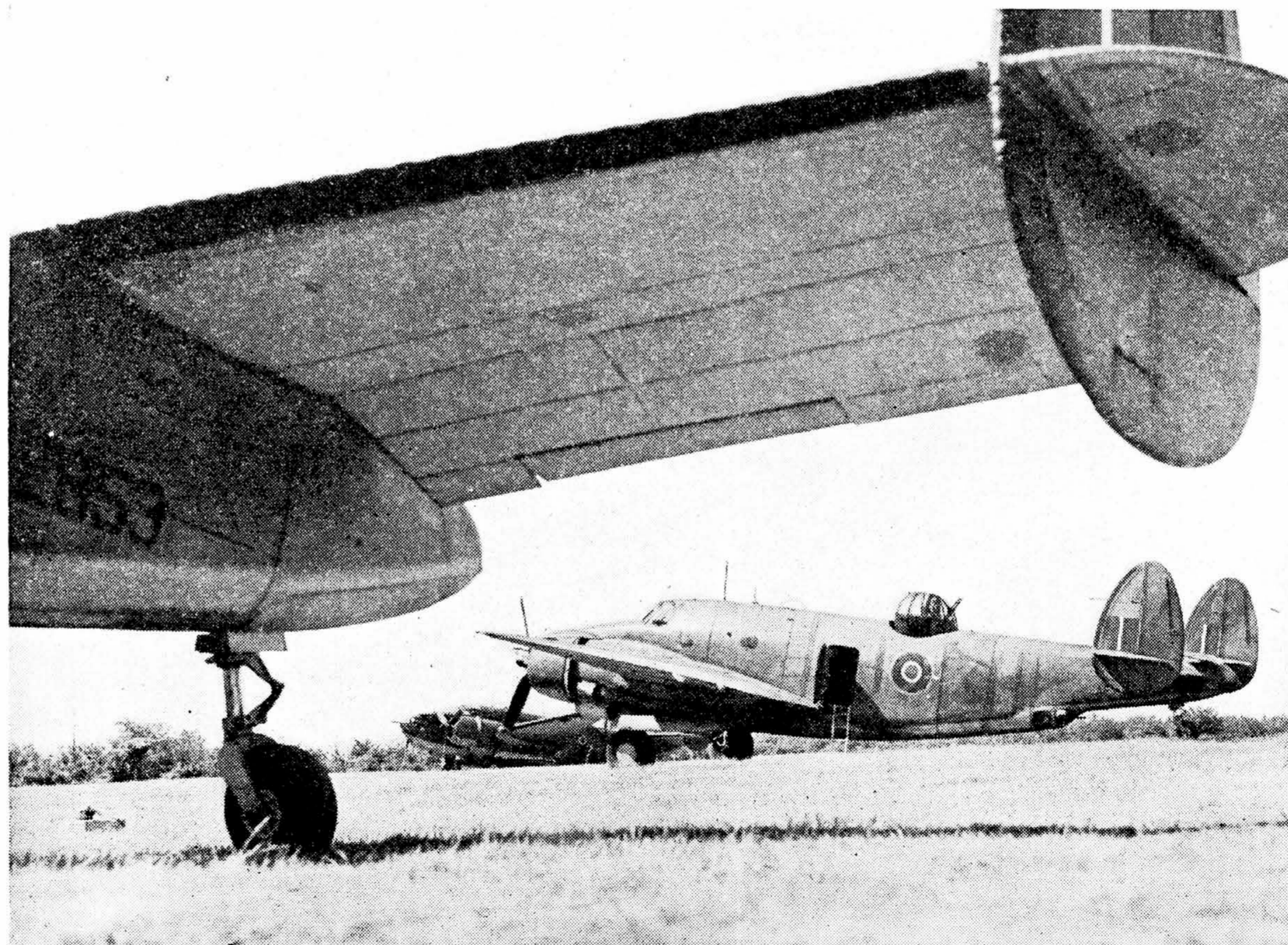
**Previously Reported Missing, Now Presumed Killed in Action**  
 103307 Capt. D. Cobbedick.  
 94433 2nd Lt. P. C. De-Meillon.  
 102470 Air Sgt. S. R. Galloway.  
 103979 Lt. R. E. Jackson.  
 102524 Air Sgt. A. Kahn.  
 202945 Capt. R. Pare.  
 103671 2nd Lt. C. C. P. Steyn.  
 94771 Lt. R. Cameron.  
 103327 Capt. J. P. Furstenburg.  
 205909 Air Sgt. P. L. Mathieu.

**Missing**  
 20577 Lt. P. M. Bown.  
 206055 Lt. W. Boyle.  
 211185 F/Sgt. R. K. Brown.  
 207150 F/Sgt. T. Jenkinson.  
 103677 Lt. D. Segal.

**INDIAN AIR FORCE**

**Killed on Active Service**  
 P/O M. K. Chand.

**MEDIUM WEIGHT.—A Lockheed Vega Ventura I bomber, many of which are now raiding enemy territory. They are armed with eight or ten machine-guns and carry more than a ton of bombs.**



## ROYAL AIR FORCE AWARDS

HIS MAJESTY THE KING has approved the following awards for gallantry and devotion to duty during air operations including bombing attacks on Jena and Wuppertal:—

### Bar to Distinguished Service Order

Act. Wing Commander R. W. Reynolds, D.S.O., D.F.C.—No. 139 Squadron.

### Distinguished Service Order

Act. Squadron Leader W. W. Blessing, D.F.C., R.A.A.F.—No. 105 Squadron.

Act. Flight Lieutenant E. B. Sismore, D.F.C., R.A.F.V.R.—No. 139 Squadron.

### Bar to Distinguished Flying Cross

Squadron Leader J. L. Beck, D.F.C., R.A.F.O.—No. 159 Squadron.

Act. Flight Lieutenant D. W. McCormack, D.F.C., R.A.A.F.—No. 615 Squadron.

### Distinguished Flying Cross

Wing Commander G. A. V. Clayton—No. 240 Squadron.

Act. Squadron Leader J. M. O. Dyer—No. 159 Squadron.

Act. Squadron Leader A. E. Houseman, R.A.F.V.R.—No. 2 Squadron.

Major S. F. Du Toit, S.A.A.F.—No. 4 (S.A.A.F.) Squadron.

Flight Lieutenant George Kenning—No. 2 Squadron.

Act. Flight Lieutenant P. G. Louis, D.F.M., R.A.F.V.R.—No. 165 Squadron.

Act. Flight Lieutenant T. S. W. Towell, D.F.M.—No. 159 Squadron.

Act. Flight Lieutenant G. W. Williams, R.A.F.V.R.—No. 70 Squadron.

Flying Officer G. W. Clarke-Hall, R.A.A.F.—No. 14 Squadron.

Flying Officer W. L. Dobbin, R.C.A.F.—No. 104 Squadron.

Flying Officer Edmund Donovan, R.A.F.V.R.—No. 14 Squadron.

Flying Officer F. M. Fisher—No. 105 Squadron.

Flying Officer L. C. Gosling, R.C.A.F.—No. 229 Squadron.

Flying Officer Jack Jackman, R.A.F.V.R.—No. 162 Squadron.

Flying Officer R. W. Laphorne, R.A.A.F.—No. 14 Squadron.

Flying Officer A. W. Proctor, R.A.A.F.—No. 59 Squadron.

Lieutenant R. F. Percival, S.A.A.F.—No. 12 (S.A.A.F.) Squadron.

Pilot Officer C. S. Marceau.

Pilot Officer H. C. Ridley, R.A.F.V.R.—No. 14 Squadron.

Pilot Officer L. A. Trigg, R.N.Z.A.F.—No. 200 Squadron.

Warrant Officer B. C. Coates, D.F.M.—No. 159 Squadron.

### Military Medal

Sergeant T. E. Hewitt, R.A.A.F.—No. 150 Squadron.

### Distinguished Flying Medal

Flight Sergeant R. T. B. Doak.

Flight Sergeant Leslie Hogan—No. 105 Squadron.

Flight Sergeant Harry Reid—No. 159 Squadron.

Flight Sergeant R. L. Sommerville, R.N.Z.A.F.—No. 104 Squadron.

Flight Sergeant Jack Staton—No. 159 Squadron.

Sergeant W. T. Gunn, R.N.Z.A.F.—No. 159 Squadron.

Sergeant L. P. Hiscocks—No. 61 Squadron.  
 Sergeant Peter Holt—No. 199 Squadron.  
 Sergeant L. M. Holtby, R.C.A.F.—No. 426 (R.C.A.F.) Squadron.  
 Sergeant H. H. Jenkins—No. 97 Squadron.  
 Sergeant A. M. Jones—No. 115 Squadron.  
 Sergeant C. A. Jones—No. 97 Squadron.  
 Sergeant F. J. Jones—No. 57 Squadron.  
 Sergeant E. W. Keene—No. 57 Squadron.  
 Sergeant R. G. T. Kellow, R.A.A.F.—No. 50 Squadron.  
 Sergeant J. D. Kilgallon—No. 18 Squadron.  
 Sergeant A. L. Langworthy—No. 10 Squadron.  
 Sergeant (Now Pilot Officer) J. H. Lascelles—No. 78 Squadron.  
 Sergeant R. H. Lawton, R.A.A.F.—No. 50 Squadron.  
 Sergeant P. J. Lyles—No. 50 Squadron.  
 Sergeant John McCrossan—No. 50 Squadron.  
 Sergeant (Now Pilot Officer) William McDonald—No. 214 Squadron.  
 Sergeant G. O. McGregor—No. 106 Squadron.  
 Sergeant John Marriott—No. 50 Squadron.  
 Sergeant William Mather—No. 97 Squadron.  
 Sergeant A. A. Matheson, R.N.Z.A.F.—No. 218 Squadron.  
 Sergeant (Now Pilot Officer) M. H. Middleton—No. 97 Squadron.  
 Sergeant (Now Pilot Officer) E. R. Mitchell.  
 Sergeant R. G. Musgrave.  
 Sergeant S. J. Nancekivell—No. 9 Squadron.  
 Sergeant V. H. New—No. 166 Squadron.  
 Sergeant S. R. Oldridge—No. 50 Squadron.  
 Sergeant (Now Pilot Officer) I. M. Pettigrew—No. 61 Squadron.  
 Sergeant G. A. Phillips—No. 50 Squadron.  
 Sergeant J. P. Pike—No. 115 Squadron.  
 Sergeant G. V. Price—No. 50 Squadron.  
 Sergeant J. B. Price, R.N.Z.A.F.—No. 57 Squadron.  
 Sergeant Kenneth Pudsey—No. 115 Squadron.  
 Sergeant J. H. Rank—No. 77 Squadron.  
 Sergeant J. J. N. Rivard, R.C.A.F.—No. 425 (R.C.A.F.) Squadron.  
 Sergeant E. W. Rochford—No. 159 Squadron.  
 Sergeant J. R. Rodgers, R.N.Z.A.F.—No. 115 Squadron.  
 Sergeant (Now Pilot Officer) W. G. Ross—No. 106 Squadron.  
 Sergeant Francis Sayles—No. 166 Squadron.  
 Sergeant C. H. Shepherd—No. 97 Squadron.  
 Sergeant C. A. Smith—No. 166 Squadron.  
 Sergeant (Now Pilot Officer) A. O. Stafford—No. 97 Squadron.  
 Sergeant G. D. Taylor—No. 113 Squadron.  
 Sergeant D. F. C. Tester—No. 10 Squadron.  
 Sergeant W. B. Townley, R.C.A.F.—No. 97 Squadron.  
 Sergeant J. A. Walker—No. 106 Squadron.  
 Sergeant W. A. Watson—No. 90 Squadron.  
 Sergeant G. I. Williams—No. 97 Squadron.  
 Sergeant J. L. T. Williams, R.N.Z.A.F.—No. 57 Squadron.  
 Sergeant J. M. M. Williams, R.C.A.F.—No. 77 Squadron.  
 Sergeant J. T. Wilkinson—No. 50 Squadron.

## Extracts from The London Gazette

Air Ministry, March 19, 1943.

### ROYAL AIR FORCE VOLUNTEER RESERVE

GENERAL DUTIES BRANCH.—Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Jan.: R. Brown, D. W. Cairns, D.F.C., H. Stewart, P. E. Davison, W. J. A. Nicholson, R. Stitt, F. H. Tiplady, G. B. Williams, Feb.: L. H. Abbott, R. Black, E. F. Campbell, K. C. Earl, R. Haynes, D. F. Holmes, B. N. Perry, C. G. Rodda, F. B. Rossiter, B. J. Staniland, B. J. Ward, E. G. Willis, A. H. Briscoe, D. Ibbotson, D.F.C., D. L. Jones, J. Coles, D. M. Grant, A. E. Clark, W. A. G. Gallienne, N. F. Turner, D. M. A. Banton, C. F. Bedell, D. H. Carey, D. H. Clayton-Wright, E. A. Clerk, J. Culliford, J. A. Flood, G. A. J. Frazier-Hollins, A. F. Gobbie, B. E. McLaughlin, H. Reed, R. G. W. Strange, W. F. Torrome, T. Vickers, G. J. Whitfield, A. N. Adams, J. T. Anderson, W. E. D. Bell, A. V. Crawford, D. W. Finlay, R. A. Hodgson, J. C. Johnson, R. J. Johnson, B. McM. Laing, W. E. Micklewright, H. Morrison, H. A. Nock, A. E. Oldham, H. M. S. Pattullo, R. W. Pritchard, A. M. Rees, J. E. Rigby, W. F. Snell, J. B. Thompson, L. Waite, P. G. R. Weeks, F. J. Wright, G. G. Adams, F. G. Berg, F. G. Boswell, A. H. Boyle, J. A. Hall, S. R. Irwin, A. H. Jackson, C. F. Read, A. E. Smith, T. A. McF. Whiteman, D. R. Woodroffe, W. Biggin, A. Birks, A. Crawford, K. A. Mooring, L. C. Raw, H. E. Smith, E. T. Taylor, W. J. T. Kinniburgh-Boyd, R. R. McNair-Taylor, T. W. Rowland, J. A. Wainwright, G. A. Bissett, J. Craven, M. W. Dale, K. M. Steven, A. W. Gamage, L. W. Crum, D. C. Elder, E. F. H. Heard, H. G. Innes, D. Makin, L. C. J. Martin, L. Meakin, B. R. Mullinger, R. Parkinson, G. S. Smith, A. Trott, J. A. Walton, J. H. Wright, T. V. Arden, A. J. Horobin, S. E. J. Jones, G. J. Monckton, J. G. Moore, T. Royds, J. D. Harris, F. S. Reade, A. J. Baldwin, L. Foulds, L. Hewitt, J. W. Hott, J. T. Taylor, M. H. Ward, R. A. L. Williams, W. J. Edwards, J. E. Peatfield, C. T. Reid, W. C. T. Bray, R. L. Butt, G. M. Gallagher, F. Hill, R. T. Boyce, D. J. Farr, J. Monaghan, E. L. R. Pottier, F. A. Saunders, D. Watson, L. F. Wise, L. G. Goodey, N. E. Beattie, R. R. J. Thomas, A. W. Blakeman, R. E. Griffin, D.F.M., G. R. Sharp, L. F. Brewer, C. D. Farmer, A. L. D. Jayes, D. Luker, W. J. Blackett, J. E. Blair, D.F.M., D. Brown, R. N. Hamer, J. Lipton, H. E. Milborne, J. M. Stewart, W. D. Austin, R. H. N. Bell, J. J. Berg, E. R. Durant, I. G.

Evans, F. E. Fielding, B. J. Fox, A. L. George, R. L. Gouze, A. Grant, K. R. Guiton, C. Hagues, D. B. F. Heslop, J. Honniball, C. B. Hooper, J. Kellett, L. Y. Larsen, A.F.M., P. H. Liddle, T. McCall, R. Marriott, J. H. Medlow, W. H. Moulds, J. R. Simms, G. F. Trott, J. Turton, F. L. Wallace, J. M. Warren, F. G. Wodehouse, V. Wood, K. G. Kenward, R. Logan, T. W. Munroe, A. C. Palmer, Mar.: G. W. Fairweather, H. S. Newton, TECHNICAL BRANCH.—Flt. Lt. T. C. Carter to be Sqn. Ldr. (temp.). Jan. (Sen. Dec. 1, 1941.) Flg. Offs. to be Flt. Lts. (temp.):—Jan.: F. Jullion (Sen. June 1, 1942), J. N. C. Law, H. F. Blackmore, D. C. R. Cerely, D. W. Densham, G. S. Thomas.

The folg. are granted the rank of Flt. Lt. (war subs.):—Flt. Lts. (temp.): Jan.: A. E. Jaquemet, H. F. Payne. Flg. Offs.: R. R. Poole, R. W. Carley.

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Sept., 1942: E. R. S. Smethurst (Sen. Aug. 13, 1942). Oct., 1942: A. Laws, E. E. Simpkins (Sen. July 10, 1942), L. Berryman. Nov., 1942: P. Batterley, L. Cotton, W. E. Marrian, C. B. Proudlove, F. J. Gibney, D. N. Banerjee, H. Jones, F. Turner. Dec., 1942: R. D. Collins, A. Welsh, T. W. Atkinson. Jan.: W. A. Reid, H. J. Kostromin, D. James, T. F. Rayner, A. E. May, A. G. I. Oressell, R. F. Vigurs, R. Smith, D. A. Webb. Feb.: P. F. Halfhide, T. E. Holman, J. D. O'N. Power, H. J. E. Shaylor, F. J. Ott. Mar.: G. J. Bond, A. Inglis, F. Edmunds.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—June, 1942: N. Davis. July, 1942: J. Hodgson (Sen. June 28, 1942). Oct., 1942: H. Pettingaie.

BALLOON BRANCH.—Sqn. Ldr. (temp.) M. V. Molony is granted the rank of Sqn. Ldr. (war subs.) Jan.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—The folg. are granted the rank of Sqn. Ldr. (war subs.):—Sqn. Ldrs. (temp.): Jan.: A. E. Eaton, D.S.O., A. H. Beach, O.B.E., F. W. Brown, H. L. Rudd, C. G. L. Bowley, H. J. Tanburn. Flt. Lts.: A. P. Thompson, O.B.E., R. E. Green-smith. Feb.: M. J. C. Allom.

Hon. Flt. Lt. I. G. D. de Teissier to be hon. Sqn. Ldr. Feb.

The folg. are granted the rank of Flt. Lt. (war subs.):—Flt. Lts. (temp.): Jan.: H. Chambers, A. S. Clark, S. M. Krusin, S. C. Parker, J. H. Bastable, B. A. R. Shore, W. R. Norton, M. J. Fenwick, K. Broadley, K. S. Wood, D. G. Liddle, L. F. A. Green, J. E. Whitehead, C. J. Syred,

L. T. Gygax, P. A. X. Gaugain, L. F. Hodges, H. W. Scarnell, M.M., S. Beeby, L. H. Humpherson, C. H. Beech, G. E. Hansen, R. W. Gosse, R. A. Coleman, Flg. Offs.: C. H. S. Blatch, C. J. D. Davis, D. C. Way, W. E. Symonds, D. W. A. Barton.

Flg. Offs. to be Flt. Lts. (temp.):—Jan.: G. W. Bain, P. M. Scorer, H. M. Elliot, B. G. Barnett, J. J. Alexandroff, V. O. Slesser, G. B. Graham, J. H. Welsey, E. B. Eddy, V. J. R. D. Prendergast, J. H. Tonkin, F. A. Rowe, J. C. Gibbs.

Hon. Flg. Off. D. E. Davies to be hon. Flt. Lt. Feb.

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Dec., 1941: G. H. Costigan. June, 1942: B. Ward. Sept., 1942: E. H. Powley, C. R. Trelease, N. E. Bishop (Sen. July 22, 1942). Oct., 1942: G. F. Haseler, D. G. Hughes, L. R. Meredith, N. W. Scouler, G. Ramage, J. G. McCombie, E. W. Phillips, H. G. Armstrong, J. Wade. Nov., 1942: P. B. Gibbs, T. A. Penn-Benkeley, P. D'Arson. Dec., 1942: J. D. D. Watt, C. W. W. Roche. Jan.: H. A. Brown, M. E. Davies, E. J. Groves (Sen. Nov. 10, 1942), G. C. Arnold, A. S. E. Dale, W. G. Sweet (Sen. Nov. 26, 1942), D. R. Byfield, W. L. Page, W. J. Philpot, J. Webster, J. T. Gerrish, T. M. Lawman, G. M. Smith, H. A. Lamb, W. T. Baldwin, W. L. Cooper, M. B. Denning, T. A. Mellor, C. H. R. Colman. Feb.: E. Williams (Sen. Feb. 10), H. G. Burden, W. W. Crellin, M. H. W. Davey, R. R. W. Reid, F. L. Morton, J. B. Scammell (Sen. Jan. 17), Mar.: W. G. Goodall, R. V. Green, H. T. Hall, E. H. Symmons, A. R. Purie, W. W. Perkins, F. L. Preston, S. H. Robinson, O. State, D. B. Thompson, R. H. Beckett, W. H. Castle, J. R. Elliott, W. K. Hunt, R. Sellis, R. J. Rudi, A. E. Sheppard (Sen. Jan. 29), W. R. L. Edwards, R. R. Eyre, J. W. McC. Gibb, R. S. F. Jefferies, R. Price, F. E. Thomas.

The notifi. of Dec. 4, 1942, concern. Plt. Off. G. C. Arnold is cancelled.

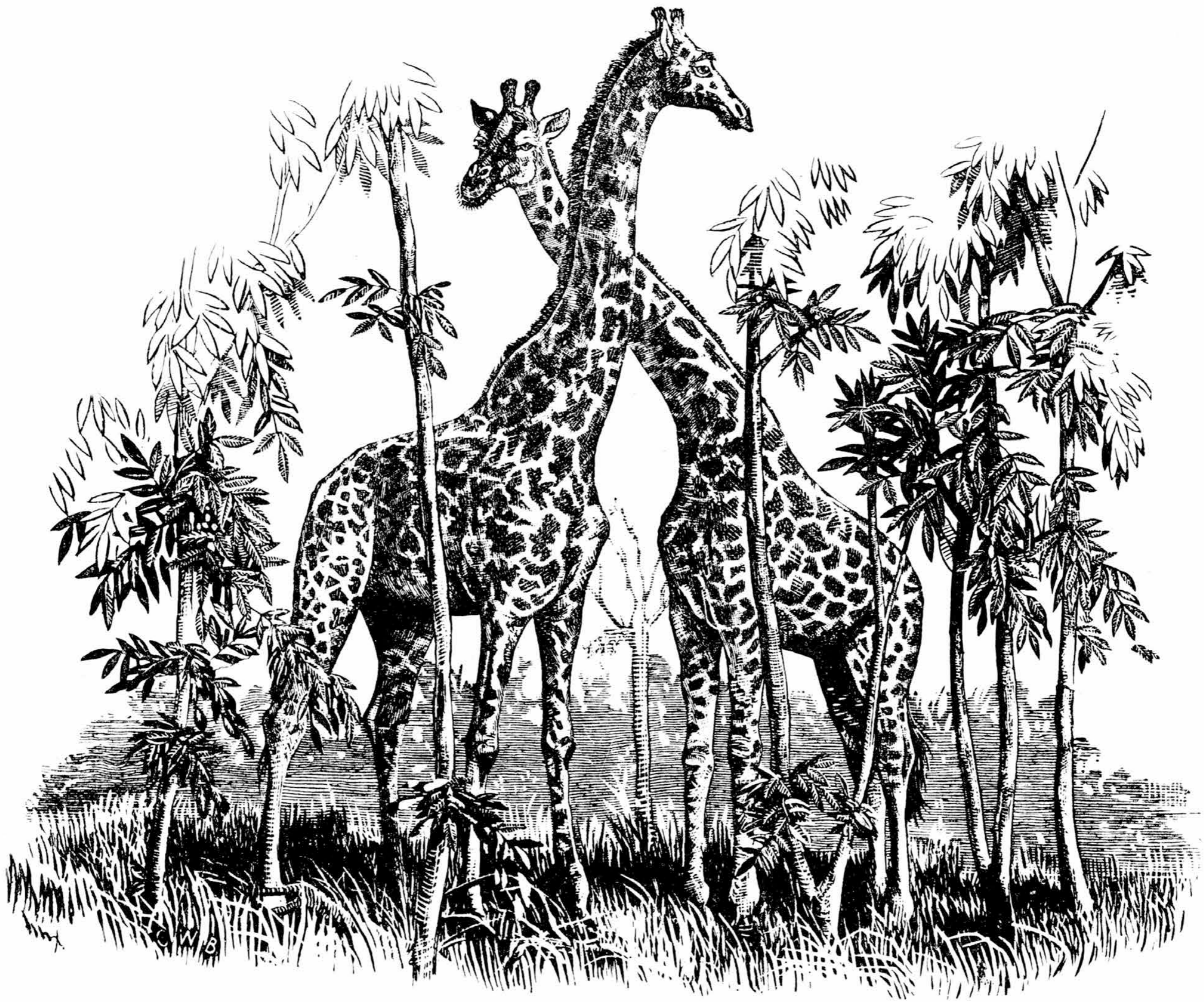
The notifi. of Dec. 8, 1942, concern. Plt. Off. J. M. Hewitt is cancelled.

In notifi. of Feb. 5, for W. HEN read S. C. Hill.

In notifi. of Nov. 13, 1942, for E. B. Townsend-Dyson read E. B. Townsend-Dyson.

In notifi. of Jan. 29, for J. R. Coad read J. W. Coad.

In notifi. of July 10, 1942, concern. G. C. Rank, for Rank read Rand.



## PROTECTION

Thanks to plenty of neck and a keen eye at the top of it the giraffe is usually off to a good start when danger threatens. Experienced lions report that, when cornered, the tall fellow uses his feet somewhat unfairly, and kicks to kill. A cunningly dappled coat, however, is the

giraffe's best protection—it keeps him screened from possible attack. Similarly the protection Titanine gives against rust, corrosion, rot and decay is essential to most industrial materials. Remember—*protecting the surface preserves the rest.*

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**METEOROLOGICAL BRANCH.**—Flt. Lt. T. N. S. Harrower to be Sqn. Ldr. (temp.) Jan.  
Plt. Off. (prob.) B. A. Coppin to be Flg. Off. on prob. (war subs.) Oct., 1942.

**EQUIPMENT BRANCH.**—Sqn. Ldr. (temp.) F. J. Smith is granted the rank of Sqn. Ldr. (war subs.) Jan.

The folg. are granted the rank of Flt. Lt. (war subs.):—Flt. Lts. (temp.): Jan.: A. E. Sansom, R. E. Bonass, L. H. Wesson. Flg. Offs.: J. G. Bridges, H. M. D. Davis.

Flg. Offs. to be Flt. Lts. (temp.):—Jan.: D. W. Kirk, G. R. Savage.

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Oct., 1942: K. J. H. Vinall, A. Andrews. Jan.: N. M. Dow, E. W. Brown. Mar.: G. Carruthers, F. N. Blundell.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—Nov., 1942: A. A. Zara (Sen. Aug. 24, 1942). E. D. Melrose (Sen. Sept. 16, 1942), R. D. Howells. Jan.: G. E. Sears. Feb.: J. B. Graham.

**ACCOUNTANT BRANCH.**—The folg. are granted the rank of Flt. Lt. (war subs.):—Flt. Lts. (temp.): Jan.: W. H. B. Carey, C. W. Masters, E. Telfer. Flg. Off.: G. F. Lea.

Flg. Offs. to be Flt. Lts. (temp.):—Jan.: A. D. G. Jordan, G. C. Salisbury, C. Thomas.

Plt. Off. (prob.) H. Hodsdon confmd. in appt. June, 1942, and to be Flg. Off. (war subs.) Aug., 1942. (Subs. for notfn. of Dec. 11, 1942.)

Act. Plt. Off. (prob.) H. Hodsdon to be Plt. Off. (prob.) Aug., 1941.

**MEDICAL BRANCH.**—Flg. Offs. to be Flt. Lts. (war subs.):—Jan. E. Rosenberg, M.R.C.S., I.R.C.P.; R. McK. Miller, M.B., B.Ch., M.R.C.P., M.R.C.S.; E. Ridehalgh, M.B., Ch.B., M.R.C.S., I.R.C.P. Feb.: J. Harper, M.B., Ch.B.; D. A. Ogden, L.M.S.S.A.; W. W. Davey, M.D., Ch.B., F.R.C.S.; W. D. H. McFarland, M.B., B.Ch. Mar.: E. D. Robson, M.B., B.S.

**DENTAL BRANCH.**—Flg. Offs. to be Flt. Lts. (war subs.):—July, 1942: C. A. W. Archer, L.D.S. Nov., 1942: R. S. Jones, L.D.S. Jan.: G. C. Brattle, L.D.S.; D. J. Bull, L.D.S.; W. L. Sutcliffe-Hey, L.D.S. Feb.: N. E. B. Tinley, L.D.S.; J. E. Jones, L.D.S.

**ROYAL AIR FORCE REGIMENT.**—Flg. Off. L. M. Stuart to be Flt. Lt. (temp.) Jan.

Plt. Off. (prob.) to be Flg. Off. on prob. (war subs.):—Nov., 1941: R. L. Smith. Aug., 1942: P. S. Howieson (Sen. July 27, 1942), H. W. Leach (Sen. July 19, 1942). Oct., 1942: A. Raine. Nov., 1942: S. Ward. Dec., 1942: L. C. Moynihan, N. Robson, D. L. Smith. Feb.: R. H. Barnes, H. Bell, J. A. Gee, S. J. Haytor, J. H. Howell, G. H. E. Hutton, R. H. Johnson, R. M. W. McKenzie, F. Newbon, M. B. Reynolds-Graham, G. D. E. Crouch.

**AUXILIARY AIR FORCE**

**GENERAL DUTIES BRANCH.**—Sqn. Ldrs. (temp.) granted the rank of Sqn. Ldr. (war subs.):—Jan.: T. N. Hayes, D.F.C., J. Alexander, D.F.C., W. L. Drummond.

**TECHNICAL BRANCH.**—Flg. Off. Y. J. Kirkpatrick to be Flt. Lt. (temp.) Jan.

**ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.**—Flt. Lt. (temp.) R. G. Booth is granted the rank of Sqn. Ldr. (war subs.) Jan.

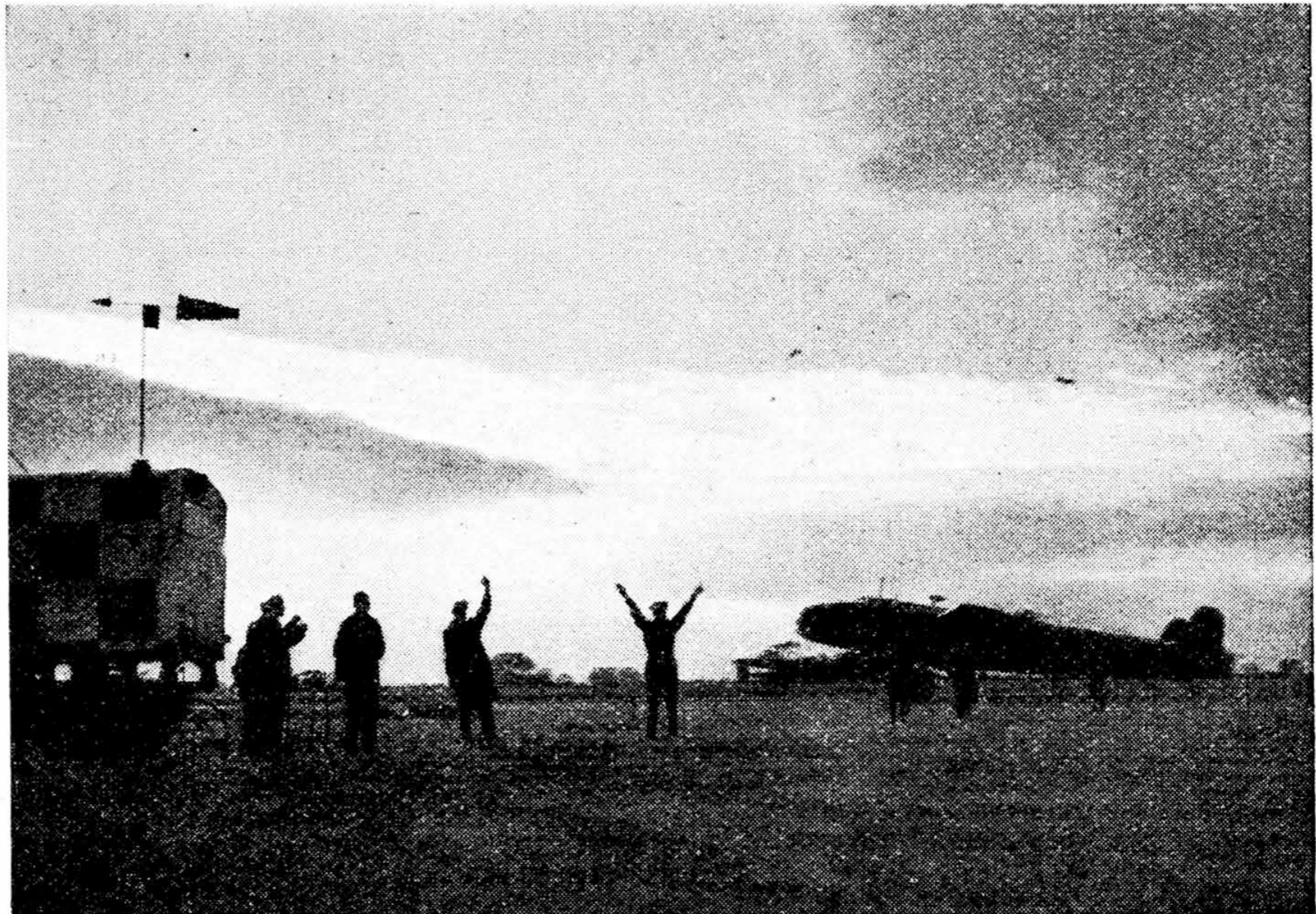
Flt. Lt. (temp.) K. F. Berry is granted the rank of Flt. Lt. (war subs.) Jan.

**ACCOUNTANT BRANCH.**—Flt. Lt. (temp.) I. H. Borland is granted the rank of Flt. Lt. (war subs.) Jan.

**WOMEN'S FORCES**

Employed with the Medical Branch of the Royal Air Force:—Medical officers with the rank of Flg. Off. to be Flt. Lts. (war subs.): Jan.: P. E. Gaffikin, M.B., Ch.B.; K. M. Poad, M.R.C.S., I.R.C.P. Feb.: J. Cleland, M.B., B.S., M.R.C.S., I.R.C.P.; E. A. Riddell, M.B., Ch.B. Jan.: W. I. Watson, M.B., Ch.B. (Subs. for notfn. Feb. 26.)

**WOMEN'S AUXILIARY AIR FORCE.**—Asst. Sec. Offs. (prob.) to be Sec. Offs. on prob. (war subs.):—July, 1942: C. Duval. Sept., 1942: D. V. Guthrie. Oct., 1942: M. Maxwell, F. M. Orchard, E. M. Shilling, J. M. White. Dec., 1942: E. R. Vaughan-Kimber. Jan.: S. G. Halls. Feb.: E. M. Sainsbury, H. E. Selkirk-Wells, I. Bamford-Cook, C. M. Canning, M. T. Chambers, M. Clarkson, H. F. J. Dawson, D. G. Doudney, R. Jackson, V. E. Glazier, J. G. Gleave, J. M. Haswell, J. M. A. Heck, D. E. Holey, E. A. Horn, J. M. Howes, B. Hughes, M. D. Hutton, G. M. Jarrett, J. M. Jeffers, J. E. Kenyon, A. D. Kidd, M. Lang, D. North, E. M. Palmer, P. R. Kelly, R. M. Pugh, J. B. Quick, M. M. L. G. Pawsey, E. Smorthwaite, M. N. Smyth, D. E. Sutton, J. M. Thompson, M. J. Thornton, E. S. G. Townsend, E. M. Tucker, J. K. Wallond, O. C. Ward, M. G. R. Wise, J. L. Wood, P. G. Wiles, P. S. B. Holloway, W. M. Lund Linton, C. V. Hallum, D. M. Atkinson, E. J. Baker, E. L. Barsham, E. M. Bawn, G. J. Birin, J. H. M. Blakeney, J. I. Boyd, H. E. Cade, A. B. Carter, E. V. Cass, K. R. Clarke, O. E. Collison, G. B. Comber, B. Davoren, G. Deans, N. L. Deans, F. I. Dickinson, J. F. Dyke, C. Murray, L. A. Fox, M. Freeman, J. E. Graesser-Thomas, M. R. Green, D. E. Griffiths, E. N. Hamilton, E. J. Hanson, I. M. Hendry, E. J. Hutt, E. M. Ingham, E. Jones, S. M. Kerridge, A. M. Lambie, E. M. Lockwood, K. A. M. McLannahan, J. D. McLoughlin, V. M. Mathews, H. A. Miles, B. M. Moore, S. Morgan, V. Morris, L. M. Murphy, E. M. Niblock, B. W. Parker, N. G. Payne, A. Penfold, G. Plunkett, C. H. Powell, A. D. Read, F. M. Redman, E. B. Rigden, E. M. Shaughnessy, M. J. Shaw, B. G. Smith, C. M. Stowell, G. K. Suttle, M. B. Sweetenham, B. Tupman, E. G. Veale, P. M. Wallace, B. M. Warren, D. Webb, F. S. Weir, E. M. Wellford, B. E. Curnow, J. B. Martin, E. R. Addison, J. Balderston, N. J. Beare, D. Bell, Y. M. Carr, J. D. Clapham, E. S. Conning, W. Dawson, K. E. Goad, W. S. Grice, E. P. Hare, E. M. A. Henchy, M. Hinch, M. Hockenhill, E. Holmes, P. M. Howitt, G. H. Jenkins, D. E. P. Johnson, L. A. Keeble, J. Kirby, E. E. Leatham, E. M. Liddane, L. I. Lounsbury, P. Geary, R. S. March, M. C. Marks, M. R. Mather, K. M. Matson, J. M. Bomford, D. Mustart, C. J. Northover, C. J. Palmer-Warren, M. D. Pringle, F. M. L. Redlich, J. E. Richardson, S. A. Sadd.



**DAWN RETURN.**—A Handley Page Halifax II, Series 1, being signalled to its dispersal point on return from a raid on the Le Creusot armament works.

M. F. Saker, R. A. Sandford, J. Shoesmith, J. Sinclair, G. E. Skeats, J. Steedman, M. J. Solly, J. M. Stewart, M. K. Sykes, M. Walker, J. West, M. M. West, G. E. Wilson, P. M. W. Wilson, E. M. Withers, B. W. Wright, M. P. Wright, M. H. Albrow, N. J. Barrett, M. J. Bayle, W. Kennedy, R. A. Birchall, W. Brearley, I. Brignall, M. A. Cayzer, O. S. Coote, R. M. Dent, E. K. V. Duncan, I. M. Edwards, F. M. Fair, G. M. Feeny, G. M. George, J. M. Ginn, D. A. Goddard, M. Goldsmith, D. S. Greaves, A. W. H. Greene, L. M. Harland, M. I. P. Herbert, I. M. Hibbert, J. D. Hollington, P. Hopwood, M. D. Humfress, H. J. Hyslop, P. Kepple, B. Laurier, U. Stevenson, M. H. B. Lindsay-Young, D. M. Lockton, B. N. Lockyer, I. M. McCulloch, R. M. M. McCutcheon, I. McDowall, H. D. McGregor, H. MacNab, E. T. Masters, B. Morris, L. R. Neal, F. G. Newsome, V. Nicholson, G. T. Nicoll, M. L. Ogier, Q. M. Penrice, C. M. Pentland, S. Pope, M. Ashby, P. H. Russell, J. D. Sargisson, U. M. Skelton, R. N. Skull, J. M. Smardon, P. M. Sugden, K. W. Thomas, P. M. Vickers, S. P. M. Whitworth, B. E. Wilson, J. M. Wilson, E. C. Powles, M. L. Annett, D. I. Ashworth, J. N. O. Barnes, M. E. Barratt, H. M. M. Bell, L. E. Bingham, E. Broadbent-Cohen, I. Clifford, J. M. Crouch, S. M. Dalton, O. M. Fortescue, J. B. Fowler, K. E. Garnham, E. J. Gould, L. K. Gowing, J. I. S. Grant, G. M. R. Guinness, J. I. M. Healy, A. D. Holloway, L. E. M. Johnstone, M. P. Jordan, M. J. Knights-Whittome, S. M. Latham, D. A. Moss, E. S. Murray, A. L. M. Neal, M. E. Parkinson, M. A. C. Peacock, E. M. Price, P. H. F. Rickett, M. J. Robinson, M. A. Rowbotham, E. E. Saunders, D. M. Seeley, J. E. Simmons, A. M. Smallwood, J. E. Thomas, J. M. Weller, M. J. Whitehead, D. S. C. Wilson, L. M. Windsor, J. E. Lewis, M. V. L. Tedder Shepherd, M. Bellamy.

**AMENDMENTS.**—In notfn. of Mar. 5, for E. I. Vander Byl read E. L. Vander Byl, and for W. E. Good read M. E. Goad.

*Air Ministry, March 23, 1943.*

**ROYAL AIR FORCE**

**GENERAL DUTIES BRANCH.**—To be Plt. Offs. (temp.) on being employed with the R.A.F. Feb.: D. F. R. Evans (temp. Capt. Welch R.), W. I. W. Hunter (temp. Capt., Cameronians), Frank Kenning (temp. Capt., R.E.M.E.), E. H. Butcher (Lt., R.A.C.), J. M. Foster (Lt., R.A.), B. H. Lepine-Williams (Lt., R.A.), A. B. Rae (Lt., R. Fus.), G. D. Sykes (Lt., R.A.), R. C. W. Togwell (Lt., R.W.K.).

To be Plt. Offs. on prob. (emergency):—Wt. Off.: Nov., 1942: J. W. Smith. Flt. Sgts.: Nov., 1942: J. V. Tyler, C. G. Key. Dec., 1942: N. E. Bohn, D.F.M., Harold Sculthorpe. Jan.: G. A. A. Witherick, D.F.M., Leonard Podger. Temp. Flt. Sgt.: July, 1942: E. I. Williams. Cpls.: Oct., 1942: M. F. Culling, D. B. Jones. Dec., 1942: P. F. Carlisle. Temp. Opl.: Dec., 1942: C. A. Owens.

Flt. Lt. R. M. D. Hall, D.F.C., is transf. to Admin. and Spec. Duties Br. Mar.

Plt. Offs. relinquish their temp. comms. on return to Army duty:—Jan.: H. H. C. Boulton, Lt., I. Gds. Feb.: W. H. Buchanan, Lt., R.A., A. J. Cracknell, Lt., R.A., T. A. Wilson, Lt., K.R.R.C., D. Lane, Lt., R.A.C., E. A. Rogers, Lt., R.A., G. W. Silver, Lt., R. Berks. R., D. R. Eider, M.C., Lt., Black Watch.

Flg. Off. A. G. Boulton relinquishes his commn. on account of ill-health. Jan.

**TECHNICAL BRANCH.**—Act. Plt. Off. (prob.) N. G. Trehearne is transf. to the Admin. and Spec. Duties Br. Mar.

**AMENDMENTS.**—In notfn. of June 30, 1942, concern. Wt. Off. R. D. Carter, for Plt. Off. read Flg. Off.

In notfn. of Feb. 2, concern. Flt. Sgt. C. A.

Nicholson, for Nov. 26, 1942, read Dec. 3, 1942.

**ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.**—Plt. Off. (prob.) F. A. Robinson is transf. to the Tech. Br. Jan.

Flg. Off. J. C. G. Sarll takes rank and precedence as if his appt. as Flg. Off. bore date Aug. 29, 1940. Reduction from Oct. 5, 1942. (Subs. for notfn. of Dec. 29, 1942.)

**AMENDMENT.**—In notfn. of Jan. 27, 1942, concern. Wt. Off. W. Cope, for Plt. Off. read Flg. Off.

**EQUIPMENT BRANCH.**—In notfn. of June 16, 1942, concern. Wt. Off. F. W. Herbert, for Jan. 12, 1942, read Jan. 21, 1942.

**ROYAL AIR FORCE REGIMENT.**—To be Plt. Offs. on prob. (emergency):—Wt. Off. Jan.: A. H. Norris, Flt. Sgts.: H. H. Case, S. M. Clarke, C. H. Ellett, J. L. M. Stewart, T. H. Storey. Cpls.: W. A. Barnes, Phil Cooper, C. J. Bowgin.

**RESERVE OF AIR FORCE OFFICERS**

**GENERAL DUTIES BRANCH.**—To be transf. to the Admin. and Spec. Duties Br.:—Flt. Lts.: Mar.: B. G. Hooper, O. P. E. Williams.

Sqn. Ldr. R. H. Sleigh resigns his commn. Mar.

Sqn. Ldr. R. C. Graveley, G.C., is dismissed the Service by sentence of General Court Martial. Mar.

**ROYAL AIR FORCE VOLUNTEER RESERVE**

**GENERAL DUTIES BRANCH.**—To be Plt. Off. (emergency):—Aug., 1942: P. J. White.

To be Plt. Offs. on prob. (emergency):—Feb.: J. W. F. Triefnor. Wt. Offs.: Nov., 1942: Leonard King, G. A. Riddle, Robert Pienderleith, Dec., 1942: G. H. Capsey, A. H. Ford, C. H. Button. Jan.: G. D. Gamble, C. H. Ball, E. R. L. Birch. Temp. Wt. Offs.: Nov., 1942: Albert Stephenson, E. L. Chamberlain, A. G. G. Taylor.

Jan.: S. C. Smith, E. T. Cathcart-Gunnison. Act. Wt. Off.: Nov., 1942: K. W. Borycott, D.F.M. Flt. Sgts.: Sept., 1942: K. H. Brailsford. Oct., 1942: A. A. Smith, D. L. S. Wood, L. A. Sheil. Nov., 1942: F. H. W. Harrington, J. E. J. Waterhouse. Dec., 1942: A. O. Reynolds, E. A. Tennant, R. R. W. Peters, W. A. O. Whitworth, J. W. King, D.F.M., R. H. Bird, Edward Fenwicke-Clelland, B. W. Clarkson, E. L. Durant, D. R. D. Barritt, Cyril Bridge, Sabthianadhan Paul, D. B. Ross, A. E. Farrant.

Jan.: R. E. Cook, P. J. Temple, Stanley Willison, T. G. Ogle, A. V. W. Franklin, R. F. Marrack, F. W. Shepherd, James McDonald, Norman Smith, W. P. Griffiths, George Tusler, L. W. Curtis, Harold Sherwood, J. E. Goulden, T. H. Hamer, O. E. Bell, F. N. Acons, F. C. Barlow, A. G. Davies, E. R. Dredge, A. D. Powell, Jack Seward, S. I. Walters, S. C. Hubbard, D.F.M., E. V. Bridges, S. F. N. Neal, M. P. Salisbury-Rowswell, Gordon Arkley. Temp. Flt. Sgts.: Nov., 1942: E. W. Underwood, Norman Deakin, James Dodds, D.F.M. Dec., 1942: Anthony Auld, Sgts.: June, 1942: D. A. Wallis. July, 1942: I. E. Jones, A. J. A. Sherrott. Aug., 1942: A. J. A. Glasspool, F. L. Pitt, E. G. Carveth, A. M. Cook, J. H. White. Sept., 1942: John Boyd, B. E. T. Rostron, A. L. Andrews, M. G. Alderton. Oct., 1942: A. J. Lamb, H. I. Walmsley, R. V. Jones, T. I. Johnson, D. J. Stalker, G. W. Hallam, H. E. Peake, A. A. Toller. Nov., 1942: G. A. R. Millem, R. H. Johnson, Henry Deen, G. E. C. Norman, I. H. Perkins, F. J. Gunstone, D. J. Moore, F. B. Richardson, R. H. Jackson, K. J. Lusty. Dec., 1942: W. G. Ross, D. C. Usher, J. A. C. Pauley, George Buchanan, L. H. G. Coles, Joseph Millward, J. K. Rodger, G. N. Mann, Robert Vollum, W. A. McMullan, Edward Jary, D. D. W. Nabarro, D.C.M., A. J. Thompson, R. W. Toothill, D. G. Hallas, Tore Rickland, F. J. F. Haines, F. W. Lantsbery, C. A. Kershaw, H. G. Howard.

Jan.: G. R. Gibbings, E. L. Coles, W. L. Harlow, J. L. Langford, Wyndham Jones, C. J. Schulman, Edwin Orton, A. O. B. Weekes, L. A. Prickett, K. B. Robinson, C. C. Reeder, S. J. V. Johns, P. W. Manning, W. E. Wykes, John Mayson, C. F. Bond, C. A. Gilbey, G. M. M. L. de Meillac, Peter Crozier. Temp. Sgts.: Nov., 1942: C. E. Nokes, R. E. Lomax, J. F. Kennedy. Jan.: H. R. Holloway. Cpls.: Nov., 1942: F. G. Oliver, R. H. Mitchell. Dec., 1942: Thomas Ellis, D. F. Fordham, J. C. R. McCallum. Dec., 1942: A. N. Millar, E. N. W. Marsh. Ldg. Acm.: June, 1942: S. R. Vivian. July, 1942: W. R. Waugh, David Fuller. Aug., 1942: Norman Carr, S. E. Neville, J. D. Arthurell, F. J. Cartwright, S. G. Norris. Sept., 1942: J. F. Clare, R. H. Riding, James Slater, Edwin Stanley, C. J. Whiles, L. N. Williams. T. L. Ellis, L. N. W. Goldspink, A. J. S. Hodson, G. H. Jackson, B. N. Gedye, E. J. B. Hobsbawn, W. R. Hockey, J. B. Knight, Sydney Robinson. Oct., 1942: F. C. Barratt, Allan Brodie, V. L. Hyatt, J. F. Leleu, Ronald Stakes, A. T. Taylor, G. F. R. Green, E. W. F. Hughes, R. E. Hawkins, J. H. Horne, H. G. Hornsby, H. O. Dransfield, M. A. Guinane, K. T. S. Holmes, L. N. Smith, J. R. Jeffrey, G. F. Garland, S. I. Kennedy, J. R. Fisher, T. J. J. Lee. Nov., 1942: A. R. Adams, J. S. French, L. M. G. Ferguson, Stanley Hodgson, Walter Whitehouse, Andrew Carabott, I. C. Flack, Stanley Garside, K. P. Hill, D. C. Lendrum, James McClymont, R. J. Mead, J. S. Millington, A. W. Moore, D. O. Ahmed, L. G. Gooch, A. L. Crapper, Kenneth Stakes, J. P. Timmons, Colin Warburton, H. J. Pryor, C. N. West, E. W. Hardiman, Ronald Bailes, R. A. Giles, D. A. Bailey, J. B. Jarvis, L. T. Brooking, J. W. Downing, L. E. S. Seeney, L. J. Murphy, R. J. Robinson, A. H. Todd, N. F. Wood, H. T. Woolveridge. Dec., 1942: R. A. Sedgley, Ronald Sewell, F. McK. Morrison, M. J. R. Thom, D. G. Williams, E. W. Bailey, J. H. Burrough, A. V. Cormack, J. M. MacIver, P. R. Widgey, R. S. Wiseman, R. A. F. G. Clayphan, P. J. Ryan, R. A. S. Gillard, C. A. Ridgeway, T. A. Brown, L. J. Beecham, J. W. Bond, J. S. Campsie, Henry Davis, D. H. Downs, J. W. Henry, M. G. Crotty, E. W. Crisp, William Doughty, F. Y. Dunstan, G. F. Gawith, C. H. Mason, G. H. Radcliffe, J. G. Turner, J. T. N. Dovey, C. L. Reynolds, J. S. Peterkin, D. V. F. Bennett, Ivan Cureton-Jones, G. P. Mead, W. E. T. Bladen, A. H. Milward, D. E. Turnbull, A. A. Bowley, A. G. Meloy, David Scouler, A. H. Shorter, Norman Birtwistle, L. S. Price, S. G. Brown, M. A. Clifton, Anthony Ingram, E. A. Lickorish, D. W. Noad, G. D. Reen, J. R. Williams, Eric Harding, Peter Miller, James Monroe, W. E. Quayle, W. G. Steele, F. J. Ward, J. E. M. Wingate. Jan.: T. E. Archard, F. G. Bell, J. D. Blencowe, A. W. Drage, R. A. C. Hammond, S. J. Payne, N. R. G. Pronger, Reginald Towner, R. G. Watkins, Gwyn Bevan, H. L. W. Cairns, J. C. Doherty, E. L. Hogg, S. G. Norris, S. G. Rogers.

To be transf. to the Admin. and Spec. Duties Br.—Flg. Offs.:—Feb.: A. E. Mulhall. Mar.: B. Hamilton. Flg. Offs. (prob.): J. H. Long, G. L. C. Cole. Plt. Offs. (prob.): E. S. Shepherd, R. A. Lanthorn.

Plt. Off. K. G. C. Eaves takes rank and precedence as if his appt. as Plt. Off. bore date Apr. 24, 1942. Reduction from Feb. 19.

Flg. Off. K. W. Dobson relinquishes his commn. on account of ill-health. Mar.

The commns. of the folg. Plt. Offs. (prob.) are terminated:—Mar.: J. H. F. James, G. L. H. Neale.

The notifs. of Dec. 29, 1942 concern, P. P. L. Wintersdorff and J. E. L. Rivalant are cancelled.

AMENDMENTS.—In notifi. of Jan. 26 concern, J. D. P. Masterman, for Masterman read Masterton.

In notifi. of Feb. 9 concern, E. B. Giorchino and E. G. Roberts, for Nov. 10 read Nov. 12.

In notifi. of Feb. 23 concern, G. W. Sharad, for Sharad read Sharp.

BALLOON BRANCH. Sqn Ldr. R. C. Collinswood resigns his commn. and retains his rank. Mar.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—G. G. Roberts is granted an hon. commn. as Flt. Lt. Mar.

To be Plt. Offs. on prob. (emergency):—Act. Flt. Sgt.: Dec., 1942: Albert Wainwright. Sgts.: Nov., 1942: A. J. Matheson. Dec., 1942: A. H. John, Joseph Reynolds. Cpls.: Nov., 1942: F. A. Richards, A. E. Turner, John Bannon, G. W. Ingham, A. H. B. O'Prey, James Hagan, R. R. W. McArthur, John Montgomery, D. A. Thomas, T. W. Thomas. Dec., 1942: H. I. Barker, Alfred Coates, Basil Hill, W. R. Jardine, A. R. Quinn, F. H. Hail, W. L. Whalley, D. A. Bregazzi, Gerard Culshaw, L. W. Newell, Arnold Shooter, C. A. Aldridge, Alec Daykin, Leslie Gibson, Edgar Murray. Jan.: J. W. Glanfield, J. A. Lee, Howard Layne, R. L. Rees. Ldg. Acm.: Oct., 1942: H. J. Boshier. Nov., 1942: A. F. Beckley, J. W. Philo, G. R. Samuel. Dec., 1942: W. C. Hall, F. A. Hendry, D. M. Smith, W. A. Freeman, James Bingham, A. J. Johnson. Jan.: Philip Leonard, Hunter Diack, H. S. Wass. Feb.: C. W. E. Cave. Acm. 1st Cl.: Nov., 1942: J. A. Jones, E. G. Perry, G. B. K. Small, F. J. Burford, W. H. Green. Dec., 1942: H. K. Dunn, W. N. Howells, J. O. Kirk, L. B. Wheeler, Graham Merrie, W. E. Lord, J. J. Coyle, John Darroch, B. B. Smith, John Smith, H. B. Walker. Jan.: Reginald Davies, Peter Rainey. Feb.: C. H. Jackson. Acm. 2nd Cl.: Nov., 1942: Sydney Walters, R. A. Harvey, A. J. B. Hutchings, J. R. Jones, William Lockhart, Wilson Heaviside, I. J. Jones, A. H. Sansom, John Cran, J. W. Harrower. Dec., 1942: James Donaghy, Laurence Turner, J. E. Oxley, James Herbert, John Millington, H. H. Bushell, A. T. Leech. Jan.: A. R. Higginson, C. H. Kemp, W. J. B. Munro, E. S. Etheridge, R. W. Bigg, A. F. Gordon. Feb.: A. G. P. Spencer, Ivor Goulden.

To be transf. to the Tech. Br.:—Sqn. Ldr.: Jan.: E. J. Smetham-Jones. Flt. Lt.: Feb.: F. James, M.B.E.

Flg. Offs. to be trans. to the Acct. Br., with effect from and sen. of the dates stated:—Dec. 19, 1942: F. W. Sadler. Feb. 10: T. N. Critchlow. Flg. Off. S. E. Lingwood takes rank and precedence as if his appt. as Flg. Off. bore date Feb. 1, 1942. Reduction from Feb. 15.

Flt. Lt. H. C. Cooke relinquishes his commn. on account of ill-health and retains the rank of Sqn. Ldr. Mar.

Flg. Offs. relinquish their commns. on account of ill-health and retain their rank:—Mar.: F. Bagot, D. M. Burnett, B. Fishman, H. Hoyle.

Flg. Off. M. Beever resigns his commn. and retains the rank of Flt. Lt. Mar.

Flg. Off. J. A. Allport resigns his commn. and retains his rank. Mar.

Sqn. Ldr. (temp. Wg. Cdr.) E. W. Simpson relinquishes his commn. on cessation of duty and retains the rank of Wg. Cdr. Mar.

The commn. of Flg. Off. (prob.) B. Le Strange is terminated. Mar.

TRAINING BRANCH.—The commns. of the folg. Plt. Offs. are terminated:—Feb.: D. B. Sharp. Mar.: A. C. Batt.

MEDICAL BRANCH.—To be Flg. Offs. (emergency):—Feb.: N. J. Anderson, M.B., B.Ch.; Ernest Bebbington, M.B., Ch.B.; R. N. Brandwood, M.R.C.S., L.R.C.P.; P. H. Buxton, M.B., B.Ch.; J. G. Coburn, M.B., Ch.B.; J. E. Crane, M.B., B.Ch.; G. H. Dhenin, M.B., Ch.B., M.R.C.S., L.R.C.P.; J. L. T. Dickie, M.B., Ch.B.; K. M. Duncan, M.R.C.S., L.R.C.P.; Robert Dunlop, M.B., B.Ch.; R. L. Ewing, M.B., Ch.B.; G. E. Ffrench, M.B., B.Ch., M.R.C.S., L.R.C.P.; P. A. H. McC. Foster, M.B., B.Ch.; W. P. U. Jackson, M.B., B.Ch., M.R.C.P.; R. N. A. Leyton, M.R.C.S., L.R.C.P.; R. M. S. Matthews, M.B., B.Ch., M.R.C.S., L.R.C.P.; J. P. Quilliam, M.B., B.S., M.R.C.S., L.R.C.P.; C. B. M. Swan, M.R.C.S., L.R.C.P.; B. A. Thompson, M.B., Ch.B.; George Masterton, M.B., Ch.B.

Flt. Lt. F. W. T. Davies, M.R.C.S., L.R.C.P., relinquishes his commn. on account of ill-health and retains his rank. Mar.

Flg. Off. J. H. Playne, M.B., B.S., L.M.S.S.A., resigns his commn. and retains his rank. Mar.

ROYAL AIR FORCE REGIMENT.—To be Plt. Offs. on prob. (emergency):—Jan.: Wt. Offs.: J. E. Gray, John Lehane. Flt. Sgts.: G. W. Moore, W. J. Page, G. S. Rollings, J. S. Tointon. Act. Flt. Sgt.: J. S. Millar. Sgts.: N. G. Atkinson, Albert Ball, C. E. Beeley, H. J. Brookes, E. A. Brown, C. C. Colback, F. J. Featherstone, George Hammersley, S. E. Harwood, P. A. Healy, H. W. Kelly, W. A. C. Kitching, John Kneeshaw, C. W. Kocher, A. S. Morton, Harry Mosely, L. F. Stuart, W. M. D. Strange, E. F. Owen, E. R. Pack, A. M. Terry. Cpls.: J. R. Abbey, F. W. Allen, Sydney Allington, D. L. Baxter, Stanley Barmby, Philip Bennett, W. F. Brockfield, L. J. Brunjes, J. J. Campbell, Frank Cooling, F. J. Copsey, W. B. Crinks, B. C. Crook, W. E. Dutton, R. E. Downard, George Elder, R. A. H. Eling, D. H. J. Everson, Leslie Erridge, C. G. Faulkner, W. E. Farebrother, H. J. L. Feesey, F. G. Ferguson, L. F. Gillam, J. S. F. Green, J. D. W. Hall, R. C. Harris, G. H. Haygreen, J. E. Helliwell, S. G. Heywood, Stanley Hulse, A. J. Hyde, Charles Johnson, D. A. Jones, A. E. Kingston, W. R. Lamb, Theodore Lester, R. P. Lewis, P. F. Llewellyn, K. A. Lloyd, L. J. Marks, W. H. Marriott, W. E. Marshall, B. C. Mimmack, R. M. Morgan, J. W. Moore, C. H. Parker, R. A. Parkins, C. V. F. Pavia, J. C. Phipps, Frederick Percival, F. E. Pitt, Archibald Pollock, F. R. Price, George Roberts, J. E. Robertshaw, R. E. Roberts, A. W. Robson, S. P. Sharpe, A. J. Shelvin, L. J. Q. Shute, A. V. M. Somers, H. J. Sutton, E. E. Stringer, S. M. Stripp, L. S. Strong, G. R. Talbot, J. C. Taylor, H. I. Taylor, Alfred Thorne, F. R. Webb, T. S. Wheeler, W. H. Wilkinson, H. R. Williams, E. I. Willis, F. J. Woods. Act. Cpls.: R. J. Bechervaise, F. W. H. McLellan, Howard Sylvester. Ldg. Acm.: A. E. Boatfield, J. H. Brunt, L. W. Crew, E. J. Colley, D. R. Farwell, Harold Fisher, A. D. Gray, Neil Henderson, A. H. S. Hicks, H. E. Hunt, W. P. Joels, L. M. Kerr, L. L. Berman, D. J. Marshall, D. F. Morgan, F. H. Morton, N. J. Page, Guthrie

Phillips, Robert Rellie, R. J. Reynolds, P. B. Roberts, J. E. Rycroft, W. G. Sadler, R. P. Saunders, M. F. A. Scandrett, Andrew Shearer, H. G. Smedley, F. C. S. Sudbury, L. W. Titman, F. C. Tomlinson, F. J. Wood. Acm. 1st Cl.: J. F. Beveridge, G. M. Buck, R. E. Bunting, Cyril Chamberlain, Christopher Charnock, A. C. Clipstone, G. W. Corbin, E. H. G. Davey, J. G. Doubleday, A. R. J. Fox, T. H. Cowling, D. J. Graham, Samuel Green, H. C. Henry, H. R. Higgs, Peter Hildreth, Ralph Jenkins, T. H. Keeling, J. H. Lang, R. F. Lovett, R. H. Lumsden, A. W. Martin, C. W. Mead, Norman Nicholson, J. B. Parkes, S. S. Selway, James Slaughter, J. W. Speight, R. W. Sinson. Acm. 2nd Cl.: W. J. Alfred, W. T. Berry, W. H. Brain, T. C. E. Clapp, I. R. Clark, W. G. Colpus, Hugh Dutton, W. C. Fox, C. W. Gee, W. H. Hardy, R. G. Mason, T. D. S. Rennie, H. R. Sims, A. E. Turner, D. W. Tweddle, J. P. Wells.

Flg. Offs. transf. to the Admin. and Spec. Duties Br.:—Mar.: A. Edmonds, R. F. Price.

The commn. of Flt. Lt. (prob.) R. N. Kennedy, M.C. is terminated. Mar.

AUXILIARY AIR FORCE

GENERAL DUTIES BRANCH.—Sqn. Ldr. P. J. Ferguson is transf. to the Admin. and Spec. Duties Br. Mar.

WOMEN'S FORCES

Employed with the Medical Branch of the Royal Air Force.—Flt. Lt. E. R. M. Wilson, M.B., Ch.B., resigns her commn. Mar.

PRINCESS MARY'S ROYAL AIR FORCE NURSING SERVICE.—Sister Mrs. K. F. Buttle resigns her appt. Mar.

WOMEN'S AUXILIARY AIR FORCE.—To relinquish their commns. on account of ill-health:—Sec. Offs.: Mar.: A. J. Coombe, Sec. Off. (prob.): D. Ailsop, Asst. Sec. Off. (prob.): L. N. Pagden.

To resign their commns.:—Sec Offs.: Feb.: J. M. Done, M. G. Turnbull. Mar.: F. T. Mosley, M. D. Gardner. Sec. Offs. (prob.): Feb.: B. F. ter Averst (née Cummings). Mar.: P. M. Ledeboc. Asst. Sec. Offs. (prob.): Feb.: A. Walker. Mar.: F. F. Higgins.

Air Ministry, March 26, 1943.

ROYAL AIR FORCE

GENERAL DUTIES BRANCH.—To be granted the rank of Sqn. Ldr. (war subs.):—Sqn. Ldr. (temp.): Jan.: S. A. D. Pike. Flt. Lts.: D. Peveler, D.S.O., D.F.C. Mar.: T. G. Mahaddie, D.S.O., D.F.C., A.F.C.

Flg. Off. J. R. G. Ralston, D.S.O., D.F.M., is granted the rank of Flt. Lt. (war subs.). Jan.

Flg. Offs. to be Flt. Lts. (war subs.):—Feb.: H. L. J. Aitchison (Lt. S. Stafford R.), P. M. C. Hill (Lt. R.A.), D. W. Jackson (2nd Lt. R.A.), C. T. P. Stephenson (2nd Lt. R.A.), H. T. Winter (2nd Lt. Lanes. Fus.), L. J. Harries (2nd Lt. N. Staffs R.), D. Constant (2nd Lt. Derbyshire Yeol).

Plt. Off. P. J. Garland (2nd Lt. Green Howards) to be Flg. Off. (war subs.). Feb.

Plt. Off. (prob.) N. S. Brady to be Flg. Off. (war subs.). July.

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Oct., 1942: D. Norrington, D.F.M. Nov., 1942: J. Lawson, D.F.M., H. J. Parker, D.F.M., K. P. Hunnings, G. B. Rand, D.F.M., P. S. Thomas, B. D. B. Lewis, D.F.M., C. F. Plimmer, D.F.M. Dec., 1942: G. G. Woodward. Jan.: A. Baker, A. E. C. Wilkie. Feb.: J. W. Moore, D. P. Stuart, C. H. J. Hunt, S. S. S. Ward, P. R. McIntosh, B. G. Jolly, R. P. James, L. J. Taylor, F. I. Calcutt, W. E. Frew, C. H. McKenzie, N. Anderson, W. A. McLroy, S. Fine, L. J. McCulloch. Mar.: J. K. Newman, R. G. Price.

TECHNICAL BRANCH.—Flt. Lt. C. A. Pope to Sqn. Ldr. (temp.). Jan.

Flt. Lts. (temp.) granted the rank of Flt. Lt. (war subs.):—Jan.: W. Lawry, A. Fisher.

Flg. Offs. to be Flt. Lts. (temp.):—Jan.: T. W. Whitbourn (Sen. Mar. 1, 1942), A. Flanigan, J. A. Paine, H. Hagen, J. Harvey, M. McIntyre, C. A. Deakin, A.F.M., A. J. George, H. J. Gowing, J. McG. Cattrell, W. H. P. Smith (Sen. Sept. 1, 1942).

Flt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Nov., 1942: G. F. Williams, A. J. Roberts, H. G. Gilbert, H. G. Atterwill, S. E. H. Freeman, H. E. Hall, M. Hehir, C. Jordan, E. E. Kirk, D. R. Levinson (Sen. Nov. 21, 1942), T. J. Spencer, D. W. Stirling, W. D. T. Sutcliffe, R. Tomlinson, H. D. Window, D. A. Reid, G. H. Poet, J. Y. Birch. Dec., 1942: L. W. Booth, C. H. Robinson, W. Terris, A. E. Fort, F. B. Robinson, E. G. Burton, H. C. Stocks, T. H. Blake, J. G. Kendall, J. Johnson. Jan.: J. C. Holley. Feb.: A. Hunter, L. R. Male. Mar.: F. A. J. Gunn.

Plt. Off. (prob.) H. Barratt-Atkin to be Flg. Off. on prob. (war subs.). Apl., 1942, and confmd. in appt. July, 1942. (Subs. for notifi. of Dec. 18, 1942.)

Plt. Off. (prob.) J. Arthur to be Flg. Off. on prob. (war subs.). Jan. (Subs. for notifi. of Jan. 1.)

Plt. Off. (prob.) L. F. Smith to be Flg. Off. on prob. (war subs.). Feb. (Subs. for notifi. of Jan. 1.)

The notifi. of Mar. 12 concern, Plt. Off. L. C. Hall is cancelled.

Act. Plt. Off. (prob.) W. C. H. Steven to be Plt. Off. (prob.) July, 1942 (Sen. July 4, 1942).

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—To be granted the rank of Flt. Lt. (war subs.):—Flt. Lt. (temp.): Mar.: P. Macario. Flg. Off.: Jan.: W. C. A. Jenner.

Plt. Off. (prob.) to be Flg. Off. on prob. (war subs.):—Dec., 1942: W. S. Wood, F. C. Stevens. Feb.: C. Rosewall.



INTERNATIONAL CO-OPERATION.—A Czechoslovak pilot gives the squadron's Chinese chow mascot a lift before setting out on a sweep in a British Supermarine Spitfire IX of the Natal fighter squadron.

(The rest of the appointments under this date will be published next week.)

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

# ADHESION THROUGH THE AGES . . . . No. 3



**C**OACH BUILDING . . . . 1725 — a leisurely age, but an age when superb craftsmanship was the result of long and laborious processes. Then, the means for 'joining things together' was extremely limited. But the passing of the years has brought many advances and today, industry has entered a new age — the age of Industrial Adhesion. You know from practical experience the part Bostik Adhesives and Sealing Compounds are playing in this new era. There are occasions when Bostik Products supersede more conventional methods of 'joining things together.' Often they are complementary.

Today the test bench of war is proving up to the hilt the qualities of the various grades, the variety of their applications. When planning your production for peace, remember that for every single war-time application of Bostik Products there will be innumerable post-war counterparts to serve you in peace as they do in war.

*Here is the BOSTIK MAN whom you know so well as representing the Bostik Technical Department. After the war he will still be at your service — to advise you personally on the application of Bostik Products to your particular problem of adhesion in post-war industry.*



## THE **Bostik** SYSTEM OF ADHESION

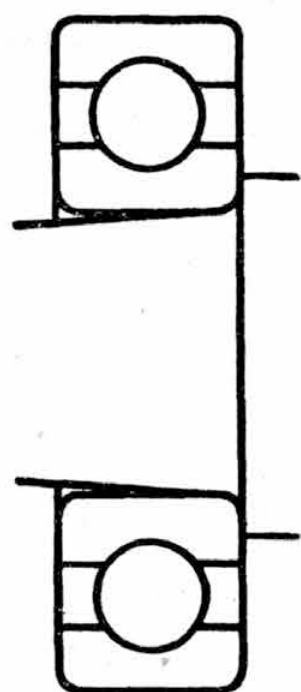
B.B. Chemical Co. Ltd., Leicester

# KEEP 'EM ROLLING



CUT THIS OUT AND DISPLAY IN YOUR WORKSHOP

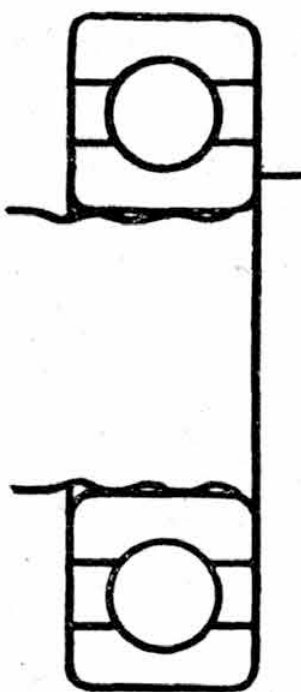
## FITTING FAULTS



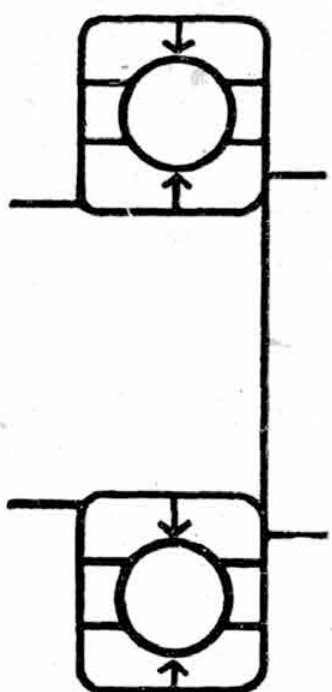
TAPERED SEATING  
RACE UNEVENLY  
STRESSED.  
RESULT: - Fractured  
Race.



UNDERSIZE SEAT-  
ING.  
RESULT: - Race creep  
Development of  
smearing cracks.



IRREGULAR SEAT-  
ING PRODUCED  
BY POLISHING OR  
ROUGH TURNING.  
RESULT: - Race creep  
when high spots are  
reduced causing  
smearing cracks.

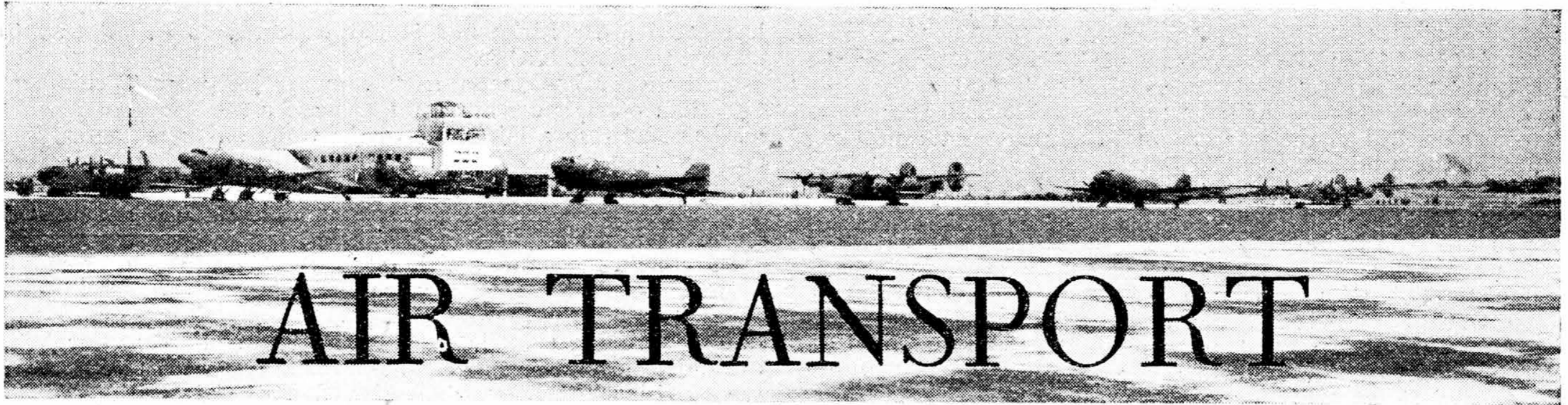


OVERSIZE SEATING  
HEAVY INTERFER-  
ENCE FIT.  
RESULT: - Tight run-  
ning bearing.  
Premature fatigue of  
raceways due to extra  
load on the balls.

Fitting faults shorten the life of your **SKF** Bearings, check these four common faults and avoid them. Correct assembly is simple, but vital, when replacement is so difficult. Fit 'em properly and keep 'em rolling.

# SKF

THE SKEFKO BALL BEARING COMPANY LIMITED, LUTON, BEDS.



INTERNATIONAL MEETING PLACE.—A number of civil aeroplanes belonging to British Overseas Airways Corporation photographed on the new Portuguese airport, Portella, Lisbon, which was officially opened last year. The types include Douglas DC-3s of K.L.M. operated under charter to B.O.A.C., Douglas C.47 Dakotas and Consolidated Liberator transports.

### Anglo-American Statistics

A COMPARISON between the route miles and mileage flown by U.S. air lines and British Overseas Airways during the past three years is interesting, although, all things considered, hardly fair. Before the War U.S. air line companies covered 50,000 miles of internal or domestic routes within the U.S.A. and 90,000 miles outside. In 1940, the companies flew a total of 110,000,000 miles inside the U.S.A. and 11,000,000 miles outside, with a total fleet of about 370 aircraft.

During 1941 and 1942 more than half this fleet was withdrawn from commercial operation, mainly for the U.S. Air Transport Command. Even so, in 1941 U.S. air lines flew in one month a total of 12,500,000 miles, and when the fleet had been still further reduced they flew a total of 8,004,000 miles in one month in 1942.

On Oct. 23, 1942, the 16 internal companies were operating 165 aeroplanes compared with 324 in May, 1942. These 165 aeroplanes, comprising 155 Douglas DC-3s and 10 Lockheed Lodestars, were flying 264,709 scheduled miles compared with 368,867 scheduled miles a day operated by the 324 transport aeroplanes in May, 1942. The 158 aeroplanes taken over for operation by and for the Air Transport Command were 101 DC-3s, 13 DC-2s, three Lodestars, 16 Lockheed Electras and 25 Boeing 247-Ds.

Examples of the work done by the 16 internal companies with the aeroplanes left them for commercial services are shown by the following facts:—American Airlines, one of the larger companies, had 74 DC-3s in May, 1942, which were flying an average of 1,025 miles per day per machine; on Oct. 23 the Company had 43 DC-3s operating 1,628 miles each a day. Inland Airlines, one of the smaller companies, had five Boeing 247-Ds operating an average of 887 miles per day each in May, 1942; in October it had one Lodestar averaging 1,530 miles a day.

British statistics since the War began are for one concern only, British Overseas Airways, which has not been operating on a commercial basis at all, but solely for the Government. The Corporation's routes have changed as the course and theatres of the War have altered, so that route mileage has fluctuated throughout each year. Also, the Corporation's fleet has consisted of about 100 aircraft (usually less) of some 20 different types. The following figures are for the Corporation's activities between 1939 and 1943, each year ending on Mar. 31.

1939-1940: miles flown, 7,416,000. (During most of this year the figures are for Imperial Airways pre-War services.) Route miles at Apl., 1940: 30,935.

1940-1941: miles flown, 5,114,000. Route miles as at Apl. 1, 1941, 25,465. (Italy entered the War in June, 1940, thereby breaking the Mediterranean Empire route.)

1941-1942: miles flown, 9,014,000. Route miles as at Apl. 1, 1942, 49,304.

1942-1943: miles flown, approximately 10,980,000. Route miles as at Apl. 1, 1943, approximately 49,500.

### Axis Transport

AIR TRAFFIC between Bucharest, Belgrade, Zagreb, Venice and Milan and Athens was re-opened on June 1. From Zagreb there is a branch service to Vienna and Berlin with connections to Spain, Portugal, Sweden and Finland. Another service by way of Zemun links Athens and Istanbul.

The first Slovak air line is reported to connect Presov, the most important town of Eastern Slovakia, with Bratislava and Vienna. The route crosses the Tatra mountains and is presumably operated by D.L.H.

Deutsche Luft Hansa is now operating four times a week on the Berlin-Danzig-Königsberg-Riga-Helsinki route and has included a stop at Kaunas.

### Canadian Controversy

CANADA'S determination to have one chosen instrument and no competition for its Air Transport services is shown by a recent controversy about the extension of the trans-Canada services of T.C.A. from Vancouver to Victoria. This extension was announced at Ottawa on June 1 and became effective as from June 6 (see THE AEROPLANE of June 25).

The June issue of "Canadian Aviation" states that Trans-Canada Air Lines' application for this route was refused by the Board of Transport Commissioners for Canada at a hearing on Apl. 2. "Canadian Aviation" compliments the Board for its lack of bias in reaching its decision and the way in which it gathered its information before reaching a conclusion.

The Vancouver-Victoria service has been operated by Canadian Airways Ltd. (now a part of C.P.R. Airlines) under a licence issued by the Board of Transport Commissioners in April, 1938, and the decision is all the more courageous because it was made by a Government Board against a Government company, and was in favour of private enterprise against the Government's declared policy of one chosen instrument.

"Canadian Aviation" applauded the decision of the Board along these lines and urged the Government to allow the Board to make such decisions as in its free and unbiased judgment it thought equitable and just.

Somewhere there seems to be some misunderstanding. At first glance the Government appears to have over-ruled the decision of the Board, but the official report from Ottawa of the opening of T.C.A.'s extension, which has just been received, states that the Board found that the "present and future public convenience and necessity" required the new service but did not grant T.C.A. the right to carry passengers or air express locally between Vancouver and Victoria.

### Biggest and Best

IDLEWILD AIRPORT, on the North shore of Jamaica Bay, New York, is to be the World's biggest—and best—airport, according to reports. When construction is completed in 1945 it will have an area of 2,576 acres, five times the size of La Guardia Field. Work on the new aerodrome began in 1941, when, according to an official report, La Guardia Field "had been utilised to its fullest capacity." In his Wright Brothers' Memorial Lecture on May 27, Dr. E. P. Warner stated that at the peak of activity before the War La Guardia Field coped with 244 landings and take-offs a day.

The new airport will be a combined landplane and flying-boat base, and will have 13 miles of runways and three alighting areas. The runways, each 200 ft. wide, will be laid out in pairs in four different wind directions, and there will be five miles of paved taxi strips 100 ft. wide. The runways are to be stressed for aircraft of up to 300,000 lb. all-up weight.

New York City has undertaken the construction of Idlewild Airport, and the preliminary cost of dredging, filling, the paving of the runways and taxi strips, draining and lighting, plans and specifications for road approaches and engineering fees, is being met by the \$9,250,000 (about £2,300,000) which the City received from the U.S. Government as compensation when Floyd Bennett Field was taken over by the U.S. Navy, and the sum of \$860,000 (about £214,000) received from the Civil Aeronautics Authority.

### Qantas Losses

EIGHT FLYING-BOATS are said to have been lost by Qantas Empire Airways Ltd. on flights in the operational areas of the South-West Pacific or while on charter to the R.A.A.F. Thirteen of the staff of Qantas have been killed, injured, or are missing since the start of the Pacific War. The flying-boats are:—The Corinna, Centaurus, Corinthian, Circe, Camilla, Corio, Coogee and Calypso.

## Canada's Post-War Policy

AN ARTICLE in the May issue of "Fortune," under the title "Canada's Post-War Air Policy," states that the "nervous reaction of Canadians to U.S. and British talk about post-War control of the international air suggests the mischief latent in this problem even for good neighbours."

Officially, Canada is said to have ignored the "excited and occasionally ill-tempered noises that emanated from the British Parliament and the U.S. Congress during the Winter. But unofficially, Canadians turned suspicious and alert." Several Canadian journalists on intimate terms with members of the Canadian Government went to Washington to question the U.S. State Department and the Civil Aeronautics Board. They wished to know if there was a secret deal between the U.S.A. and Great Britain, as some Canadians suspected; was the U.S.A. planning to deal with the problem internationally; and what was Canada's position?

Because of its geographical position Canada is said to believe that it has a tremendous natural stake in post-War Air Transport, is indispensable to any "round-the-World Imperial air system," and assures Great Britain access to North America, which is said to be "an ace in the hole against U.S. refusal to let British aircraft in and/or through our sovereign air." Also, Canada provides an alternative route to Australasia.

Canadians know that the most economical routes between North America, Europe and Asia traverse Canadian territory or the British possessions of Newfoundland and Labrador at the present range of air transports and for the future there are the great-circle courses over the North Polar regions. The author points out that as the approximate geographical centre of the U.S.A. and Canada, Winnipeg may become one of the great international airports for the polar routes.

The War has brought a tremendous expansion of airports and ground facilities in Canada and has opened up two new routes: the "North West Staging Route" from the U.S. frontier to Alaska and the "North East Staging Route" towards Great Britain and Europe. The Canadian Government is said to have spent some 300 million dollars on airports and ground facilities since the War began and the U.S.A. an additional 40 million dollars on facilities in Canada but, "all permanent U.S. installations are to revert to Canada after the War."

Great Britain and the U.S.A. are expected to be willing to sell Canada all the aeroplane equipment needed after the War but some Canadians fear that this will not be until after British and American needs have been satisfied. The article states that Anglo-U.S. discussions on Air Transport have been clouded by mutual suspicion that "each is taking advantage of the other's preoccupation with the War to undermine its legitimate commercial interest" and that Canada is wary of both countries. The author states that Canadian competition on Empire routes will not be welcomed without argument and that Canada distrusts the U.S. habit of settling things with Great Britain and assuming that Canada "will tag along." Canadians are also said to be alarmed by some American arguments that the amount of U.S. money spent in Canada for War purposes should entitle the U.S.A. to certain proprietary rights or "through passage" to Europe and Asia.

Canada's declaration recently that all concessions granted during the War as part of the War effort will cease is said to apply to both Great Britain and the U.S.A. and as Canada is free to "bargain her way into the air" Great Britain will be competitors with the U.S.A. for Canada's favours.

At present five U.S. air lines operate to Canada while Trans-Canada Air Lines operates only one route to the U.S.A. In addition, Canada permits American Airlines to fly a straight line from Buffalo to Detroit, cutting across Canadian territory, and Trans-Canada is allowed to fly over Maine, U.S.A., on its route between Montreal and New Brunswick. Canada is not expected to be content with a five-to-one ratio after the War and is said to be determined to have a bigger share of Canadian-U.S.A. trade.

Mr. Mackenzie King has already declared that Trans-Canada Air Lines will be the only Canadian company operating international air routes, and the article states that in March this year Mr. H. J. Symington, President of T.C.A., gave some indication of his company's plans to a Canadian Parliamentary Committee. He stated that T.C.A. was "working on post-War aircraft designs," intended going into ocean traffic and mentioned three "desirable routes"; across the North Atlantic to Europe; through the Yukon to Alaska and Asia; and across the Pacific from Vancouver to the Orient. In addition, Canada is said to want to operate its own services to Bermuda and Nassau, routes in which it has a "legitimate interest based upon trade" because C.P.R. ships had firmly established the Canadian flag on these routes long before the War. (Ironically enough these routes were operated by the

Canadian Pacific Railway and Steamship Company which now has C.P.R. Air Lines but is not expected to be allowed to compete against T.C.A.—Ed.)

Because Trans-Canada is a comparatively small company Canadian officials are also said to have a modest idea of what might constitute a fair share of the trade on these routes, and Mr. Howe, Canadian Minister of Munitions, is said to have declared that Canada has a sense of proportion and that "Canadian demands will present no problem to the U.S.A. or Great Britain."

In conclusion, the article states: "To satisfy Canada's aspirations means admitting her aeroplanes into Alaska and Hawaii, which have always been 'closed sky.' It would mean equipping Canada with long-range equipment—at least to tide her over the conversion period—and working out with the British some reasonable allocation of the North Atlantic and Pacific trade. But for the right to operate through Canada's air and perhaps to set up some kind of defences along her vast open sub-polar frontier, this does not seem an excessive price—not for Americans with a sense of proportion."

An introduction to the article points out that with aeroplanes on the present 2,000-mile maximum economical range Canada holds the key to economical air trade between the U.S.A. and the "rich markets of Europe and Asia"; that if Canada is inclined to haggle over her sovereign rights the U.S.A. should be able to reach Europe and Asia from its own coastal cities with the longer-range aeroplanes that are planned; but that bad diplomacy must not be permitted to force the U.S.A. into "awkward routes. . . . The problem between the two nations is to hammer out a lasting air policy in keeping with the spirit of the long-unguarded frontier."

## South Africa's Plans

SUGGESTIONS that South Africa was not being consulted in Anglo-American discussions on post-War Air Transport, published in the "Natal Mercury" of June 8 (THE AEROPLANE, June 25), were denied by Mr. Sturrock, Minister of Airways and Harbours of the Union, in a speech at Johannesburg on June 22. He declared that Great Britain and the U.S.A. were already discussing post-War flying and added: "I assure you we are taking our full and fair part in these discussions."

Mr. Sturrock is also reported to have stated that South Africa would do its best to establish services within the African sphere, services which would "undoubtedly be reciprocal," and that by establishing these airways South Africa would help to open up much needed markets. He added: "We shall also negotiate with other parts of the British Commonwealth for the establishment of long-distance overseas flights."

With each Dominion adding its voice to the rising clamour from the U.S.A. and Great Britain of ever-different ideas, there is little wonder that German propaganda is now devoting much space to Anglo-American wrangles on this topic.

## "Jules Vernes" of the United States

THREE FLYING-BOATS, each with eight motors, which are reported to be under construction at Culver City, California, by the Henry Kaiser-Howard Hughes interests, are said by the U.S. Defence Plant Corporation to be—"the biggest things man ever dreamed of sending into the sky."

One of these is presumably the HK-1 plywood flying-boat, which has an all-up weight of 400,000 lb.

Mr. Kaiser also has plans for a four-motor 8,000 h.p. "flying-wing" cargo aeroplane. Tentative plans for this type are for a wing with a span of 282 ft. built of light metals, mainly magnesium. The all-up weight is estimated at 175,000 lb., of which 55 per cent. would be useful load. According to calculations, if the useful load consisted solely of fuel the Kaiser "flying-wing" would have a non-stop range of 17,000 miles. The design is based on the principle that carrying capacity of an aeroplane is cubed if the wing surface is doubled. Mr. E. O. Koppen, a former faculty member of the Massachusetts Institute of Technology, is Mr. Kaiser's Chief Aeronautical Engineer.

The Consolidated Vultee Aircraft Corporation has announced that it has been working for many months on the design of an aeroplane capable of carrying 400 passengers and that this machine has now reached the mock-up stage. Mr. H. Woodhead, President of the Consolidated Corporation, is quoted as saying that if the War lasts for four more years this new aeroplane will contribute to the War effort, but not within the next two years.

## A New Swedish Aerodrome

A NEW AERODROME at Timro, Sweden, was reported to have been opened on June 10. It will be known as Sundsvall-Hernoensand.

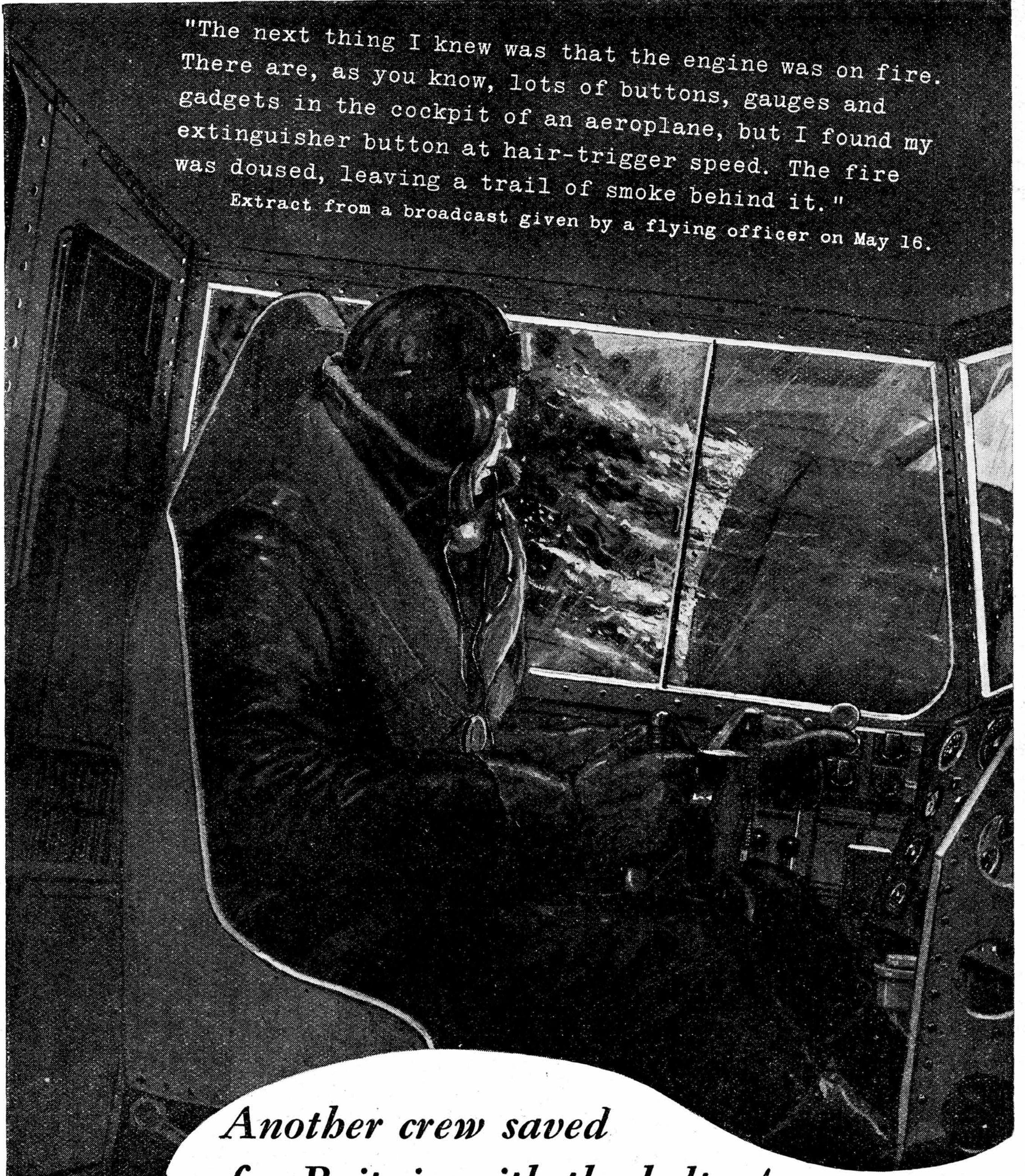


*Everything  
depends on  
Accuracy*

SMITH'S  
AIRCRAFT  
INSTRUMENTS

"The next thing I knew was that the engine was on fire. There are, as you know, lots of buttons, gauges and gadgets in the cockpit of an aeroplane, but I found my extinguisher button at hair-trigger speed. The fire was doused, leaving a trail of smoke behind it."

Extract from a broadcast given by a flying officer on May 16.



*Another crew saved  
for Britain with the help of . . .*

# GRAVINER

FIRE-FIGHTING EQUIPMENT



GRAVINER SERVES THE ROYAL AIR FORCE

**FORTHCOMING EVENTS**

**July 2**  
**London.**—London Regional Reconstructional Committee—Lecture on "London and Air Transport."—National Gallery.—17.00 hrs.

**July 7**  
**Luton.**—Royal Aeronautical Society.—Lecture on "Supercharging and Superchargers," by Mr. A. Alles.—Luton Technical College.—19.00 hrs.

**July 14**  
**London.**—Graduates' and Students' Section of the Royal Aeronautical Society and Graduates' Section of the Institution of Automobile Engineers.—Lecture on "Surface Finishing of Components," by Mr. J. A. Oates.—19.30 hrs.

**An A.T.A. Casualty**

**WE REGRET** to announce the following casualty:—On June 21, 1943, killed while ferrying His Majesty's aircraft in England, Anthony Carpenter, First Officer, Air Transport Auxiliary, beloved husband of Ruby Carpenter, The Borough Arms Hotel, Newcastle-under-Lyme, Staffs.

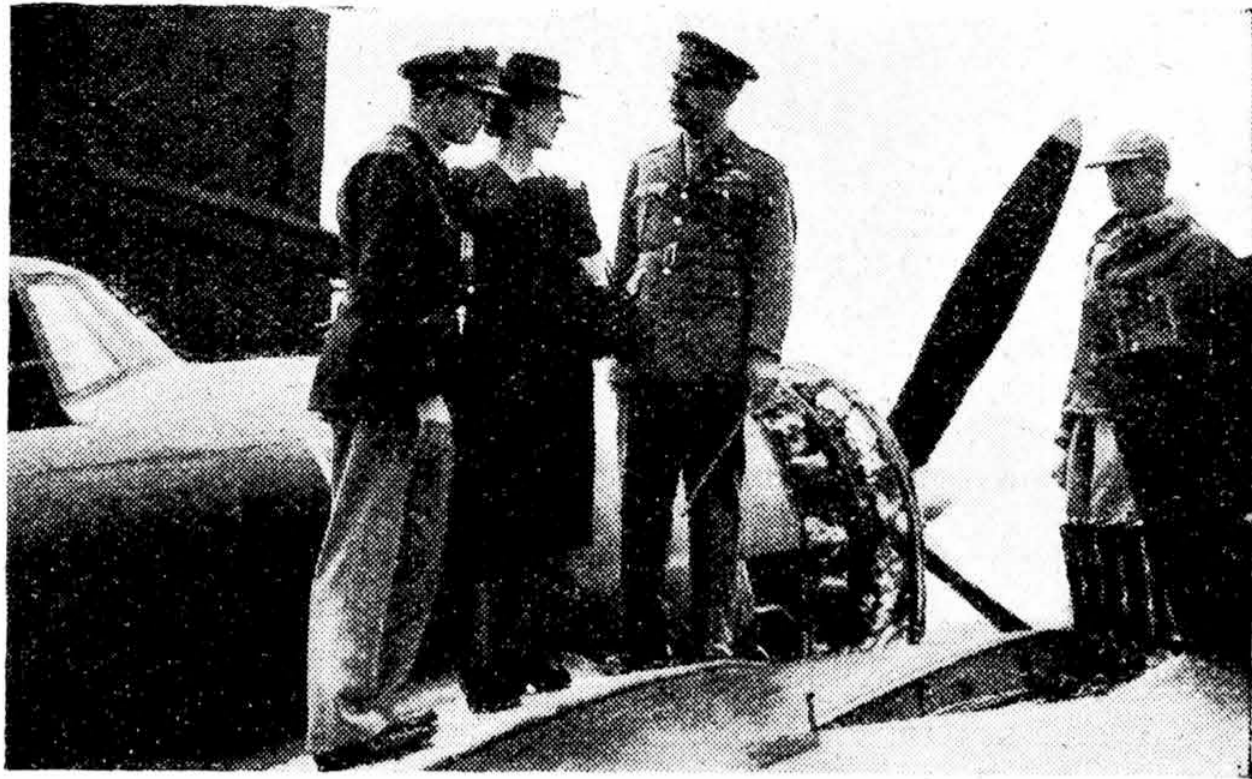
**Mr. S. O. Smith**

**AFTER** eight years with Phillips and Powis Aircraft Ltd., Mr. S. O. Smith, F.R.Ae.S., the Technical Superintendent, is leaving to take over the management of the Salisbury Sheet Metal Co., manufacturers of sheet metal components for aeroplanes. He will also act as Technical Manager and Consultant to D. J. Hawkins and Son Ltd. and H. Markham Ltd., of Reading.

**R.A.F. Benevolent Fund**

**THE SALE** of 10,000 copies of a brochure presented by Boulton Paul Aircraft Ltd. to commemorate the Silver Jubilee of the R.A.F. raised £256 for the R.A.F. Benevolent Fund during the "Wings for Victory" Week at Wolverhampton. The booklet, entitled "Salute to the R.A.F.," gives illustrations of Boulton Paul aeroplanes from the Boblink of 1918 to the Defiant and of the power-operated gun turrets installed in British aeroplanes and in the American Hudson, Baltimore, Liberator and Ventura.

**PLEASE SAVE PAPER**



**ROYAL INSPECTION.**—The Duchess of Kent, in the company of Brig.-Gen. Frank O'D. Hunter (right) and Col. Edward W. Anderson, looks into the mysteries of a Thunderbolt at a station of the U.S. Army Eighth Air Force in Great Britain.

**New Patents**

**APPLICATIONS ACCEPTED**

553,704—Fairley Aviation Co., Ltd., H. E. Chaplin and P. Morrey.—Means for loading bombs and other bodies on to aircraft.—Sept. 10, 1941. Opposition period expires Aug. 17, 1943. Printed specification available July 1, 1943

The following is a list of the sources of the photographs in this issue of THE AEROPLANE:—

- Bippa: pp. 18, 21.
- Keystone: pp. 19, 22.
- P.N.A.: pp. 3 top, 7 top, 28 top.
- Planet: pp. 5 bottom, 25.
- Topical: p. 2.

All not included above are either THE AEROPLANE photographs or come from private sources or are captured from the enemy.

**PERSONAL NOTICES**

**BIRTHS**

**Adams.**—On June 18, at the Nelson Hospital, Merton Park, to Peg, wife of Flt. Lt. J. McP. Adams—a son.

**Birbeck.**—On June 20, at the North Oxford Nursing Home, to Katharine (née Coleman), wife of Sqdn. Ldr. Joey Englefield Birbeck—a daughter.

**Bradford.**—On June 16, at the Chalfont Nursing Home, Gerrards Cross, to Joan (née Burgess), wife of Wng. Cmdr. J. R. T. Bradford, O.B.E., A.A.F.—a son.

**Brittain-Jones.**—On June 21, at Reading, to Marjorie (née Sprake), wife of Flt. Off. W. Brittain-Jones—a son.

**Browne.**—On June 20, at the Radcliffe Infirmary, Oxford, to Barbara (née Cunningham), wife of Flt. Lt. R. C. Browne, B.M., M.R.C.P.—a son.

**Bucknall.**—On June 17, at Birdhurst, Croydon, to Myra, wife of Flt. Lt. C. Bucknall—a daughter.

**Cannon.**—On June 18, at Doncaster, to Betty, wife of Lt. (A) J. K. Cannon, R.N.—a son.

**Collins.**—On June 21, to Eleanor, wife of Roy Collins, R.A.F.V.R.—a daughter.

**Coussens.**—On June 21, at Eating Old Court, to Mylie (née Chalmers), wife of Flt. Lt. Maxwell Wingfield Coussens, R.A.F.V.R.—twin daughters.

**Doe.**—On June 19, at Sunnymede, Newquay, to Marjorie (née Tange), wife of Flt. Off. J. Doe, R.A.F.—a son.

**Douglas-Hamilton.**—On June 15, at Ferne, Shaftesbury, Dorset, to Pamela, wife of Wng. Cmdr. Lord Malcolm Douglas-Hamilton, O.B.E., R.A.F.—a son.

**Edmond.**—On June 22, at Victoria Nursing Home, Northwood, to Louisa (née Brown), wife of Flt. Lt. M. C. Edmond, R.A.F.V.R., B.N.A.F.—a daughter.

**Gee.**—On June 14, at Whalley Range, to Joan, wife of Sqdn. Ldr. J. W. Gee, D.F.C., R.A.F.V.R.—a daughter.

**Grieves.**—On June 20, at North Oxford Nursing Home, to Joan (née Bingham), wife of Flt. Lt. J. A. C. Grieves—a daughter.

**Gunn.**—On June 16, at Little Burton, Melton Mowbray, to Dorothy, wife of Flt. Lt. J. S. Gunn—a son.

**Hirst.**—On June 14, at Queen Elizabeth Hospital, Birmingham, to Jean (née Harris), wife of R. P. Hirst, R.A.F.V.R.—a son.

**Lapsley.**—On June 19, at Gravesend Hospital, to Jean (née MacIvor), wife of Sqdn. Ldr. J. H. Lapsley, D.F.C.—a son.

**Leleu.**—On June 22, at Hillside Nursing Home, Purley, to Mollie (née Rydel), wife of Sgt. E. C. Leleu, R.A.F.—a son.

**Martin.**—On June 21, at the Bromhead Nursing Home, Lincoln, to Edna (née Ryan), wife of Flt. Lt. Donovan G. R. Martin, R.A.F. India Command—a son.

**Meredith.**—On June 18, at Priors Nursing Home, to Joan (née Warren), wife of Flt. Lt. A. D. Meredith—a son.

**Moore.**—On June 17, at the Gables, Stone, Staffs, to Beatrice (née Boland), wife of Flt. Off. J. A. Moore—a son.

**Newnham.**—On June 17, at Haywards Heath, to Betty, wife of Sqdn. Ldr. J. H. L. Newnham, R.A.F.M.S.—a daughter.

**Nuthall.**—On June 17, at Fulmer Chase, Bucks, to Peggy (née Llewellyn), wife of Plt. Off. Wm. J. C. Nuthall—a daughter.

**Stogrove.**—On June 17, at Redhill, to Margot, wife of Sqdn. Ldr. Paul Stogrove, R.A.F.—a daughter.

**Stacey.**—On June 18, at Carshalton, to Doris Mary (née Scarfe), wife of Sqdn. Ldr. W. J. D'Amboise Stacey, R.A.F.O.—a son.

**Stroud-Farrow.**—On June 16, at the East Suffolk Hospital, Ipswich, to Moira Patricia (née Moran Hilford), wife of Flt. Sgt. George Stroud-Farrow, R.A.F.—a daughter.

**Taylor.**—On June 20, at 19, Bentinck Street, W.1, to Pamela, wife of Flt. Lt. C. E. R. Taylor—a son.

**Thompson.**—On June 14, at Moncton, New Brunswick, Canada, to Jean (née Hyde), wife of Sqdn. Ldr. G. E. (Alan) Thompson, R.A.F.—a daughter.

**Versen.**—On June 21, at "Cedar Bank," Liverpool Road, Chester, to Ursula, wife of Flt. Lt. Frederick Versen, R.A.F.V.R.—a daughter.

**MARRIAGES**

**Argles-Peters.**—On June 12, at Addiscombe, Cpl. David Marsham Argles, R.A.F., elder son of the late J. W. L. Argles, to Dorothy Mary Peters, W.A.A.F.

**Atkin-Berry-Ellis.**—On June 19, at Holy Trinity, Sloane Square, Lt. Michael Ian Atkin-Berry, son of Major and Mrs. H. C. Atkin-Berry, of Sevenoaks, to Isabel Amore Ellis, W.A.A.F., daughter of Mr. and Mrs. E. M. Ellis, of Ealing, W.5.

**Coates-Vickers.**—On June 21, at Davenham Church, Cheshire, Sqdn. Ldr. George Reginald Coates, R.N.Z.A.F., of Auckland, New Zealand, to Kathleen Mary, W.R.N.S., elder daughter of Mr. and Mrs. W. Vickers, of Nab Wood, Shipley, Yorks, formerly of Cheam, Surrey.

**Davison-Simms.**—On June 16, at St. Margaret's, Westminster, Flt. Lt. John T. Davison, G.M., only son of Mrs. N. A. Davison, of Christchurch, New Zealand, to Doreen Mary, younger daughter of Mr. and Mrs. H. W. W. Simms, of Mapperley Park, Nottingham.

**Fowler-O'Donovan.**—On June 12, in South Africa, John Fowler, S.A.A.F., only son of the late John Fowler, of Lichfield, Staffs, and Mrs. J. Fowler, of Garthmyl, Montgomery, to Evelyn Francis (Peta) O'Donovan, elder daughter of Mr. and Mrs. M. A. C. O'Donovan, of Glendower, Woodbush, Pietersburg, South Africa.

**Grove-Merriman.**—On June 15, at Hope Bagot, Shropshire, Flt. Lt. Stephen Grove, of Hope Bagot, to Gwynedd Merriman, of Wadhurst, Sussex.

**Halliday-Henderson.**—On June 16, at Ewelme Church, Oxon, Donald Murray Halliday, R.A.F., to Elizabeth Laura Henderson, W.A.A.F.

**Hallifax-Hobbs.**—On June 12, at Christ Church, Southgate, Flt. Off. John Hallifax, to Barbara Jessie Hobbs.

**Harrison-Astbury.**—On June 19, at Streatham Congregational Church, John D. Harrison, R.A.F., son of Mr. R. J. Harrison, of Letcworth, to Brenda Beatrice Astbury, daughter of Mr. and Mrs. F. C. J. Astbury, of Streatham.

**Harley-Tong.**—On June 15, at Iona Cathedral, Flt. Lt. David Glen Harley, R.A.F.V.R., second son of Mr. and Mrs. J. G. Harley, of Edinburgh, to Marjorie, only daughter of Mr. and Mrs. F. N. Tong, of Bolton.

**Hurst-Dean-Smith.**—On June 12, at St. Peter's Church, London, Ontario, Lawrence Stancliffe Hurst (R.C.A.F.), second son of Mr. and Mrs. Stancliffe Hurst, of Stanton St. Gabriels, Dorset, to Roma, only daughter of Mr. and Mrs. Dean-Smith, of Delta, Colorado, U.S.A.

**Isaacs-Cole.**—On June 19, at St. Michael's, Newquay, Lt. Norman H. Isaacs, R.A., only son of Mrs. E. H. Rowe, of Canterbury, Kent, to Flt. Off. Audrey Cole, W.A.A.F., second daughter of Mr. and Mrs. Percy W. Cole, of the Ridge, Purley, Surrey.

**Mervyn-Smith-Gledhill.**—On June 17, at St. John's Church, Golcar, Flt. Lt. Alan Mervyn-Smith, R.A.F.V.R., younger son of the late Mr. W. Mervyn-Smith and of Mrs. W. Mervyn-Smith, of London and Madras, to S/O. Olga Mary Gledhill, W.A.A.F., only child of Mr. and Mrs. W. Gledhill, of Wellhouse, Golcar.

**Newton-Spiers.**—On June 17, at All Saints' Wraxall, Bristol, Major Arthur Henry Newton, second son of Mr. and Mrs. H. C. Newton, of Uppang, Wraxall, to S/O. Helen Marjorie Spiers, of Stanmore, Middlesex.

**Pexton-Duncan-Teape.**—On June 10, in London, Flt. Lt. Frederick N. H. Pexton, R.A.F.V.R., of Beckenham, Kent, to S/O. Jannette Mary Duncan-Teape, W.A.A.F., of Greenbank, Liphook, Hants.

**Rogers-Marsh.**—On June 12, at St. Peter's, Bournemouth, Lt. (A) G. F. K. Rogers, R.N.V.R., son of Mr. and Mrs. E. H. Rogers, of Thorpe Bay, to Judith Anne Louise Marsh, A.T.S., daughter of Mrs. A. Marsh and the late A. J. Marsh, of Bournemouth.

**Smethers-Braybrooks.**—On June 19, at Palmers Green Congregational Church, Plt. Off. John C. Smethers, son of Mrs. Smethers and the late Mr. C. E. Smethers, to Edith Marian Orme (Biddy) Braybrooks, daughter of Mr. and Mrs. F. J. Braybrooks.

**Southam-Barrack.**—On June 19, at St. Martin's Church, Epsom, Wm. Richard Southam, R.A.F., elder son of Mr. and Mrs. W. C. Southam, of Singapore, to Betty Grace, elder daughter of Mrs. C. H. Barrack, of Downs House, Epsom.

**Wynroe-Diver.**—On June 22, at Walton-on-Naze, Essex, Sqdn. Ldr. Ralph Forbes Wynroe, to Barbara Mary Diver.

## The Upkeep of "George"

AS quite a number of pilots can testify, "George," the automatic pilot, is inclined to be temperamental. In his youth this made him unreliable. When Sqdn. Ldr., now Group Capt. Oswald Gayford and Flt. Lt., now Group Capt. G. E. Nicholetts, for instance, set up a new long distance record in February, 1933, by flying the Fairey Long Range Monoplane from Cranwell to Walvis Bay, "George" (not a Sperry "George" such as is used nowadays) completely forgot himself.

He was all right across Europe and the Mediterranean, and even conducted himself with due decorum over the Atlas mountains, but when he saw the Sahara horizon of sand and nothing but sand before him, he oscillated vaguely, shrugged his servos and muttered rebelliously. Later over Nigeria, in a mixture of sand and rain storms, "George" delivered his ultimatum. "Well, if you chaps intend to fly through this, you can jolly well do it yourselves," and faded out.

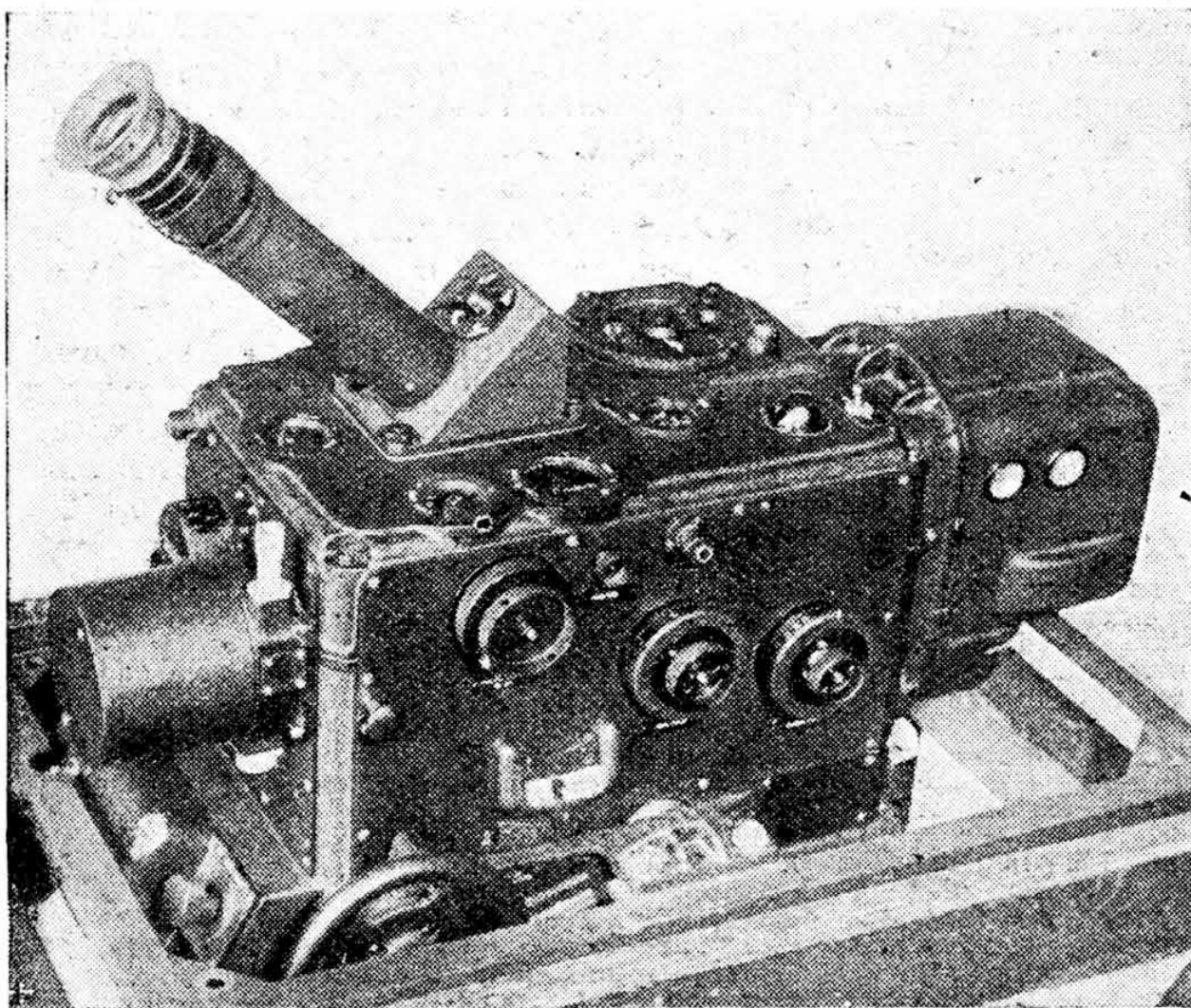
"George" has matured somewhat since then—he is just over 30 years of age now—and has learned reliability, but he still needs careful handling and skilful treatment.

The Sperry Gyroscope Co., Ltd., lays claim to bringing "George" into the World. He is not by any means the only member of the Sperry family, but, as the first-born, he takes a special place. When "George" went out into the World, the firm of Sperry watched his career with interest. He went all over the globe and maintenance became a problem. It was then that the Sperry school first came into being at Brentford. To it went pupils of many nationalities, for the most part sent by commercial air lines. When this War broke out production came first, and the school was in abeyance for a short time. Then, with the growth of Bomber Command and its supply of big bombers, large numbers of gyropilots (as "George" is called), artificial horizons and directional gyros were in regular service in the R.A.F. and demanded maintenance. So the Sperry school resumed operation again in a large mansion that has progressed from country house to vicarage, from vicarage to home for inebriates, and now to a school for automatic stability and control.

There is probably nothing else mechanical in use by the R.A.F. which demands such delicate handling as these gyroscopic products. On their reliability depends the safety of aircraft and of crews and the successful completion of operations.

Two courses are run at the school; one of a few weeks for about 12 pupils on the gyropilot and a shorter one for about 20 pupils on products which are still secret. United States officers and airmen form about half of the courses. The R.A.F. pupils are of all ranks and ages, most of them previously having passed through the long course at the R.A.F. instrument school. Even so the Sperry products are something quite new to many of them. Some dealt with fine instruments in civilian life, but good watchmakers are not always found to make good instrument makers. If a pupil, at the end of the early period, is found to be making unsatisfactory progress he is returned to his unit forthwith.

The work is done in large, airy and beautifully lit rooms.



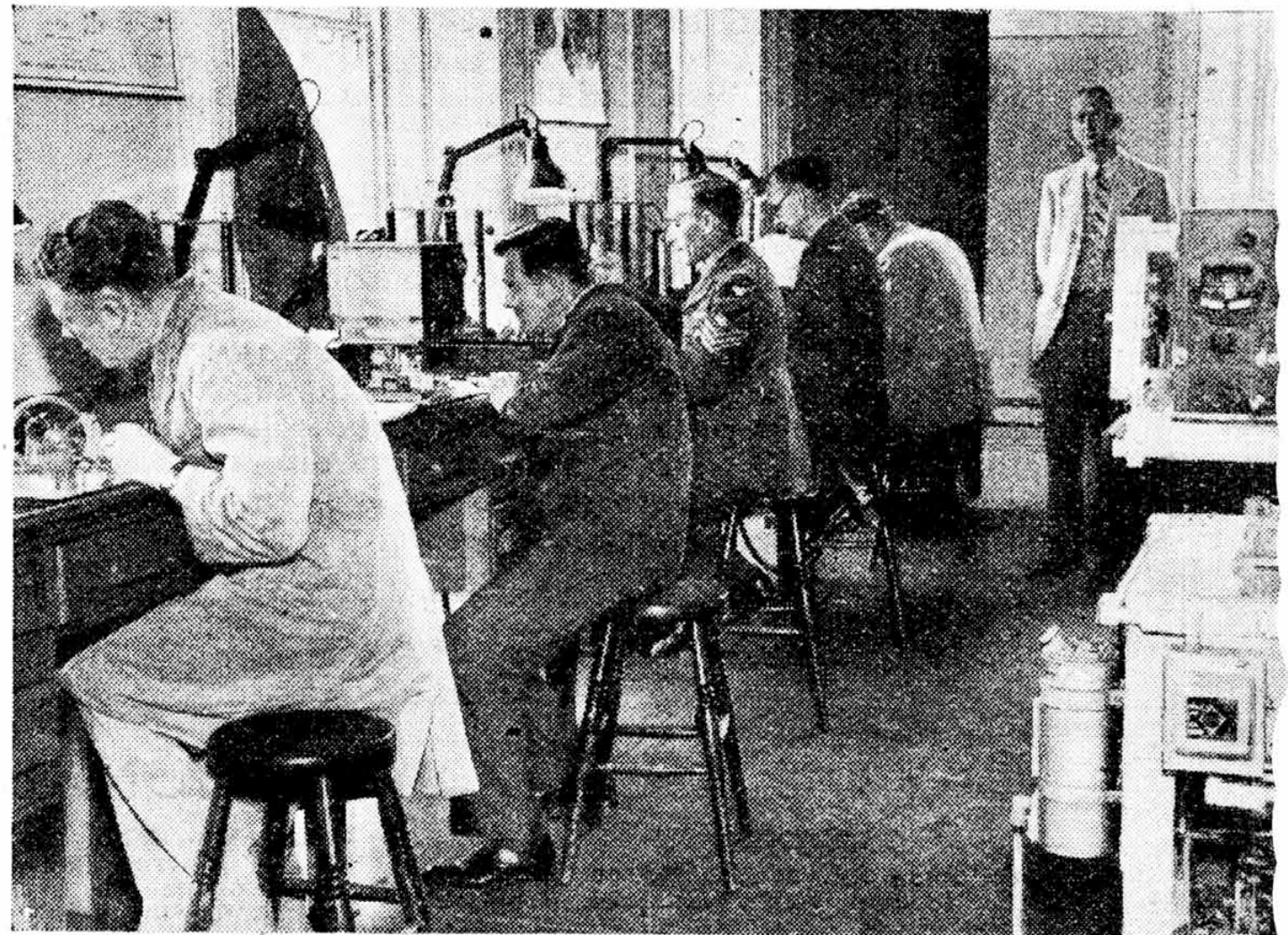
**BOXED UP.**—The Sperry 0-1 bomb sight as fitted in a bomber. It is simple to operate and gives remarkably accurate results.

[“Aeroplane” photograph]

In the first room there is a gyropilot faced by a complete instrument panel as in an aeroplane cockpit and with miniature rudder, elevators and ailerons attached. Here the pupils are shown the gyropilot and its general working is explained. Faults, such as dirt in cylinders, incorrect spring tensions, maladjustment and corrosion of ball bearings are manufactured for them to track down and adjust. In a large case beside this gyropilot are various component parts either actual or models.

The gyropilot is not so complicated as is generally supposed. Since 1909 when the first gyroscope was made and installed by Sperry in a Beach monoplane it has progressed towards simplicity. "Wander"—a prevalent early fault—has been controlled and practically obliterated, and all disturbance is now automatically detected and compensated before it has time to build up. The gyropilot can be likened to the human body, but it detects smaller deviations and corrects them with greater speed and exactitude.

It has its "brain," "nerve" and "muscular" system.



[“Aeroplane” photograph]

**PRACTICAL INSTRUCTION.**—Pupils at the Sperry School testing and adjusting component parts of the gyropilot before assembling them. On the right is a Scoresby test table which simulates conditions of flight.

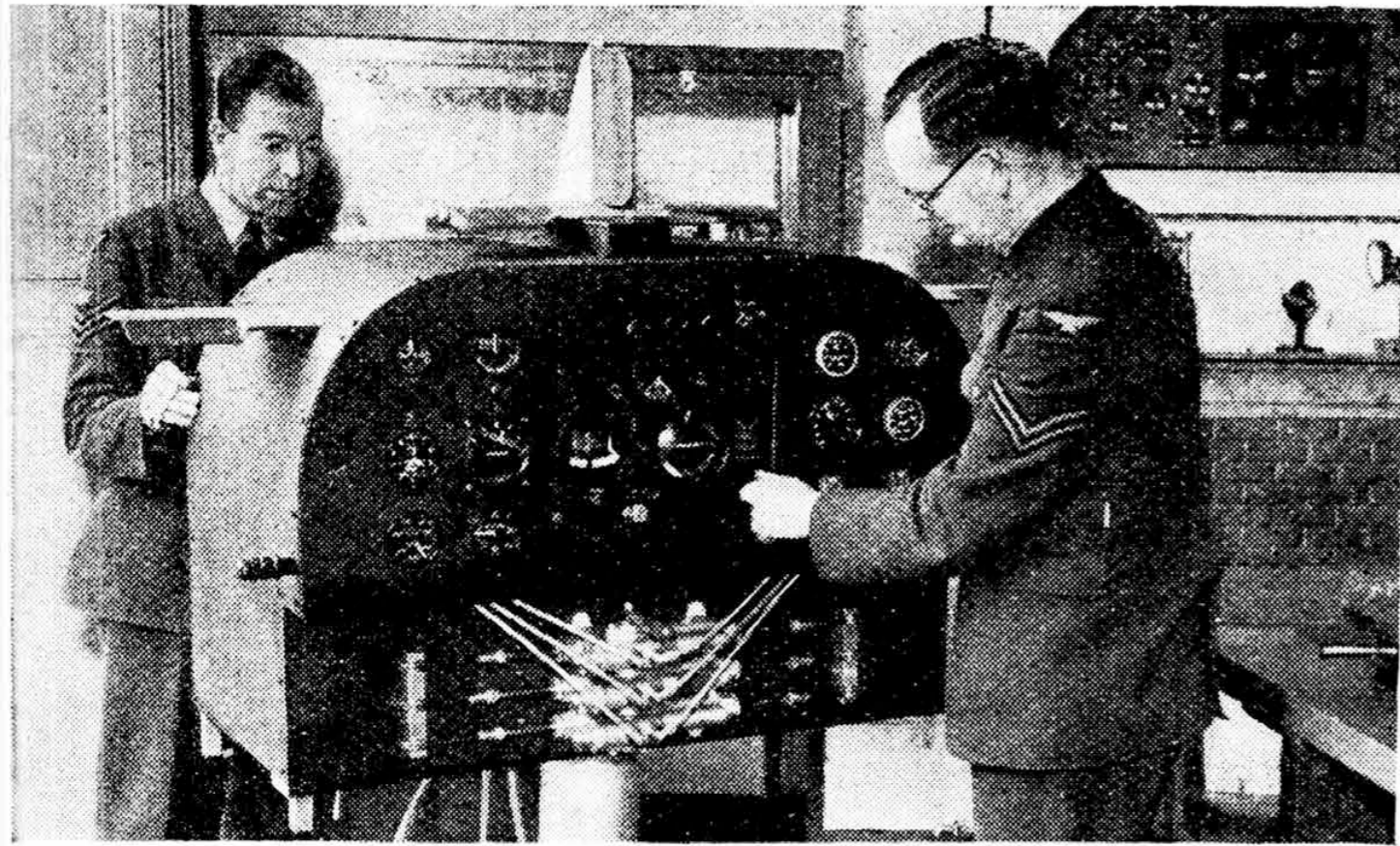
The control gyros are the brains of the instrument, the servo units the muscles and the air relays and oil valves the nerves. The whole is just the natural law of the gyroscope's sense of rectitude harnessed to control the aeroplane and correct its faults, by means of servo motors based on pneumatic and hydraulic principles. Nowadays three servos only give lateral, longitudinal and directional stability.

### The Second Stage

After the pupil has mastered the general principle of the gyropilot he strips it and, in an adjoining room, tests component parts, adjusts them and assembles the whole instrument. There are three primary component parts—the servo unit, the control unit and the mounting unit, each of which is broken down into a number of smaller parts. The control unit being more intricate gives most trouble. It is therefore so mounted that it can be removed whole and a complete new unit slid into place where it automatically takes up its connections with the whole instrument. This operation only takes a minute or less and, in actual practice, spare control units could be carried in aeroplanes. Before the War there was a well-known commercial pilot who always carried his own pet control unit which he fitted into (and took out of) the gyropilot of each machine he flew.

The work of testing and adjusting the smaller component parts calls for a high degree of skill and patience; one small operation may take two or three days. Many metal surfaces are worked down to 1/10,000 of an inch tolerance and about the same exactitude in weight is demanded. Cleanliness and balance are, perhaps, the two most essential qualifications for the assembly of the gyropilot and other instruments based on the law of the gyro.

The Sperry artificial horizon and gyro compass are also



["Aeroplane" photograph]

**"GEORGE" IN CUSTODY.**—A Sperry gyropilot mounted for instructional purposes with aeroplane control surfaces and cockpit instruments. The centre panel is the control unit and can be slid out for replacement. Below are the three servos and rods connecting with elevator, aileron and rudder controls.

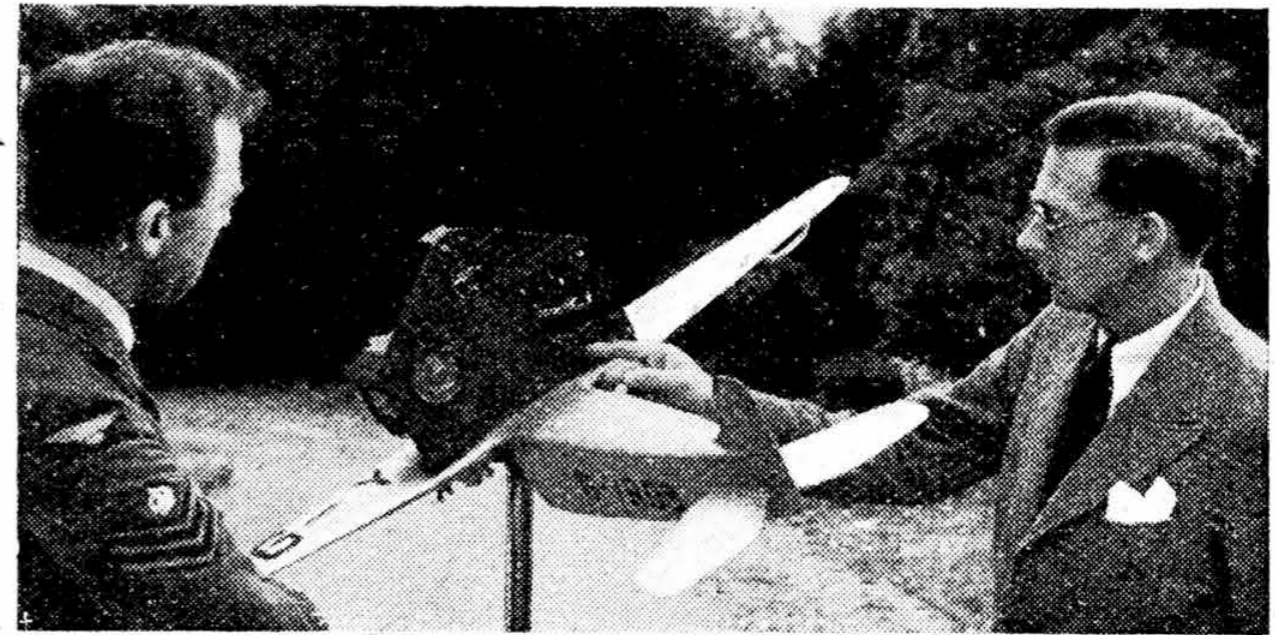
included in the syllabus, and one room is used entirely for instruction on the 0-1 bomb sight which weighs 90 lb.

The largest room in the building is devoted to the course on the confidential products and will probably provide tuition mainly for United States personnel. Nothing can be written about what goes on in this room, but the primary instrument dealt with might come within the category of secret new weapons. It is a nasty and deadly piece of work but a lovely box of brains.

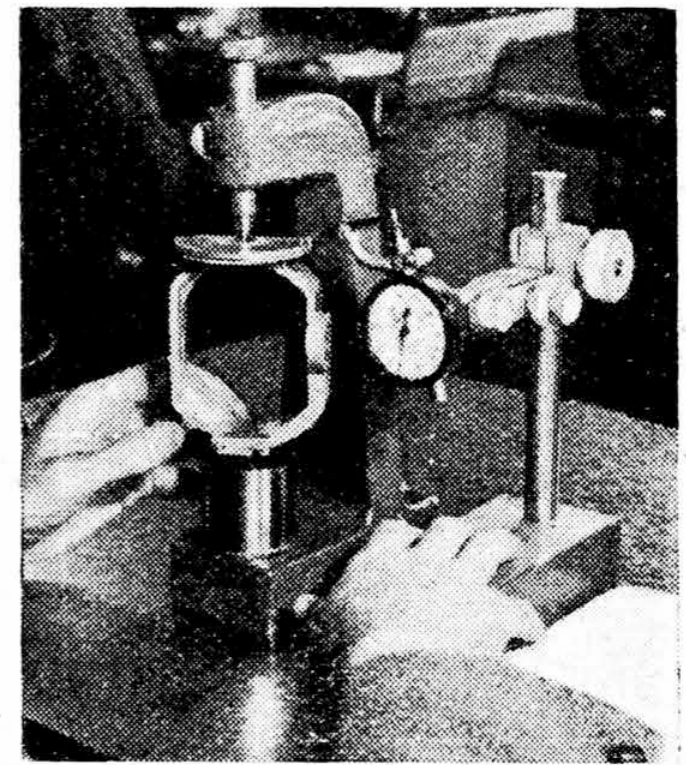
**Practice Before Theory**

At the Sperry School, as at all these schools of Technical Training Command, practical instruction predominates throughout. Perhaps this is more noticeable here than at some schools because the details of the gyropilot cannot be truly grasped by diagrams and theoretical explanation. Take it to pieces and put it together again and the thing is as clear as daylight.

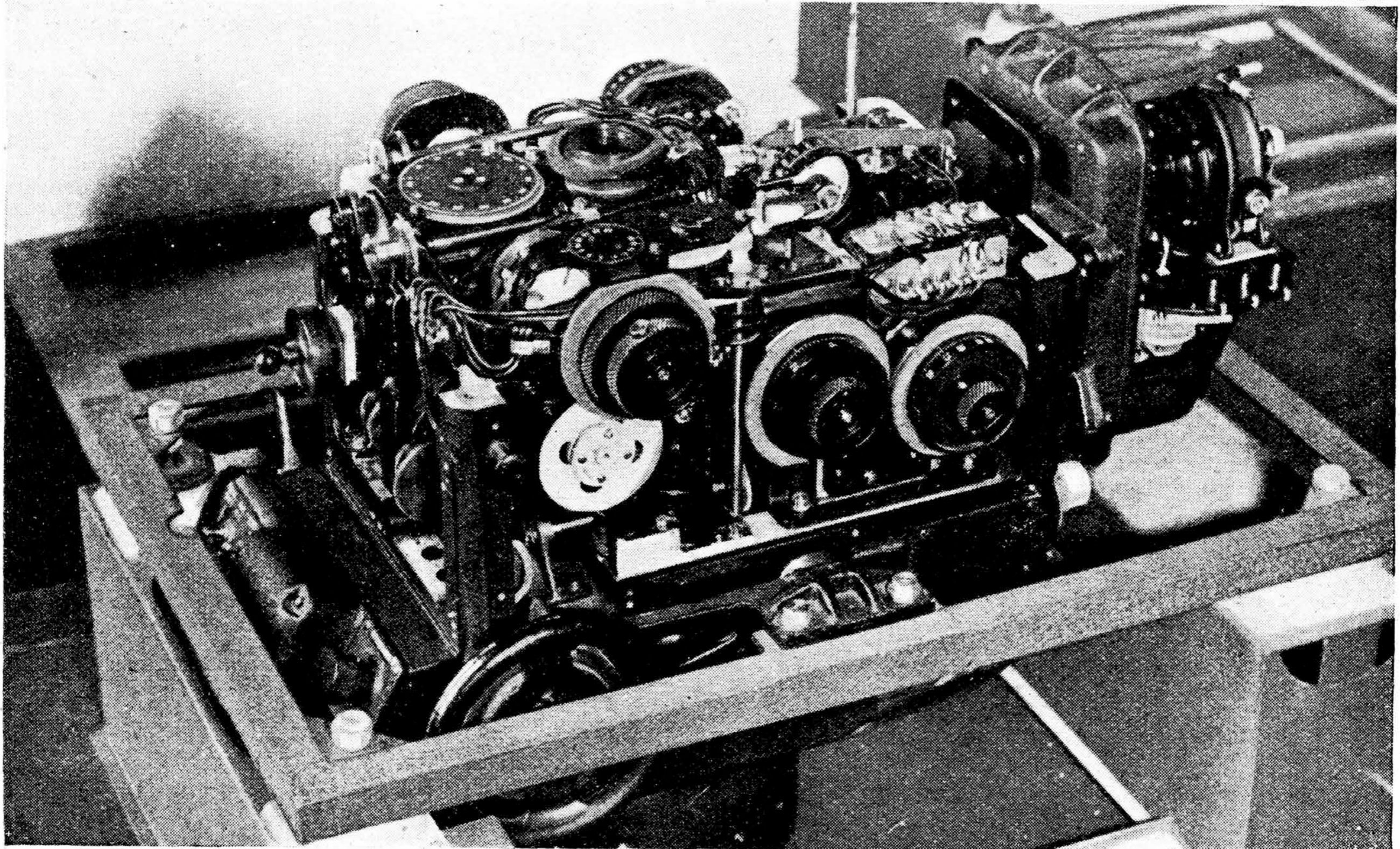
At the end of the course, practical examinations take the place of written examinations. A pupil is given a faulty instrument and has to locate the faults and rectify them.



**MOUNTED IN MINIATURE.**—(Above) Mr. D. McNaught, A.M.I.E.E., demonstrating the Sperry turn and bank indicator, gyro compass and suction gauge mounted on a model high wing monoplane. (Right) The metal plate of a gimbal ring being tested for adjustment to 1/10,000th of an inch.



["Aeroplane" photographs]



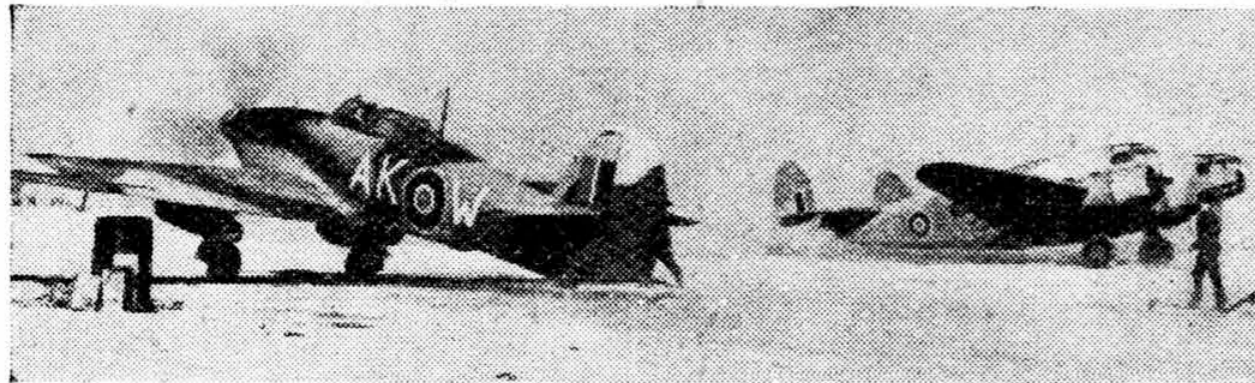
**EXPOSED.**—The inside of the 0-1 Sperry bomb sight.

["Aeroplane" photograph]

## CORRESPONDENCE

### Desert Hurricanes and Hudsons

I WAS READING an old issue of THE AEROPLANE, dated Jan. 15, 1943, and I was very interested to see on page 77 a photograph of my own pet Hurricane IIC "AKW." Furthermore, I can distinctly remember the particular job that we were going to do. You may like to know that the aerodrome was El Adem. I was very enthusiastic about this escorting work because it impressed on me the importance of supplying the Army by air. Without that particular Hudson Squadron (sometimes very much overloaded) I am certain we should have taken much longer to kick the Hun out of Africa.



At that time, the Me 109's were in range of the Hudsons and I hand it to the Squadron for going right to the front, nearly in range of the enemy's artillery, and landing on the desert. There were no grounds free of mines, and the Hudsons did a circuit or two and landed while we circled above for protection. There was a rough pin-point known by the Army and R.A.F., and almost before the Hudsons had pancaked the R.A.S.C. had opened the doors and were unloading. This normally took about an hour. We had long-range tanks fitted and the average duration of each job was 4 hrs. 30 mins., which made one wriggle a bit after the first two hours!

S.P.V.B.

### Hurricane Achievement

YOUR article "The Caravan Passes," in THE AEROPLANE of May 14, by Fougueux, states "that of all the aircraft in any of the air forces in this War not one approaches the battle record of the Swordfish."

Let us look at the battle record of the Hurricane. We perhaps do not fully appreciate the debt that we owe this aeroplane. Apart from bearing the brunt of the Battle of Britain in 1940, it has served the R.A.F. well in Libya, where it established complete superiority over the Regia Aeronautica. It helped to make possible the victories scored by the Army of the Nile in its triumphant march Westward from Egypt which began in Dec., 1940.

The Hurricane has served on more War fronts than any other aeroplane in the World. In the Battle of Britain it shot down more enemy aircraft than any other fighter, which is not surprising when it is considered that there were several Hurricanes in the air for every Spitfire during that period. Notice the countries in which it has served—Russia, Albania, Greece, North Africa, Norway and Burma. Even that list is not complete.

Fougueux mentions also the "amazing versatility" of the Swordfish. In my opinion there is not another aeroplane in service to-day that can even lay claim to the title of being the World's most versatile aircraft more than the Hurricane. It is in service as a day and night fighter, as a fighter-bomber, a catapulted fighter from merchant ships, as a deck landing fighter with the Royal Navy; it can have its range increased for escort work or ferrying to distant countries. Armed with two 40 mm. cannon, the Hurricane is the World's most heavily armed ground-strafer in service. Since its appearance the Hurricane has proved itself to be a first-class fighter, possessing manoeuvrability, hitting power, and beauty of line. It has earned the praise of hundreds of pilots from all over the World.

Now a descendant of the Hurricane itself, the Hawker Typhoon, is in service in large numbers with the Royal Air Force. The struggle for air supremacy in war demands that older types must ultimately give way to new and better designs, and though the Hurricane (which was affectionately called the "Hurrybus" by the R.A.F.) and the name of its designer, Sidney Camm, will eventually pass into history, countless R.A.F. fighter pilots will long cherish the memory of the Hawker Hurricane, the World's greatest fighter.

May I quote Sir Stafford Cripps, the Minister of Aircraft Production, who in a speech to aircraft workers, recently, said: "Some of you may question whether the Hurricane has finished its useful life. It has not. The Hurricane to-day is just as essential a factor to our victory as at any other time in its history." That is, I think, a fitting tribute to Sidney Camm's masterpiece.

GRAHAM D. HEATHCOTE.

### Gliders and Rotors

THE RUSSIANS, who are experts in the use of glider trains, have not, as far as is known here, yet used the idea, although doubtless it has received their consideration; nor have the enemy, who made abundant use of gliders, especially in Crete.

The most practical use of towed gliders is that to which the Army and R.A.F. put them—in the transport of troops and supplies. In effect, gliders reduce the wing and span loading of the towing aeroplane if that machine be considered as sustaining the whole load for purposes of comparison. Thus we obtain shorter take-offs and a smaller power required for flight at cruising speed. They are thus an efficient means of increasing the load and range of an existing suitable aeroplane but are not so efficient as an aeroplane directly designed to carry that same load with equal range.

For civil use, their scope is limited. For instance, suppose an aeroplane attains range by towing fuel-carrying gliders and these slip off at intervals as their fuel is used up, there will remain the difficulty of getting these gliders back to the original starting point or terminus. The same difficulty would apply to slipped transport gliders.

No reply has been published on Mr. Bradley-Watson's rotating-wing transport of Apl. 16. Although with forward velocity the figure of merit for a "Helicopter" increases, the slipstream of the rotors, which in his proposal fits the upper surface of the wing, would in all probability set up a position pressure and thus destroy any wing lift and at the same time greatly interfere with the rotor lift.

Further suppose the machine to weigh 96,000 lb. all up, not unreasonable for an 8,000 h.p. machine, the rotor disc loading becomes 24.3 lb./ft.<sup>2</sup>, and as he specifies a quick take-off the increase in the figure of merit is small. A power loading for the rotors of 6 lb./h.p. is necessary, and to take off he would require 8,000 h.p. for each rotor, even allowing that the machine might function.

Such a machine would have a high overall drag and thus its cruising horse-power would be large. In fact, a high capital and operational cost would have to be met, which puts the proposal beyond practical use.

W. H. ALCOCK.

### Naval Air Dockyard

WE, THE UNDERSIGNED, have read in your issue of June 18 "Naval Air Dockyard" with great interest.

We would, however, like to point out that the two paragraphs on the activities of Jersey Airways staff in this Dockyard are incorrect, and we request that this be corrected.

During the first six months of the War the "Yard" was staffed by a gradually increasing number of skilled Scottish engineers, men with years of experience behind them, who developed the "Yard," taught the semi-skilled and unskilled, and to-day supervise. To these Scotsmen, therefore, should the credit be given for the present status of the "Yard."

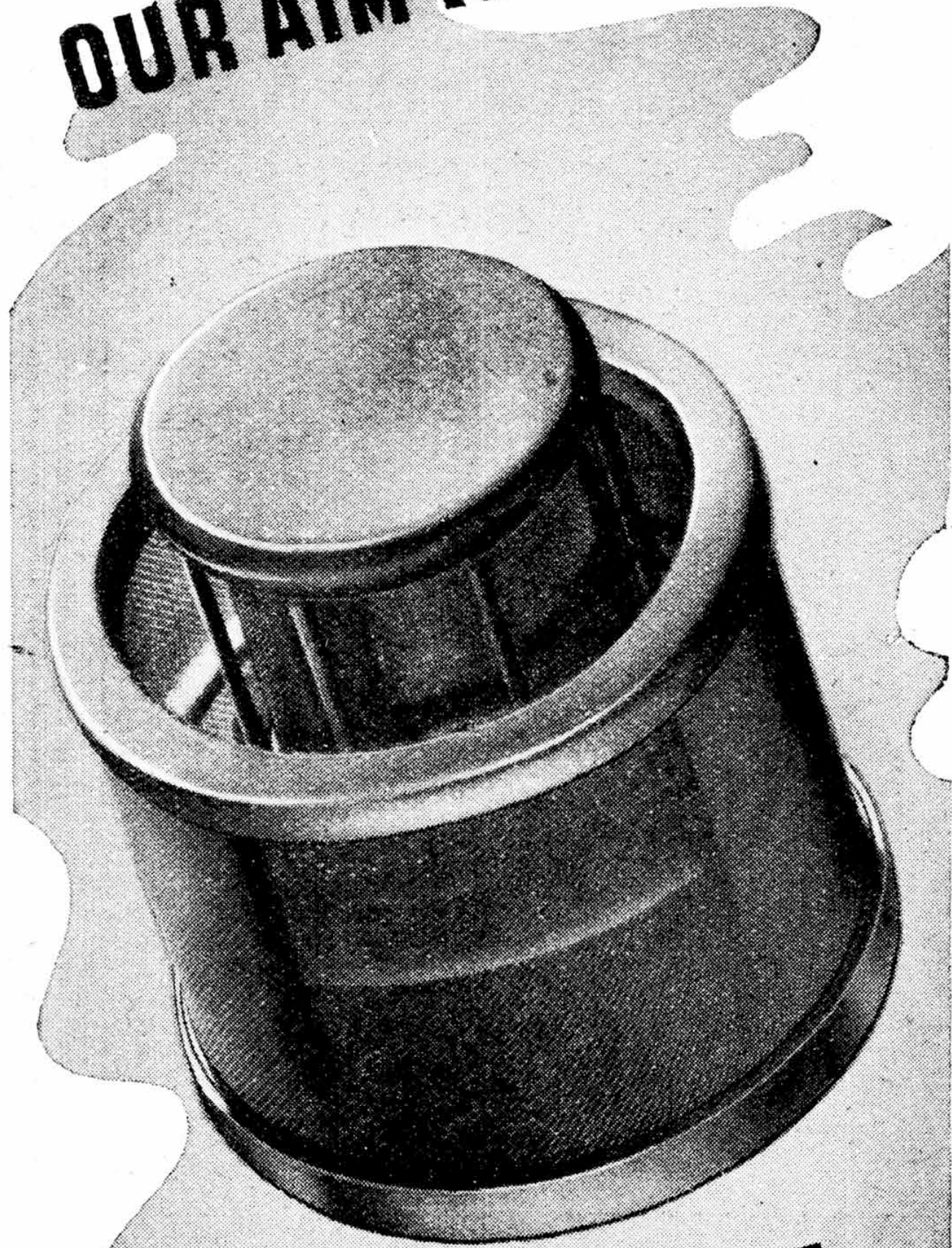
ROBERT M. FORRESTER, JOHN M. SIM, WM. GOODWIN,  
H. H. SHEUCH, WM. STEEDMAN, D. C. FRASER.

[The Navy, like the Merchant Service, would be desolate and bereft without its Scottish engineers and we should not wish to overlook the work of the Scots in putting this "air dockyard" on its feet. Our reference to Jersey Airways implied the particular significance of having engineers accustomed to air operation and to the specialist work of handling its casualties. The Scots brought the skill and the ground engineers added aeronautical experience.—Ed.]



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## Bored and Lodging

Being used to our Managing Director, who is the sort of go-getter who buys himself a dozen sets of false teeth at a time, Mr. Pobottle has found it difficult to adapt himself to Civil Service methods.

On arriving at the Ministry of Shove, Mr. Pobottle spent his first week vainly trying to get into the building. Production of his birth certificate, his identity card, his marriage certificate, his school certificate, his ration books, his passport and three forged references from us had no effect; and since the place that issued passes was inside and Mr. Pobottle was outside, the thing began to look like an impasse. In his third week, however, Mr. Pobottle abandoned the tentative and apologetic approach and walked briskly in flourishing his card of membership of the Whoopee Club. This proved so successful that he was admitted without question and has, in fact, continued to rely on this technique to this day.

Having at length gained admission Mr. Pobottle found that no room had been allotted to him, and inquiry showed that not only were no rooms available but that none was likely to be available.

For his first three months Mr. Pobottle therefore worked in the corridor, sometimes writing minutes on the wall with a burnt match-stick, and at other times carving them on the floor with a pocket knife. He says it was cold, but that at least nobody could lose what you produced.

As winter approached, however, Mr. Pobottle began to feel the need for a better bivouac. He accordingly selected a pleasant room, waited until the occupant left for a few minutes, entered, placed a notice on the door saying "J. Q. Pobottle, D.D.R.Q.S.T. and L.," and settled down. The previous inhabitant, on returning, assumed that the weekly move had taken place and wandered miserably off to find his new room. He was discovered weeks later lying half-frozen outside the Ladies' Lavatory singing "Das Wandern ist der Mullers Lust," having apparently lost his mind as the result of cold and privation.

But Mr. Pobottle was not entirely out of the wood. It is true that people began to bring him numbers of files, mistaking him for another department. But he was unable to deal with them adequately since the room he had acquired had no furniture. Judging from marks in the dust the previous inhabitant had spent his time lying on the floor near the radiator.

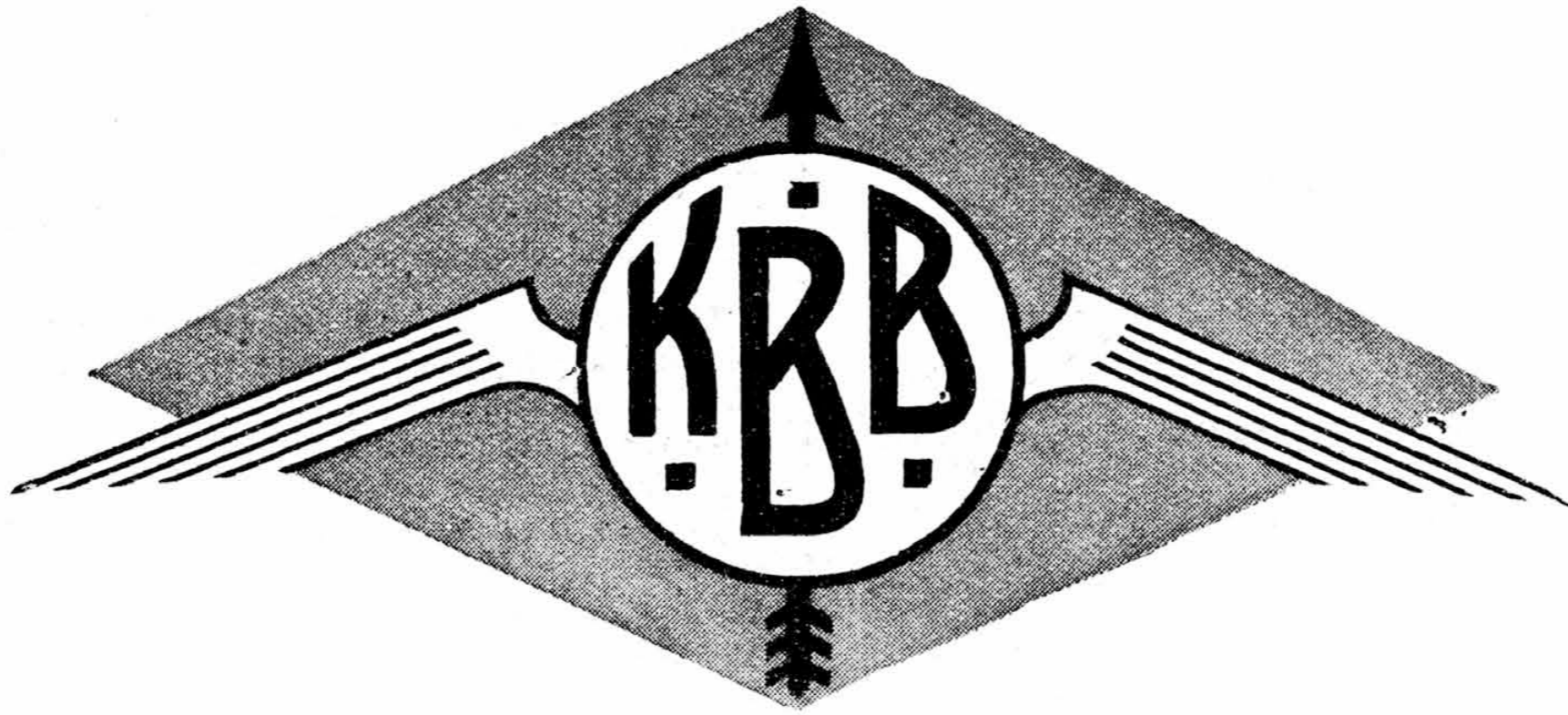
By judicious burglary Mr. Pobottle acquired a table, but as everybody took his chair with him to lunch, it was some time before Mr. Pobottle could obtain one. For some weeks he alternated between standing up and stooping, kneeling before the table as if in prayer, and sitting on the floor under the table with his paper pressed to the underside of its top.

At last, however, he had the good fortune to come upon a very old Civil Servant who had died at his work some days before and in whom no one else had yet detected the vital change. Laying the corpse reverently on the floor, Mr. Pobottle levanted with the chair and screwed it to the floor of his office.

Deciding that he might now regard himself as an office-in-being, Mr. Pobottle wrote a lengthy minute to Establishments requesting one partners desk, three telephones, one armchair (swivel), one armchair (leather), half-pint of ink, one blotter, two filing cabinets, one bookcase and a waste-paper basket. A wastepaper basket was becoming essential and he felt that this was the most likely way to get it.

Two days later a Hollerith Tabulator was delivered in error, but this was soon removed and after that nothing much happened for a bit, except an invitation to join the Ministry's Youth Movement. One day, however, a man from Establishments came in to view Mr. Pobottle's room. Later, men removed Mr. Pobottle's 4-ft. unstained deal table and replaced it by a 4-ft. unstained deal table with an ink stain on it. After that there was some delay.

*Pobottle*



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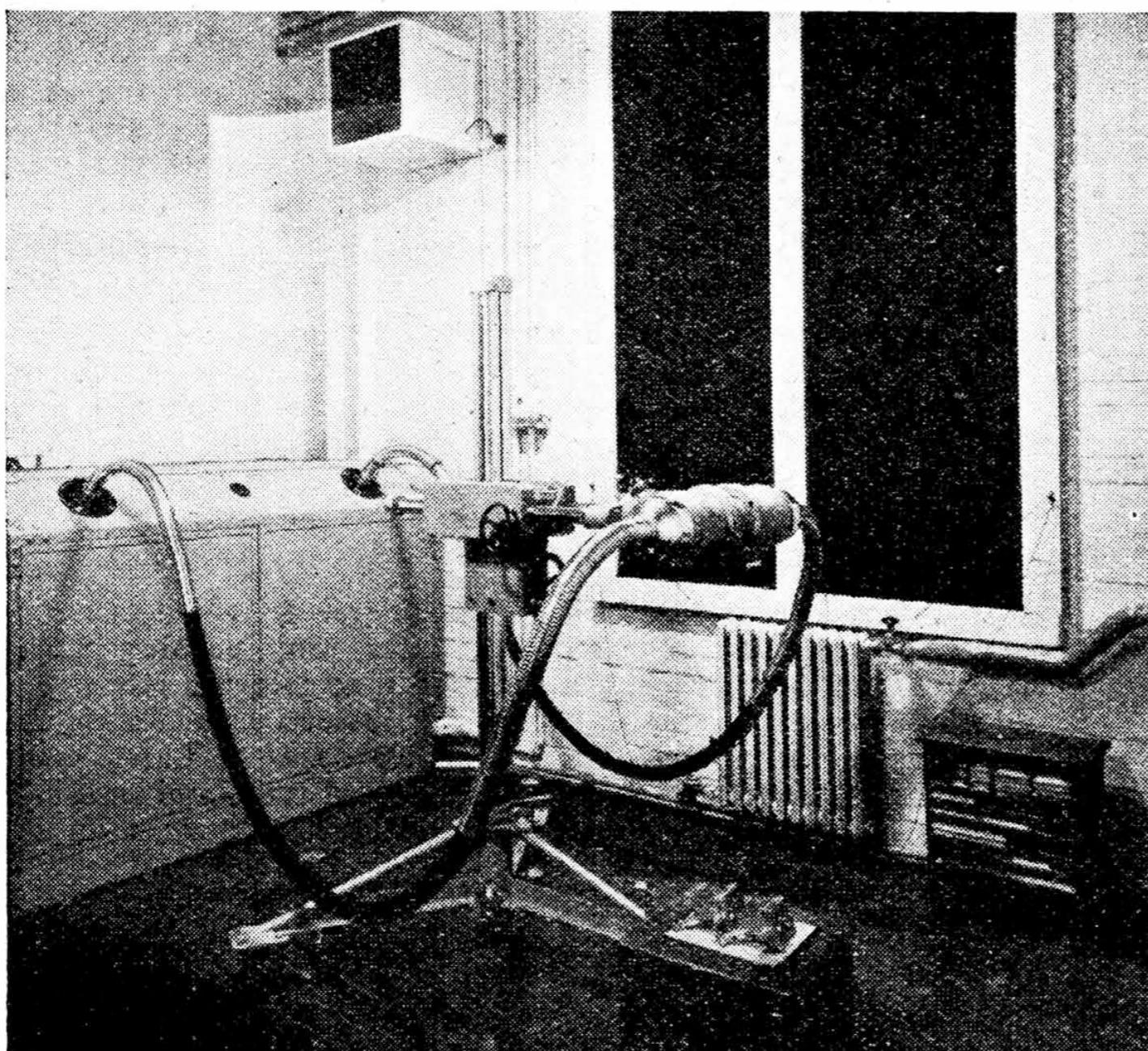
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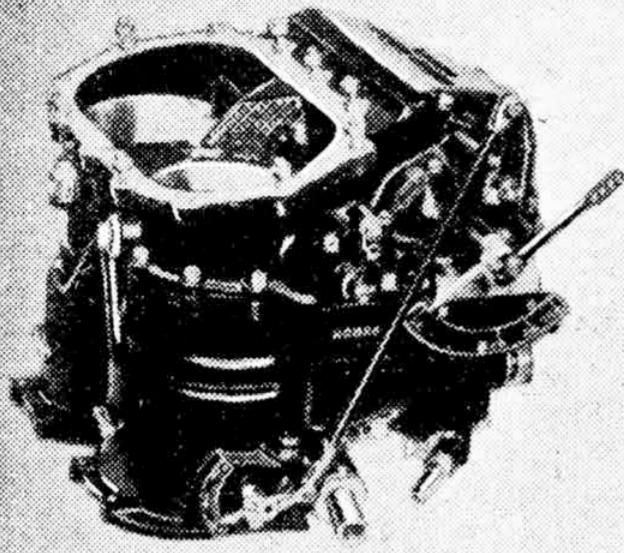


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Information concerning the School, with a syllabus of the course, can be obtained from the Kodak School of Industrial and Engineering Radiography,

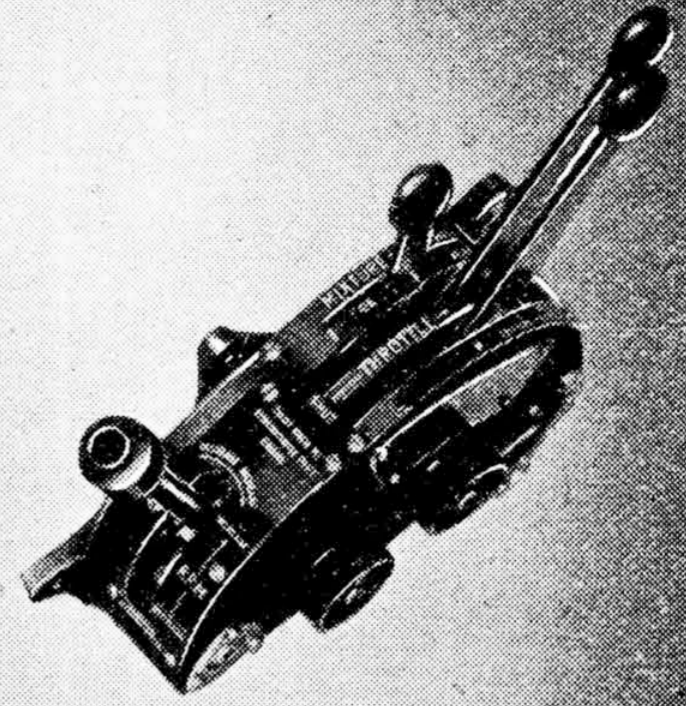
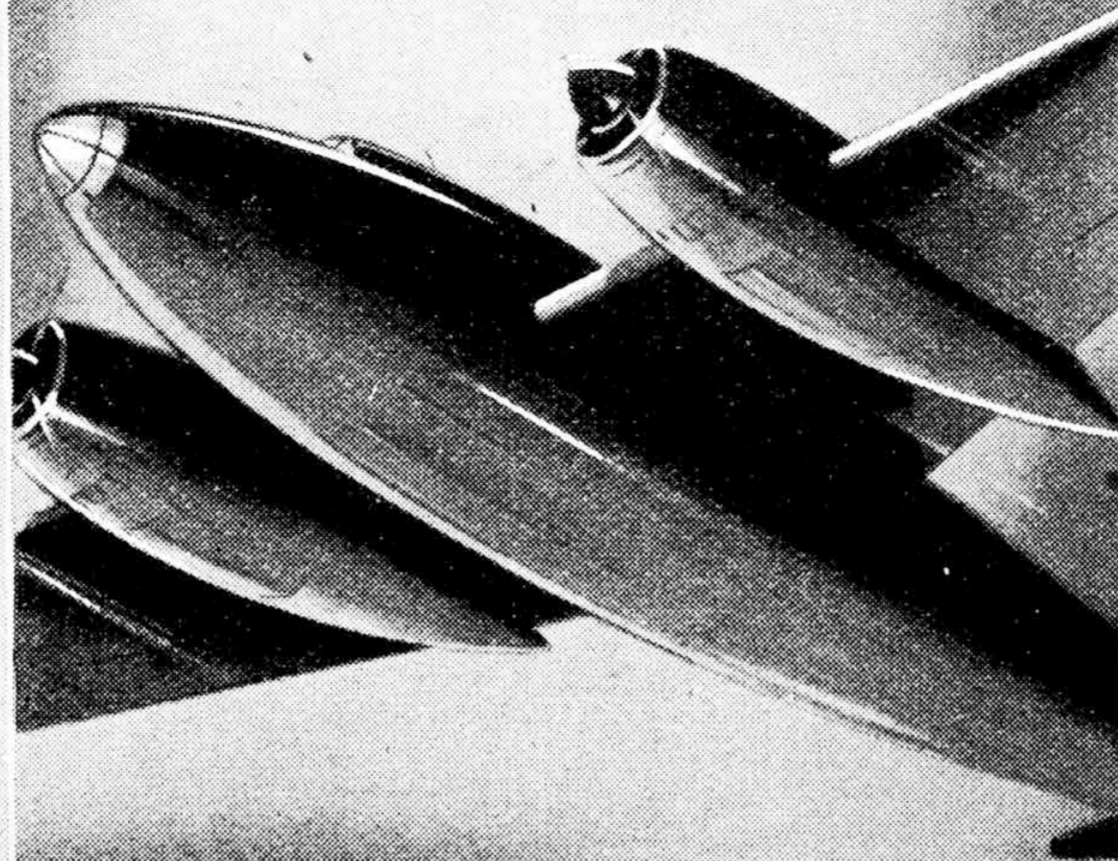
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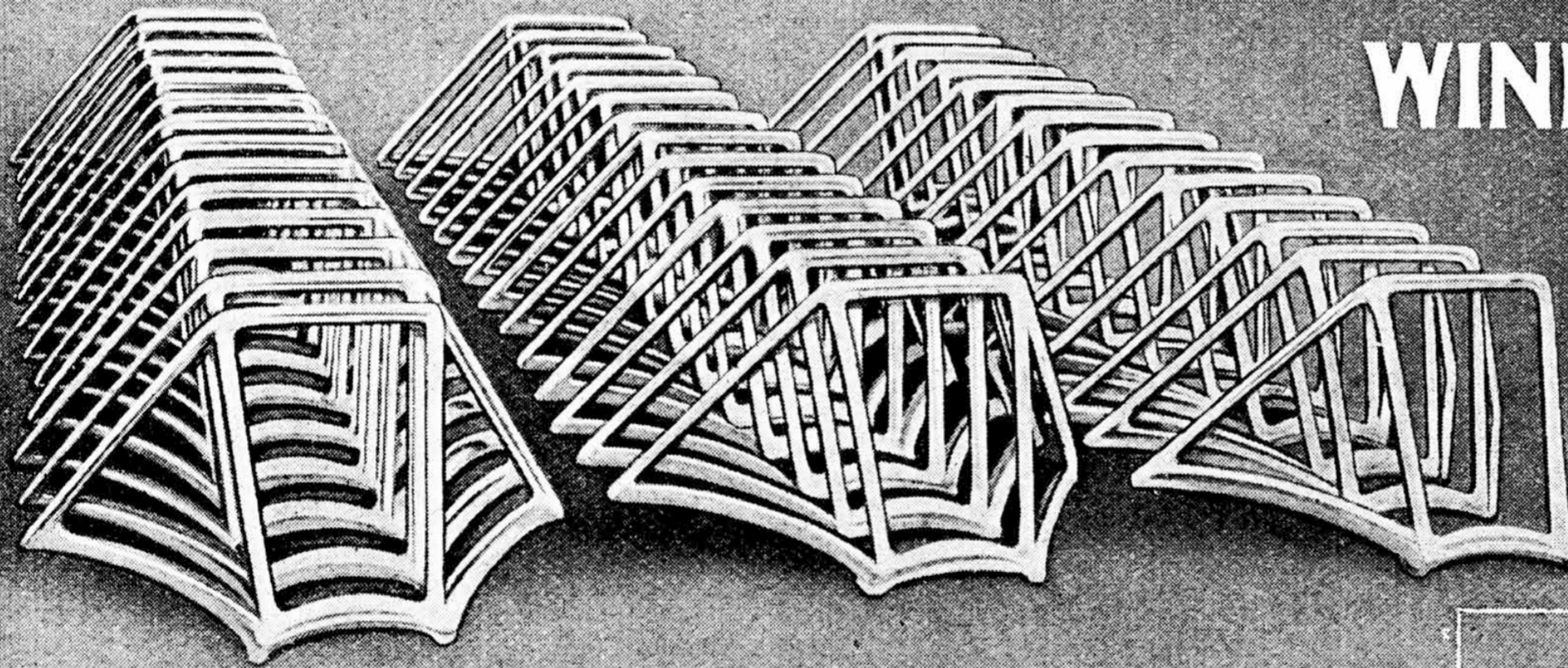
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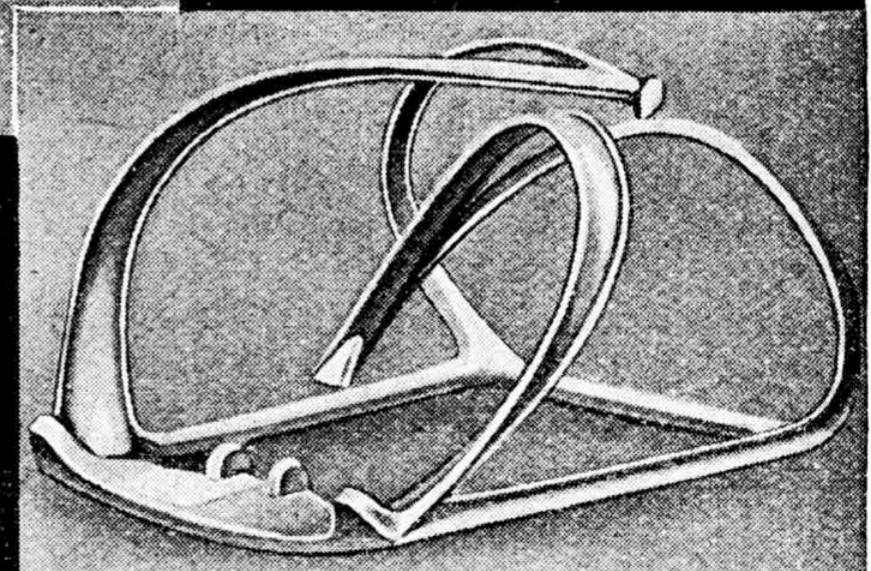


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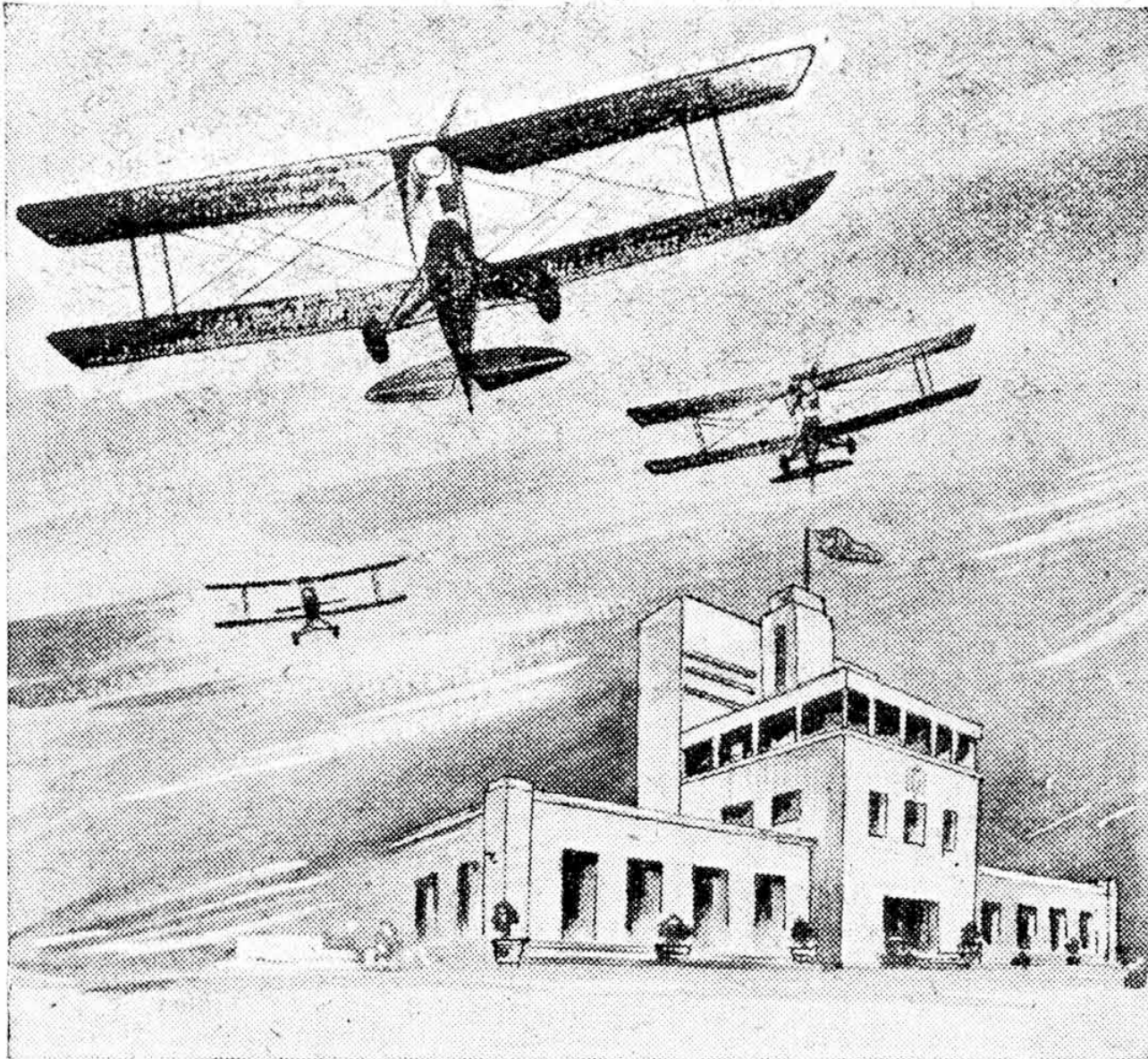
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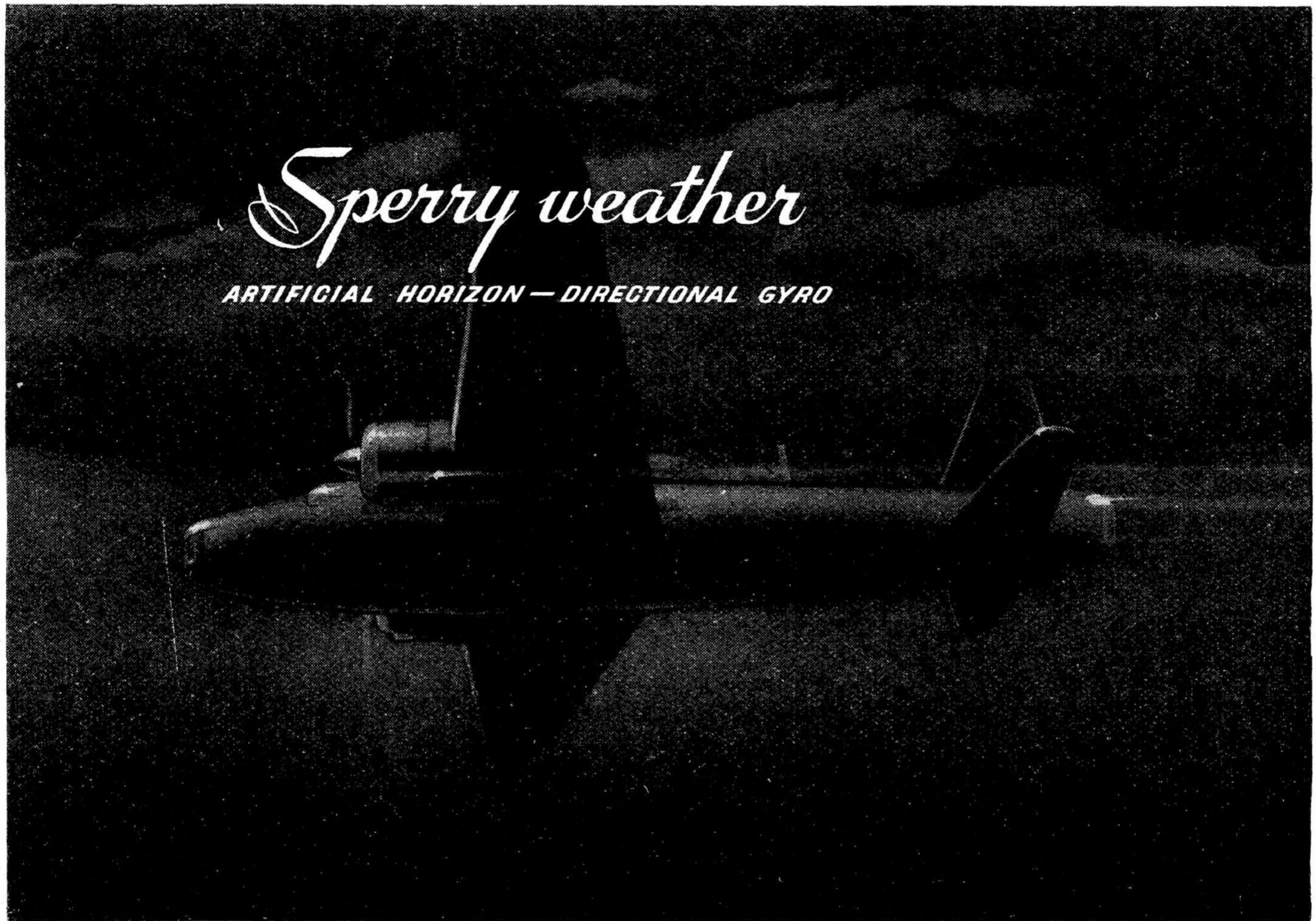
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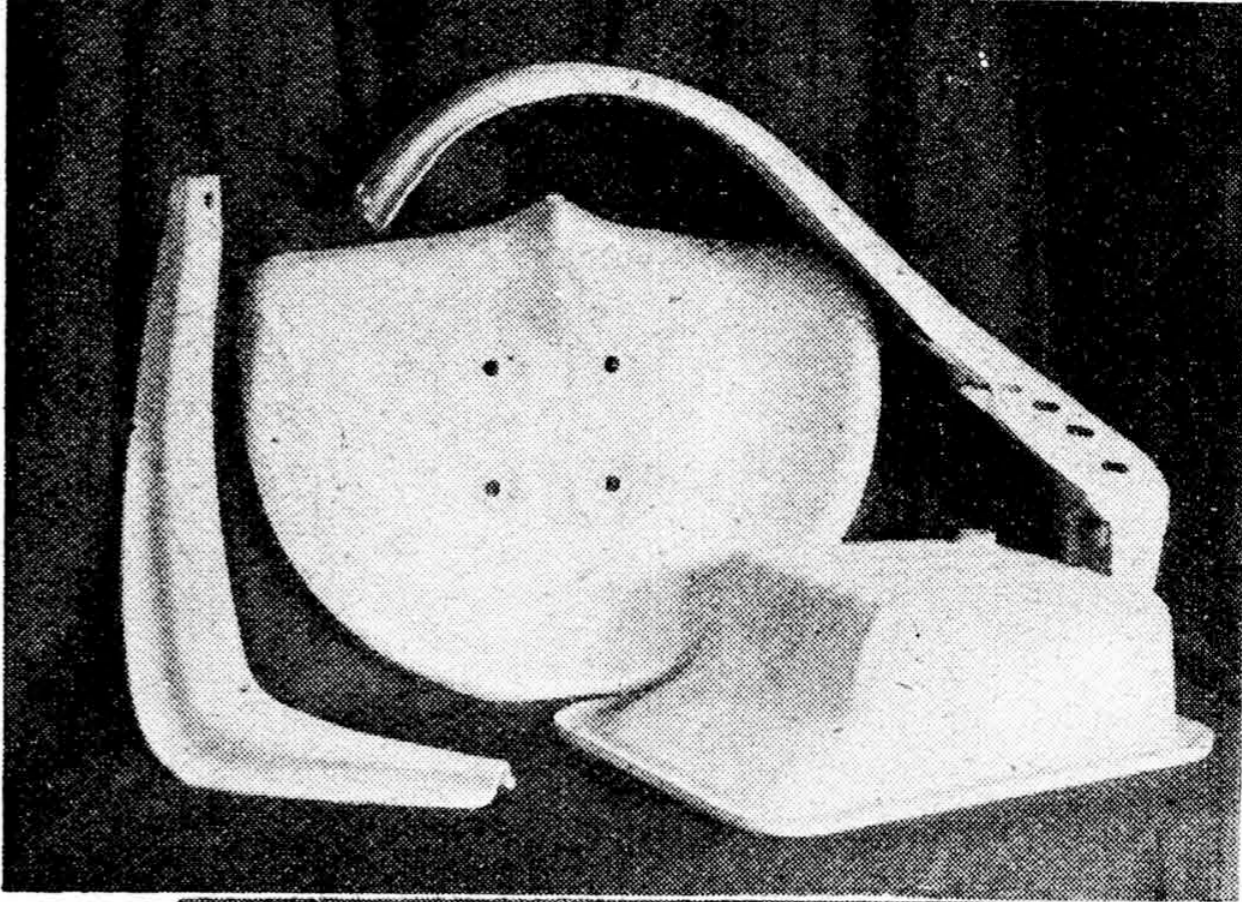
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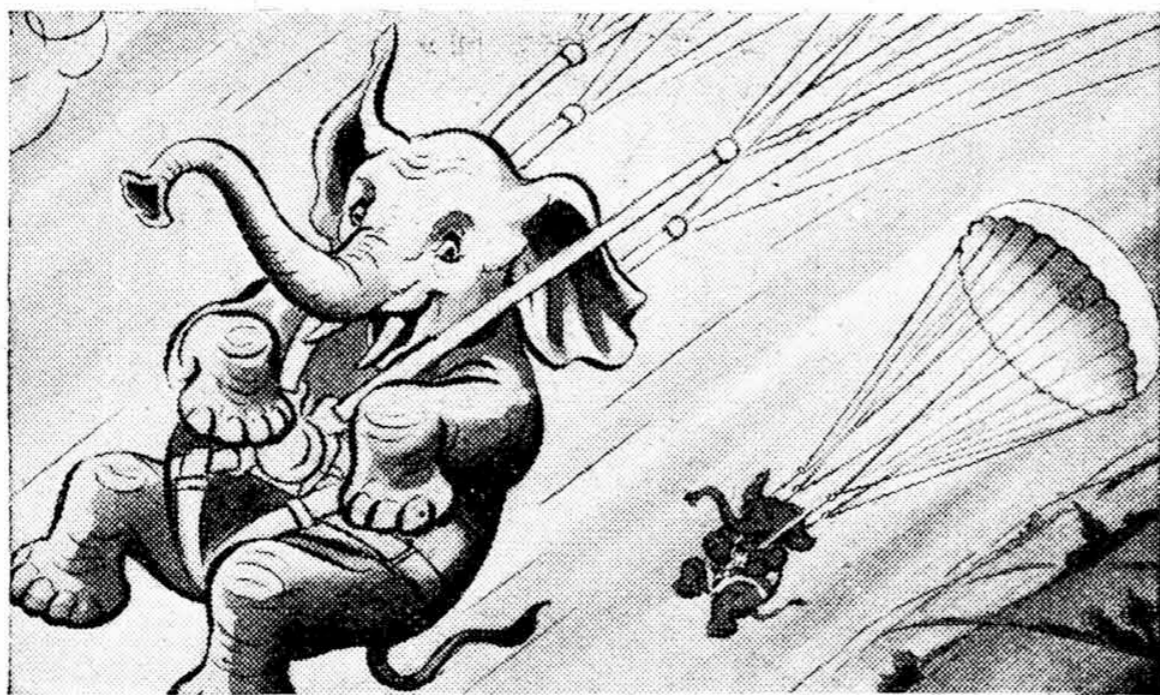
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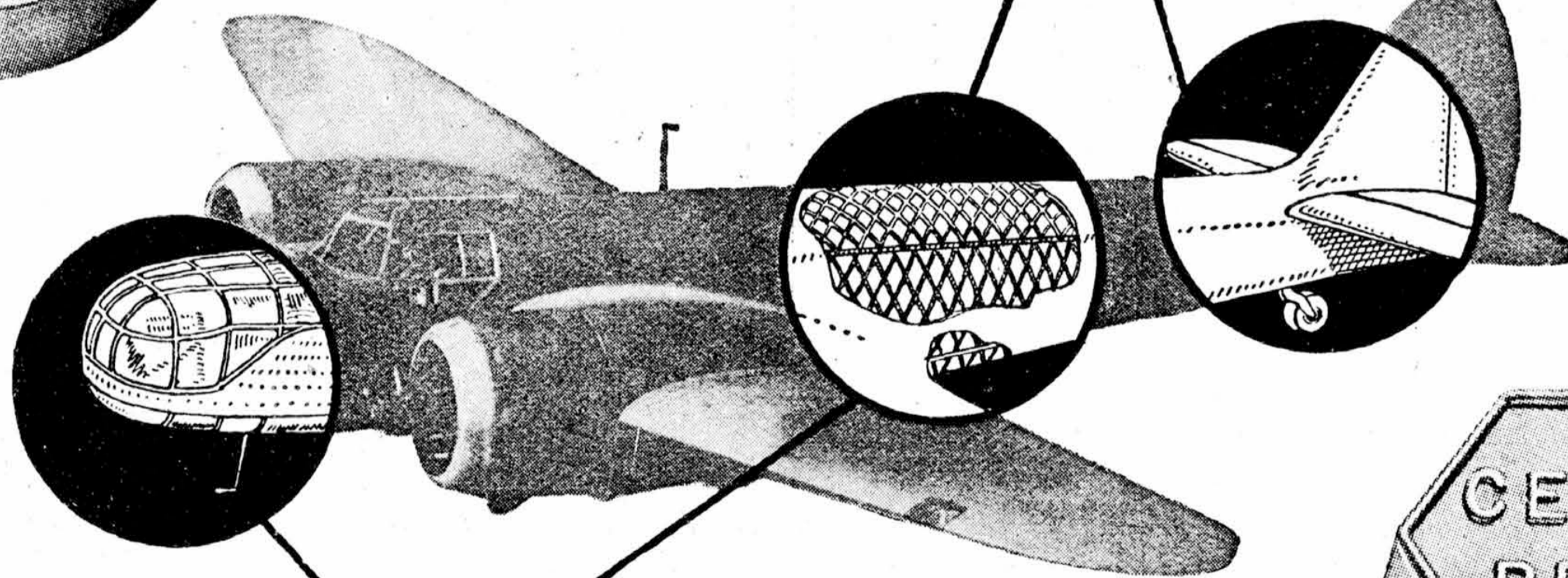
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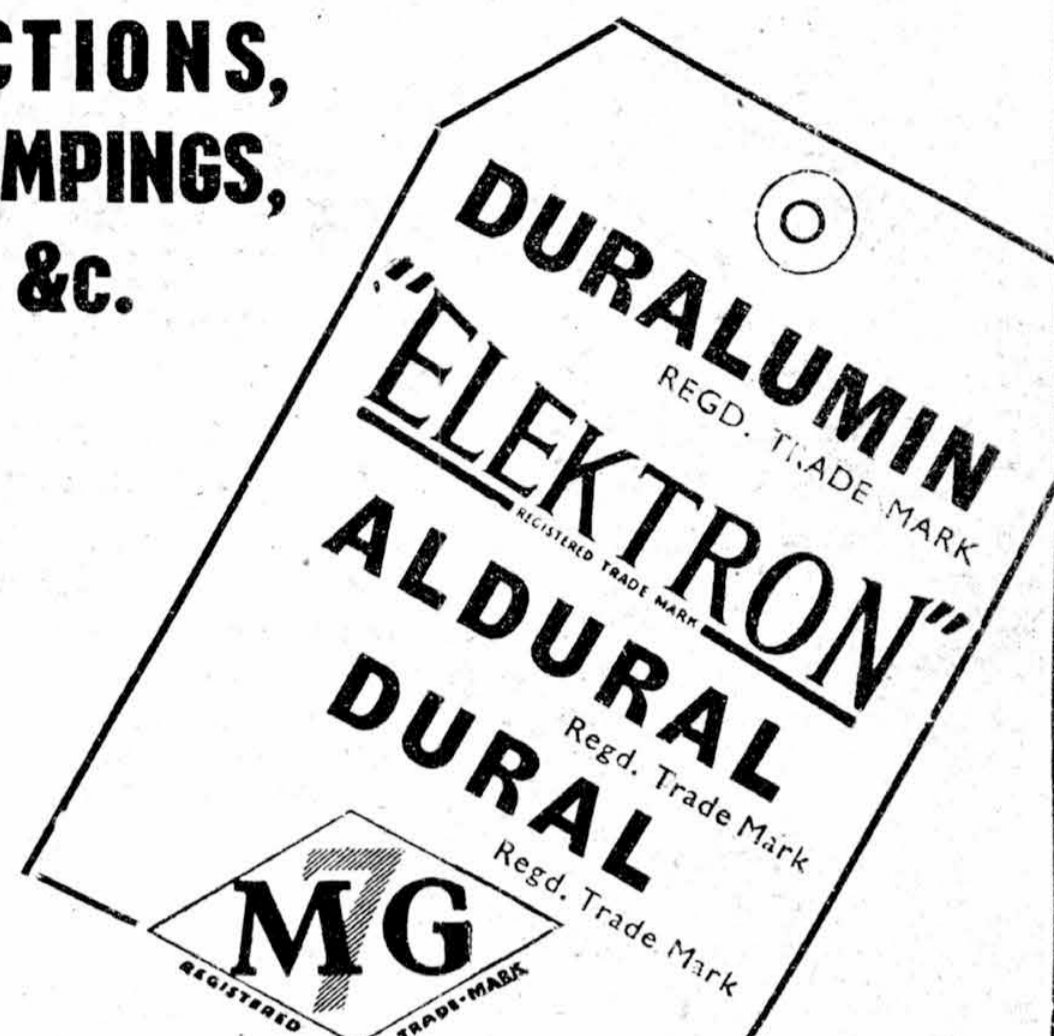
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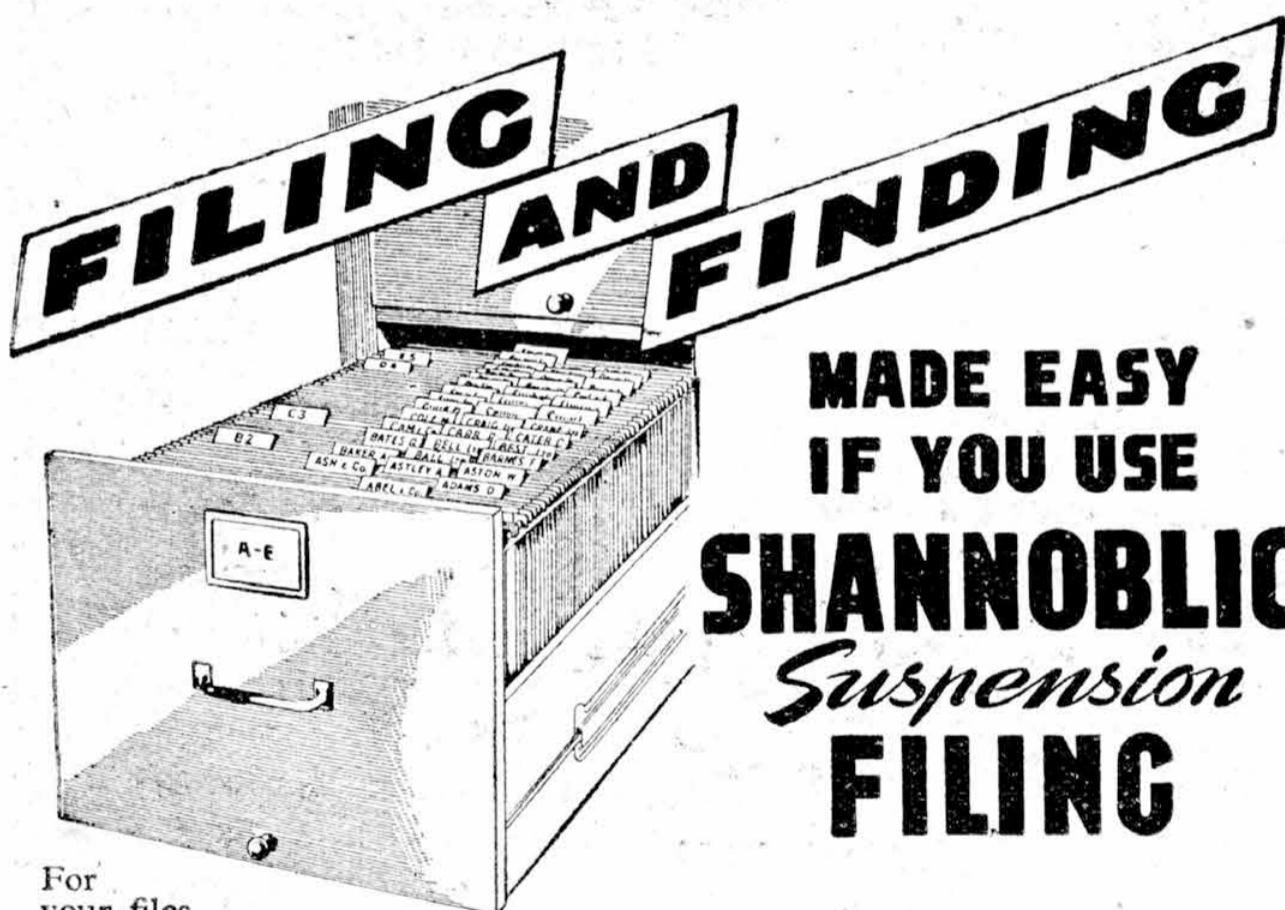
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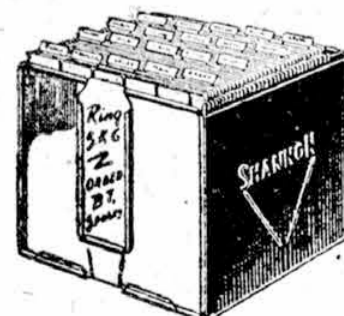
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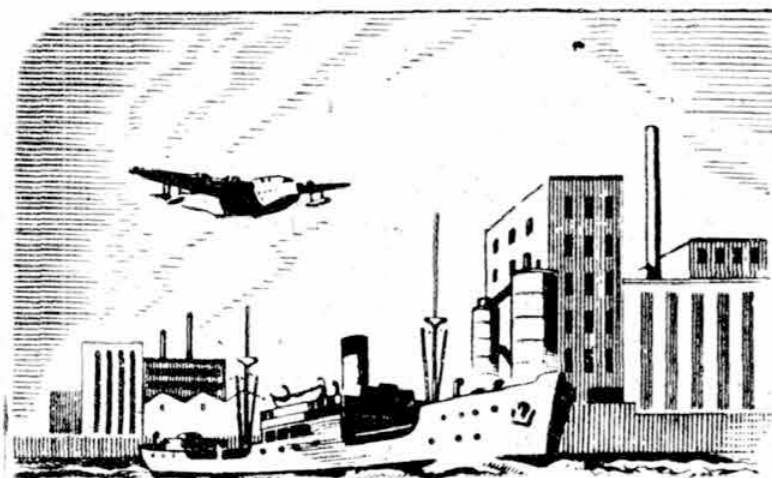
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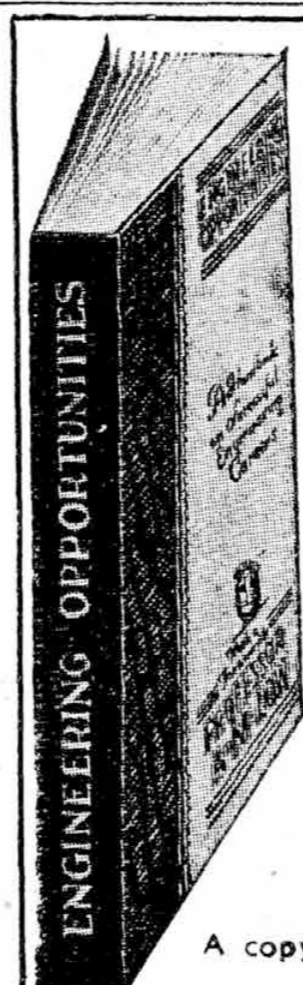
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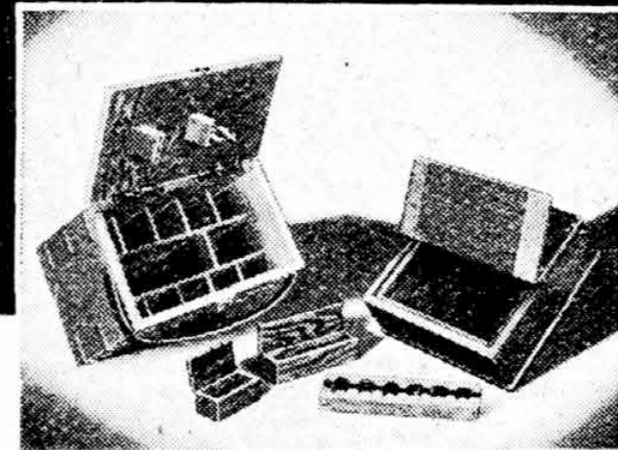
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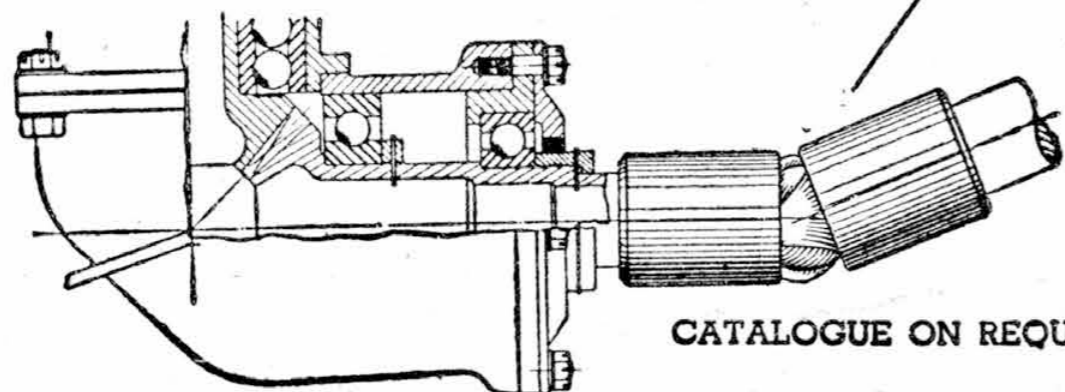
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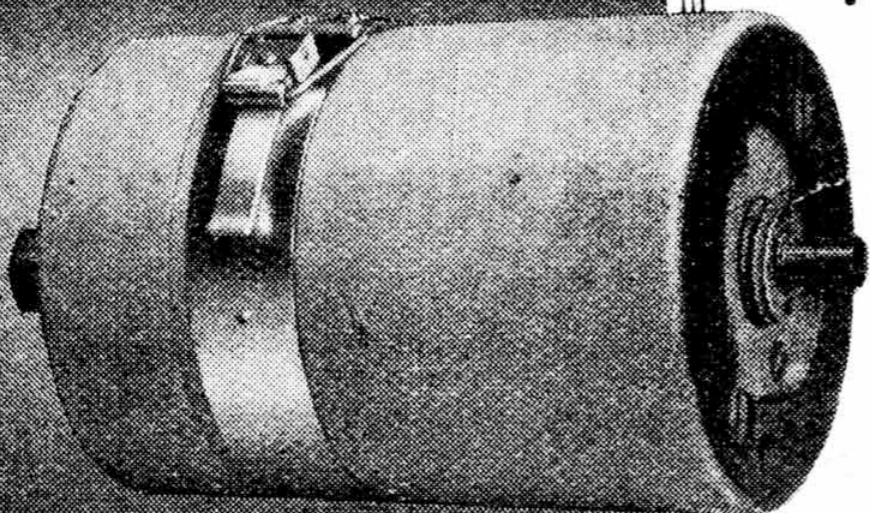
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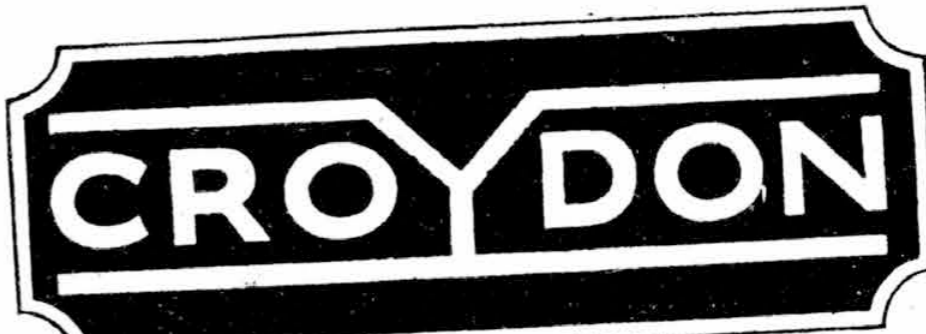
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