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# THE AEROPLANE

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**Aeronautical Engineering**

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## MATTERS OF MOMENT

### Guerrillas on the Sea Routes

WHAT MALTA has been to the Mediterranean, Madagascar and Ceylon between them should be to the Indian Ocean and the Red Sea. The Germans and Italians have found Malta so serious an obstruction to their traffic that they have expended more of their air effort against it in the last six months than they have devoted to the whole of Great Britain. They probably hope still to make it unfit for use. If they believe they stand a chance of taking it they will certainly attempt an invasion. In the Indian Ocean, the islands of Madagascar and Ceylon could be similarly obstructive to British traffic if they should come into the possession of the enemy.

Germans in the Mediterranean and Japanese in the Indian Ocean had hoped jointly to close both of the sea routes used by the British to serve the Middle East. France has had to be squeezed again between the upper and nether millstones, as she was in Syria, to make sure that Madagascar should not become a base for operations against her former Ally. For that, France must thank her new gauleiter, Laval, and those who forced Laval upon her. She may have to thank the same evil genius for the temporary loss of other colonial territory. Wherever French possessions touch the seas, they represent points of uncertainty and anxiety to the Allied nations. The risk of their being allowed to harbour guerrilla forces on the flanks of Allied sea routes is too great to warrant a strict observance of international law in relation to a government under duress by the enemy.

#### Land Bases for the Air Arm

Without sea routes, the Allied nations in the East or in the West could have no hope of containing the enemy or of securing bases from which to strike at his more tender parts. The expeditions which are to hold him and to dig inwards at his vitals must travel by sea and be nourished and sustained by ships bearing the supplies and arms which Great Britain and the United States are producing. Ultimately the Air Arm should be the decisive factor in reducing the aggressors, but it must have bases within easy range and must be sure of its supplies. Not yet is it likely to be able to operate its own air supply services. It must rely, like the Army, on the sea to carry its requisites. Enemy plans for harassing the sea routes fall naturally therefore into the general scheme of operations prepared for high Summer. The repeated attacks on convoys bound for Murmansk afford evidence of the importance which the enemy rightly attaches to the war

at sea. In those attacks, destroyers, submarines and bombers play their part jointly. The enemy would like to bring such a combination to bear on Allied convoys wherever possible.

That can be done only in reasonable proximity to land or in those circumstances in which aircraft carriers can be safely brought within range of the sea routes. Submarine warfare can be widespread. Surface vessels need a high general superiority to risk operating far from a base. Aeroplanes, if they are to be employed on the large scale which gives good results, must work from land bases. Germany has 2,000 miles of Atlantic and Arctic coastline from which to send her aeroplanes against ships leaving Great Britain for other scenes of war. She has more coastal bases on both sides of the Mediterranean. But she has none yet along the Western and Eastern coasts of Africa and none on the Western side of the Atlantic. Japan likewise has not yet gone far enough to the West or the South to put land-based aeroplanes on the track of ships bound for India, the Middle East or Australia from Great Britain and the United States.

#### Bombers Over the Sea

While both enemy Powers must depend chiefly on naval operations to limit the extent and intensity of Allied operations against them, the scales are not weighted too heavily against the nations which can build ships faster than their enemies. If Japan had needed reminding of the high effectiveness of land-based aircraft, she would have been impressed by now with the load of trouble she has had to bear in New Britain and New Guinea. Most of that derived from the operations of Australian and American aeroplanes working from land bases not too far removed. The Australians had the aerodromes; the Japanese had to make most of theirs or trust to the help of aircraft carriers. The Germans are beginning to suffer in the same way. Their naval bases, whether in Germany, France or Norway, serve them uncertainly under the frequent pounding of bombers based on Great Britain. Unless they can beat the bomber in the air, the only sure cure is to deprive it of its bases. To Germany even more than to Japan, bases for bombers to support the attack on Allied shipping are of enormous value.

France has bases for which Germany would be willing to give much. French Equatorial Africa abuts on British possessions in West Africa. Dakar is within easy flying



SUNLIGHT AND SHADOW.—A Hurricane bomber shielded by trees on the edge of an aerodrome makes an attractive picture in the sunshine.

distance of Lagos and Bathurst. French islands lie some 90 miles off the coast. A French air route runs across the Sahara from the Mediterranean to the West Coast. There are good air stations in Tunisia. France, furthermore, has bases on the other side of the Atlantic. The islands of Martinique and Guadeloupe and the territory of Guiana in the Caribbean are near enough to some of the sea routes of the United States to be of particular interest to the Germans. There have been rumours for many months, too, that the Germans were trying to arrange with Spain for the use of the Canary Islands. Portugal has lately sent extra troops to Madeira. Every possessor of territory on Allied lines of communication has realized long since how much Germany would like access to them and how relatively helpless she is to take the more distant ones without the willing or unwilling acquiescence of their owners.

Madagascar was the most glaring example of a detached vantage point, well equipped for naval purposes and provided with enough aerodromes to house a big raiding force. It could have given the Japanese or the Germans or both the power to interfere by aeroplane with all the traffic passing within 1,000 miles of the coasts of East Africa and by naval forces with all shipping over a much wider range. Now that it has been saved from enemy use, the incentive of the enemy in the East and the West to secure other places, from which Allied shipping may be attacked, is doubled. Germany will do anything she can think of to weaken the resistance of the Russians and the British against her offensives in Russia and the Mediterranean.

Japan, warned by her naval losses in the Solomon Islands or the vigorous strokes that are coming against her, will strive to stem the flow of military and naval strength across the Pacific to Australia and through the Indian Ocean to India. Islands and coastal belts are becoming of greater significance than fortresses. Those who look for straws in the wind may have noted that, while Madagascar was being taken, the British were also making a commando raid on the small island of Kufo near Crete.

Tension is rising in the ranks of the enemy. If the Chinese can raid Shanghai, the Russians might be able to put a force ashore one night somewhere in the Baltic. If the British can come ashore at St. Nazaire, they might equally arrange a raid on Sicily. The enemy is spread too far about the face of the earth to be able to make a solid front around the whole of his occupations. He can no longer be certain which are his vulnerable points. He is kept guessing as to where the fiercer thrusts will enter and he tries to think still of using attack as his principal means of defence. For that reason, French and Spanish bases draw him. In Madagascar he failed; yet Madagascar strengthened his arguments for facilities in the others and Laval was always willing to do a political deal.

War against Allied shipping is an integral part of the war which is being made on Allied Armies. French territory has already played too big a part in that aspect of the German game. French colonial possessions must certainly not be allowed to become centres for the extension of German piracy.

## The Right to Victory in the Air

WHEN the German Air Force has been "hammered out of shape," said Sir Archibald Sinclair last week, then will come the invasion by the British. If that remark is set alongside the frequent reports that the German fighters

decline combat except when R.A.F. bombers are of the party, it may seem to be promising a somewhat distant development. That certainly was not the way in which R.A.F. fighters won the Battle of Britain, and it is probably

not the way the Luftwaffe would choose to fight the Battle of France were not economy in fuel, machines and pilots a matter of some importance to Germany. Apparently, the R.A.F. can bring the German fighters to combat by using bombers as bait and the rate of "hammering" can be accelerated at need by bringing bombers into the fight.

One disadvantage in having thus to bait the trap is that enemy fighters naturally choose to concentrate on the bombers and still have to be forced into dog-fights by being cut off from their intended victims by the escorting fighters. Superiority in numbers has less effect if the defending fighters tend to crowd the air space by bunching in the neighbourhood of the protected bomber formation and dive headlong for home as soon as they have made their attack and expended their ammunition. The process of reducing a fighter force is a matter of some difficulty, as the Germans found over South-East England. They had some success in compelling the R.A.F. to evacuate temporarily the more advanced aerodromes, but they were unable to inflict heavy enough losses on the fighter units in the air to put them out of the fight.

Judged by the experience gained in the Battle of Britain, there seems to be something to be said for the view that the reduction of a fighter force is not an essential preliminary to an invasion. The Germans in the Autumn of 1940 would obviously have been wise to concentrate on getting their bombers through. They would have been helped in that by keeping British fighters out of the coastal aerodromes and they would have had to fight hard and accept heavy losses in conveying their bombers farther inland. If they really believed that the destruction of the R.A.F. was necessary to the success of an invasion preceded by heavy and systematic bombing, they must have been deluded by the ease with which the much smaller Polish Air Force had been crippled and made useless. In Poland the air stations were knocked out and the Air Force ceased to have any operational value. In Great Britain there were too many air stations to be treated in that way and the British fighters were too good to be defeated in the air.

Air supremacy does not necessarily depend on destroying the enemy. It depends on the ability to defeat any forces the enemy can send to dispute the right of a raiding force to carry out its orders. Supremacy may be helped by driving the enemy back to bases farther in the rear. The bombers, escorted by fighters, can accomplish that. It depends then on the quality, fire-power and skill in tactics and manoeuvre of the fighter force accompanying the offensive and on the strength of that force in relation to the

## AIRDENTITIES—I



Honorary Air Commodore The Right Hon. Winston Churchill, P.C., C.H., F.R.S., Prime Minister, First Lord of the Treasury and Minister of Defence.

enemy. When the British invade, they will need all the bomber support they can get. If the bombers can satisfy the requirements of the Navy and the Army it will be because the fighters are capable of keeping enemy fighters off their tails. The invading force will also need protection against enemy bombers and that again is a task for the escorting fighters.

Given air supremacy, the invasion, as Sir Archibald Sinclair said, can then take place. Air supremacy may have to be demonstrated in terms either of heavy enemy losses in the air or of successful day bomber raids made without serious casualties from fighter attacks. In demonstrating the supremacy of the R.A.F. over Northern France, the Luftwaffe will assuredly be "hammered," but

it will probably suffer a still worse hammering when it attempts to throw back the invasion. The business of the R.A.F. in these preparatory days is to establish to its own satisfaction and in the collective mind of the Luftwaffe's western air fleet the conviction that it can control the skies over Northern France. The object of the Air Arm in the last War was to drive the German aeroplanes out of the battle area. A similar aim will have to be achieved in France this year, and experience shows that it cannot be done in advance. The function of the preparatory moves is to prove to both sides that it can be done on the day and can continue to be done as long as the military situation demands it. The "hammering" to which the Secretary of State referred represents the process of establishing in advance a right to victory in the air over a particular area.



AMERICAN EAGLES.—A Spitfire VB flown by the Eagle Squadron of the R.A.F.

## The Prime Minister Broadcasts

MR. WINSTON CHURCHILL, celebrating the second anniversary of his acceptance of office as "the King's First Minister," broadcast from London on May 10. He surveyed the events of the past two years, laid stress on Hitler's two strategic blunders, and described the horrors which the Nazi dictator had loosed upon Europe. Turning to the War in the Air he said:—

"Now is the time to use our increasingly superior air strength to strike hard and continually at the home front in Germany, from which so much evil has leaped out upon the World and which is the foundation of the whole enormous German invasion of Russia.

"Now—while the German armies will be bleeding and burning up their strength against a 2,000-mile Russian line, and when the news of casualties by hundreds of thousands is streaming back to the German Reich—now is the time to bring home to the German people the wickedness of their rulers by destroying under their very eyes the factories and seaports on which their war effort depends.

"German propaganda has been appealing to British public opinion to put a stop to these severe forms of warfare which, according to the German view, should be the strict monopoly of the Herrenvolk. Herr Hitler himself has not taken at all kindly to this treatment, and he has been good enough to mingle terrible threats with his whinnings.

"He warns us solemnly that if we go on smashing up the German cities, his war factories and bases, he will retaliate against our cathedrals and historic monuments, if they are not too far inland.

"We have heard his threats before. Eighteen months ago, in September, 1940, when he thought he had an overwhelming air force at his command, he declared that he would 'rub out'—that was the actual expression—our towns and cities, and he certainly had a good try. Now the boot is on the other leg.

"Herr Hitler has even called into question the humanity of these grim developments of war. What a pity this conversion did not take place before he bombed Warsaw, or massacred 20,000 Dutch folk in defenceless Rotterdam, or wreaked his cruel vengeance upon the open city of Belgrade. In those days he used to boast that for every ton of bombs we dropped on Germany he would drop ten times or even a hundred times as many on Britain. Those were his words and that was his belief. Indeed, for a time we had to suffer very severely from his vastly superior strength and utter ruthlessness.

"But now it is the other way round. We are in a position to carry into Germany many times the tonnage of high explosives which he can send here, and this proportion will

increase all the summer, all the autumn and all the winter, all the spring, all the summer, and so on, till the end.

"The accuracy of our bombing has nearly doubled, and with continued practice I expect it will improve still more. Moreover, at the same time our methods of dealing with his raiders over here have more than repaid the immense care and science bestowed upon them and the very large scale upon which they are applied.

"During the month of April we have destroyed about one-tenth of all the raiding aircraft which have assailed our island: whereas, acting on a scale several times as big, the losses we have suffered have been proportionately far smaller. We have waited long for this turning of the tables and have taken whatever came to us meanwhile.

### 'There They May Remember . . .'

"You will remember how the German propaganda films, thinking to terrorise neutral countries and glorying in their devastating violence, were wont to show rows of great German bombers being loaded up with bombs, then flying in the air in battle array, then casting showers of bombs down upon the defenceless towns and villages, choking them in smoke and flame.

"All this was represented to neutral countries as the German way of making war. All this was intended to make the world believe that resistance to the German will was impossible and that subjugation and slavery was the safest and the easiest road.

"Those days are gone. Though the mills of God grind slowly, yet they grind exceeding small, and for my part I hail it as an example of sublime and poetic justice, that those who have loosed these horrors upon mankind shall now, in their own homes and persons, feel the shattering strokes of retributive justice.

"We have a long list of German cities in which the vital industries of the German war machine are established. All these it will be our stern duty to deal with as we have already dealt with Lübeck, with Rostock and half a dozen important places.

"The civil population of Germany have, however, an easy way to escape from these severities. All they have to do is to leave the cities where munition work is being carried on, abandon their work and go out into the fields and watch the home fires burning from a distance.

"In this way they may find time for meditation and repentance.

### Gas Warning to Hitler

"There is one serious matter which I must mention to you. The Soviet Government have expressed to us the view that the Germans, in the desperation of their assault, may make use of poison gas against the armies and people of Russia.

"We are ourselves firmly resolved not to use this odious weapon unless it is used first by the Germans. Knowing our Hun, however, we have not neglected to make preparations on a formidable scale.

"I wish to make it plain that we shall treat the unprovoked use of poison gas against our Russian ally exactly as if it were used against ourselves, and if we are satisfied that this new outrage has been committed by Hitler, we will use our great and growing air superiority in the West to carry gas warfare on the largest possible scale far and wide against military objectives in Germany.

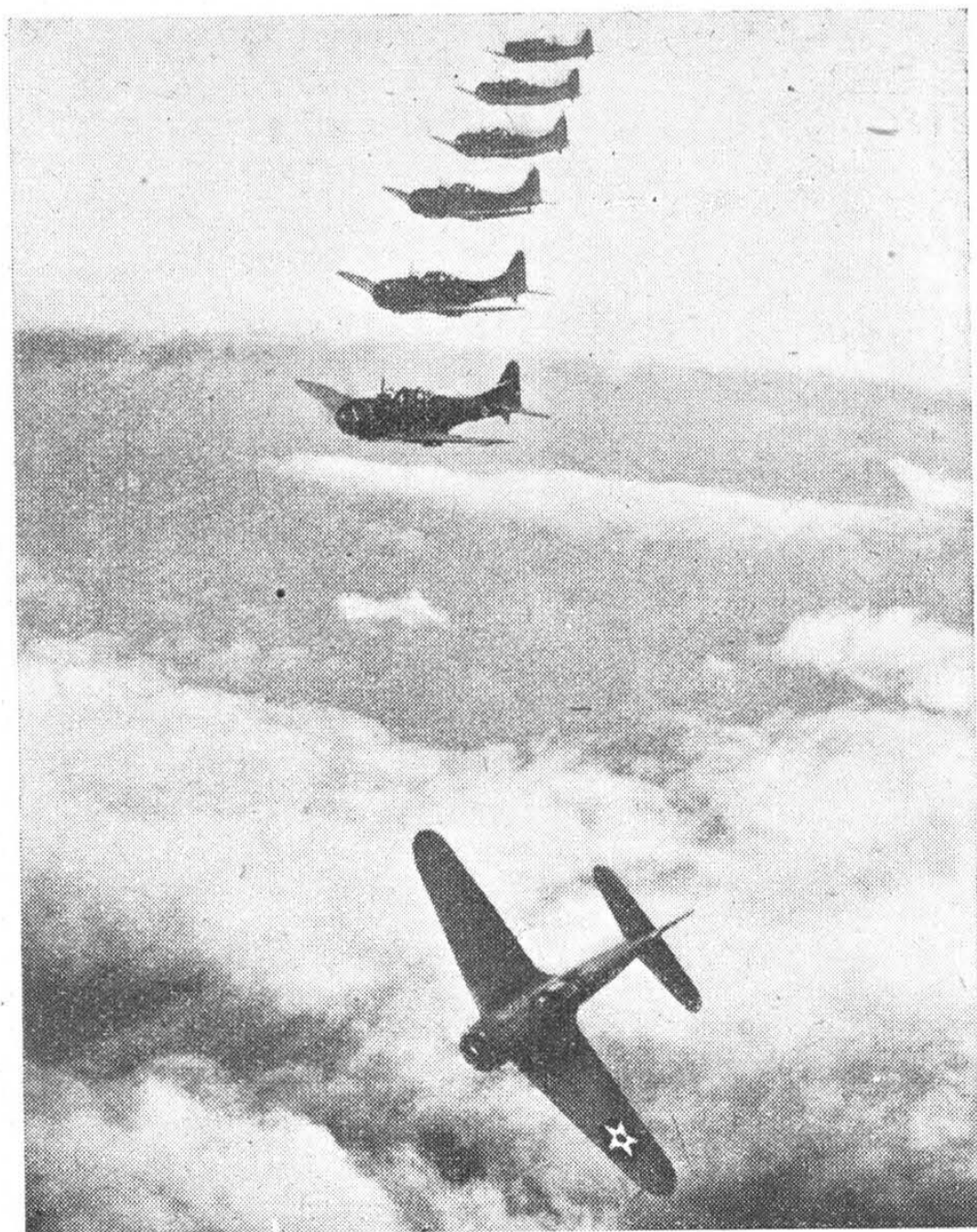
"It is thus for Hitler to choose whether he wishes to add this additional horror to aerial warfare. We have for some time past been bringing our defensive and precautionary arrangements up to date, and I now give public warning so that there may be no carelessness or neglect.

"Of one thing I am sure—that the British people, who have entered into the full comradeship of war with our Russian ally, will not shrink from any sacrifice or trial which that comradeship may require."

### A Terrible Nazi Summer

SIR ARCHIBALD SINCLAIR, Secretary of State for Air, speaking at Birmingham on May 8 said that looking at the War as a whole, the most remarkable fact was that the initiative was passing from Germany to the United Nations. Hitler did not choose to keep two-thirds of his entire fighter strength engaged in battle with the Royal Air Force at home, over Malta and in Libya, nor to expend his bombers in night attacks against our cities. But he had been forced to attempt by this means to bolster the civilian moral of Germany which was being shaken by the R.A.F. offensive.

The time had come when we were beginning to hit back hard, but on a scale which still only foreshadowed the force of the Anglo-American bombing effort to come. The main



PEEL OFF.—Douglas SBD Dauntless divebombers of the United States Navy peel off for attack.

objects of the bomber offensive were to relieve the pressure of the German Air Force and armies on Russia and to destroy Germany's capacity to make War. Much of our attack was directed against the Ruhr and the Rhineland which contained a concentration of war industry unparalleled on the Continent and that industry could not be dispersed.

The Baltic ports were important also. Hitler's reply was to send bombers to York or Norwich, Exeter or Bath, but this was not the mere frenzy of barbarism. This method was designed to create pressure upon the Government to move the anti-aircraft defences and to weaken those over our vital centres of production. We would not be deceived by that nor by the other trick of Nazi propaganda which sought to make us believe that night bombing achieved nothing and that the production of heavy bombers should be abandoned for lighter types. No finer testimony to the success of our policy could be wished for than this clumsy propaganda.

A terrible Summer was in prospect for the German Air Force. By day and by night they would be attacked by the R.A.F. This was the Battle of Britain the other way round—superior quality, better pilots, better training, better aeroplanes—we had all that in 1940 but now we had greater numbers as well. We knew in 1940 that our air power would grow but the German Air Force knew that its power was waning.

Sir Archibald said that no one knew better than the air crews of the R.A.F. how much hard, strenuous, sound and honest work was being done in the aircraft factories in Great Britain. The men and women in the factories had their full share in the triumphs of the R.A.F. Praise should also be given to the pilots and air crews, the ground crews who helped them, the Intelligence, Administrative and Clerical staffs, the W.A.A.F., the Balloon Command, and the Training Command and those whose brains developed the ideas which had made the R.A.F. the most feared and powerful air force in the World.

Sir Archibald said he doubted if many people realised how much weaker in the air the country was at the beginning of the War than the Germans. The Germans had about four aeroplanes to every one of ours in this country.

He went on to praise the leaders of the various commands of the R.A.F. Fighter Command had shot down more enemy aeroplanes than it had lost in the first four months of this year, though operating over enemy territory. These leaders were not fighting a war of their own; Coastal Command worked all the time with the Navy, Fighter Command was active in the war at sea and Bomber Command spent much of its energies on naval targets. In the Middle East the Navy and the Air Force, and the Air Force and the Army were all co-operating.

The R.A.F. had to take a big share in the Battle of the Atlantic; it also had to deal with nearly half the German Air Force, including two-thirds of the German fighter squadrons, and the whole of the Italian Air Force in Western Europe and in the Mediterranean. Substantial supplies of aeroplanes were being sent to Russia, and to these commitments had been added the Air Defence of India and Ceylon, besides a contribution to the defence of Australia and New Zealand while those two Dominions continued to contribute to the operations of the R.A.F. at home and in the Mediterranean.

## A Turkish Tour

GENERAL SEFIK CAKMAK, Chief of the Turkish Air Staff, accompanied by Capt. Talat Biringen and Capt. Emin Dirvana of the Air Staff, and two tank officers, Lt.-Col. Pahsin Yaziciv and Major Galal Alkog, recently visited the British forces in the Middle East.

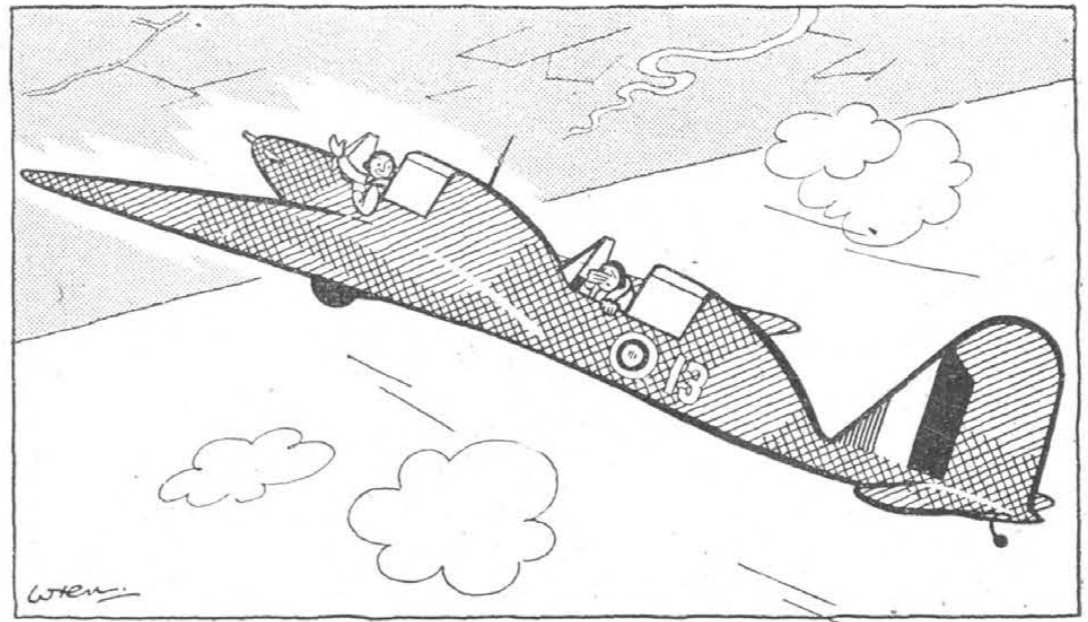
During their visit the Turkish officers saw a comprehensive cross-section of the Royal Air Force, the Fleet Air Arm and the Army in both Egypt and Libya. They toured fighter and bomber squadrons in the Western Desert, visited the anti-aircraft defences of the Alexandria district, inspected heavy bomber forces at the rear aerodromes and visited several of the operations rooms where they were shown the organisation of the R.A.F. on the ground.

Among the social entertainments given for the Turkish officers during their visit was a reception by the Air Officer C.-in-C., Middle East. They were also entertained by the Air Officer Commanding, Egypt.

## Russian Aeroplanes and the R.A.F.

R.A.F. test pilots have flown nearly all the Russian types of aeroplane, according to a statement made by Mr. Lyttelton in the House of Commons on May 5. He was replying to questions asking whether Great Britain was receiving particulars of the design and equipment of the aeroplanes and tanks built in Russia and if they were being built in Great Britain and America. Mr. Lyttelton replied that it was not in the public interest to give the information asked for.

## ODDENTIFICATION.—LIX



Its fighting days behind it, this veteran of France  
Has doffed its glasshouse, warpaint but continues to enhance  
Its long and faithful record, spread across the warring years,  
And now with grotesque double hump, in training guise appears—  
Some tow drogues while others train the man behind the gun—  
Like all of us, it soldiers on—the Battle's not yet done!

## The Mitsubishi 00

DETAILS are now available of the Mitsubishi 00 single-seat fighter monoplane of the Japanese Navy. It is the chief type of fighter used by the enemy in the Far East.

The Mitsubishi 00 ("Double Oh") is a low-wing cantilever monoplane of all-metal stressed-skin construction. It has a Nakajima NK-1 14-cylinder two-row air-cooled radial motor which gives 1,100 h.p. for take-off and 900 h.p. at 15,000 ft. The maximum speed of the 00 at a loaded weight of 5,140 lb. is 315 m.p.h. at 10,000 ft.

A streamlined extra fuel tank can be carried slung under the fuselage. With this tank the maximum range is 1,600 miles at 160 m.p.h. Alternatively a bomb of about 500 lb. can be carried in place of the fuel tank.

Armament is two 7.7 mm. (.303 in.) machine-guns on the motor cowling firing through the airscrew disc and two 20 mm. (.787 in.) carried in the wings. The armament is thus identical with that of the Me 109E. The 00 has an inward retracting hydraulically operated undercarriage and split flaps.

The "double oh" in the name comes from the Japanese system of naming their aeroplanes after the last two digits of the year in which the design was begun—in this case 2600 of the Japan Empire and 1940 in our calendar. The machine seems to be modelled on our own Gloster F.5/34 single-seat fighter which first flew in 1937 but was never put into production. Like the Gloster, the 00 is reputed to be very manoeuvrable.

DIMENSIONS.—Span, 39 ft. 5 ins.; length, 28 ft. 5 ins.; height, 9 ft. 0 in.; wing area, 256 sq. ft.; aspect ratio, 6.1.

WEIGHT.—Loaded, 5,140 lb.

PERFORMANCE.—Max. speed, 315 m.p.h. at 10,000 ft.; normal range, 590 miles at 265 m.p.h.; service ceiling, 36,000 ft.

POINTS OF RECOGNITION.—Single-motor low-wing cantilever monoplane with long-chord radial cowling. Slight dihedral angle from wing roots. Wing straight tapered from roots with slightly more taper on trailing than on leading edge. Triangular-shaped single fin and rudder slightly behind tailplane. Raised transparent cockpit cover with radio mast offset in front of it.

## Balloon Command Exhibition

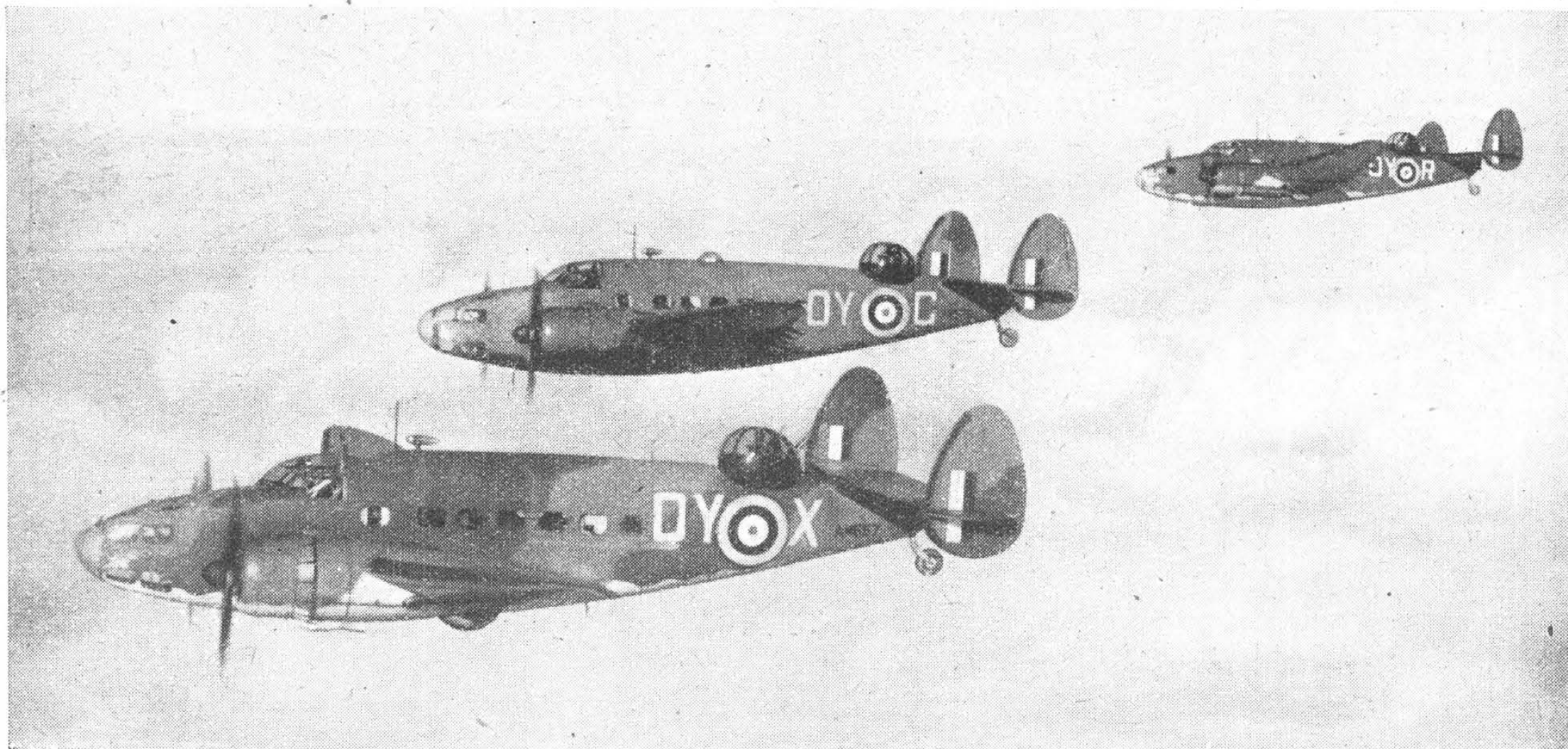
LORD SHERWOOD, Parliamentary Under-Secretary of State for Air (Lords), opened an exhibition of paintings, drawings and models by personnel of the Balloon Command of the Royal Air Force at the National Portrait Gallery on May 8.

The pictures exhibited cover all the activities of this section of the Royal Air Force, from the "real job of work" to the lighter and more pleasant side of life. For example, F/Lt. Hailstone, of 960 Squadron, shows them both: the one in his "Balloon School," and the other in a pleasing painting called "Dancing in the N.A.A.F.I."

Three paintings by A.C. W. Goodwin, of 17 Balloon Centre, occupy quite a reasonable amount of the available wall-space, but are in every way worthy of doing so. They are titled in each case "Balloon Study." Other paintings of special note—to mention but a few—are "War Casualty" by F/Lt. A. Ridgway, of 929 Squadron, and a pen study by A.C. A. I. Smith, of 16 Balloon Centre . . . but suppose you see the Exhibition and judge for yourself!—H.B.

The 140th Week of

# THE WAR IN THE AIR



HUDSONS ON GUARD.—Lockheed Hudsons of Coastal Command setting off for a patrol of the Norwegian coast.

**E**NCOURAGING SIGNS of the growing air strength of the United Nations are appearing on all fronts. From England the air offensive is maintained against the enemy by day and by night. In the Mediterranean area the gallant defenders of Malta have had less determined attacks to withstand recently and may be left triumphant in the field. On the Russian front the air war has been on an increased scale of late. Such information as is available suggests that our Allies are giving the Luftwaffe as good as they get.

Perhaps the most encouraging signs of all come from the Far East, where the naval victory in the Coral Sea, off Australia, owes much to the fact that for the first time in that area the Allied forces had at least equality in the air.

The offensive spirit is growing. We shall attack the enemy in every way, at all points and by all means possible consistent with sound planning. Our air offensive in the West, soon to be reinforced by American squadrons, is reaching a sustained level which has never been equalled. German moral is strong but brittle. It may crack suddenly under pressure from the East and from the West. Should Hitler make the supreme error of using gas against Russia the retaliation promised by Mr. Churchill on May 10 will visit a ghastly vengeance on the German people—a vengeance made possible by our mounting superiority in the air.

The Germans are known to have developed effective gas-spraying apparatus from the air. Whether this method, or gas bombs, would be the most efficient means of spreading

gas is yet to be determined. In any case, once the initial surprise is gone, gas attacks are not likely to be a decisive factor against armies, although they can be thoroughly unpleasant against civil populations.

Bomber Command remains but a fraction of our total strength in the air and it has many diversions from its main purpose. Nevertheless, the weight of attack with which Bomber Command is now striking at Germany is achieving military results which could be gained in no other way. The enemy is being robbed of tanks, guns, aircraft, aero-engines, submarine equipment and shipping in a steady drain. As soon as our rate of attack exceeds his capacity to make good the losses Germany is beaten from the air.

On May 5 British forces landed in Madagascar and the naval base at Diego Suarez was in Allied hands two days later. Mr. Churchill revealed in his broadcast that the decision to invade was taken three months ago.

Madagascar, standing across the vital supply route from the Cape to Suez, is an essential link in the chain of defence. There can be no doubt that the Japanese had designs on Madagascar and we may yet have to defend it from attack. Ceylon and Madagascar remain two of the key points of Allied defensive strategy against the Japanese. To build them up as well-equipped bases of Air Power must take time, but it is a task which when completed will make impossible the cutting of our life-lines and will give us the power to strike at the invading forces of Japan and drive them back from the territories they have overrun.

## The Reluctant Guardians

**M**ORE EVIDENCE was given last week of the Luftwaffe's growing disinclination to oppose the R.A.F.'s daily—and sometimes almost hourly—sweeps across the Channel. Time after time the fighters made their way far inland from the coast of France and met no challenge, and fighter-escorted bombing raids with Bostons and Hurricanes were challenged only when numerical and strategic advantages were on the side of the defenders. There seemed to be a tendency to leave much of the defence to the anti-aircraft guns, and several of the fighters lost in the day raids were known

to have been hit by gunfire. Not one bomber was lost—a glowing tribute to the guardianship of their escorts.

Most of the bombing was done by Bostons, which raided points as far apart as Bruges in Belgium and Caen in France. Hurricanes, too, had several commissions; in one they made a spectacular and highly successful attack on an aerodrome at Abbeville, planting their bombs precisely on hangars and buildings, and machine-gunning aeroplanes on the ground, dispersal huts and gun posts.

Although, as was the case in the previous week, combat

results, judged by the Air Ministry's communiqués again favoured the enemy, the R.A.F. had some highly satisfactory engagements. In one they shot down three Fw 190s without loss to themselves; in another they accounted for five Me 109s and a Dornier Do 217 bomber without loss. More than once, enemy fighters were last seen falling out of control, or on fire, but were not seen to crash and were, therefore, logged as "probables."

Inspired, no doubt, by the raiding of the Royal Air Force, the Luftwaffe made furtive dashes across the Channel to bomb places on the South-East, South and South-West coasts of England. Once or twice they caused damage and casualties, but the raiders clearly had no military targets in view. They were, for the most part, Messerschmitt Me 109s fitted with bombs. Several times they were intercepted and turned back, and on Apr. 8 Free French pilots broke up a formation of 12 and sent one down in flames. Two more Me 109s were destroyed next day by a single Hurricane.

In making "reprisal" night raids on Great Britain, the Luftwaffe lost eighteen bombers. Twelve were destroyed over this country (one by a barrage balloon), and six over their Continental bases. Exeter had the heaviest of the raids, and further damage was done to this old and historic South-West town. Other raids, according to the Germans, were made on Norwich and on Cowes (Isle of Wight).

Both Bomber and Fighter Commands, using Bostons, Havocs and Hurricanes, were active in their "night-intruder" operations. One Czech pilot, flying a four-cannon Hurricane, shot down three Heinkel He 111s in one night as they returned to their bases. Only the night before two more bombers had been shot down over their bases by Squadron Leader J. A. F. Maclachlan, who is known in Fighter Command as "the one-armed Hurricane pilot." His left arm was hit by a cannon shell while he was flying a Hurricane in combat over Malta a year ago.

Bomber Command also had a heavy week. Three times its pilots and crews made the long and difficult trip to Stuttgart, in Southern Germany; others raided Hamburg in force; a party of Stirlings went again to the Skoda Armament works at Pilsen (Czechoslovakia) and, as a fitting climax, a powerful attack was made on Warnemünde, near Rostock, by squadrons of Halifaxes, Stirlings, Lancasters, Manchesteres, Wellingtons and Hampdens.

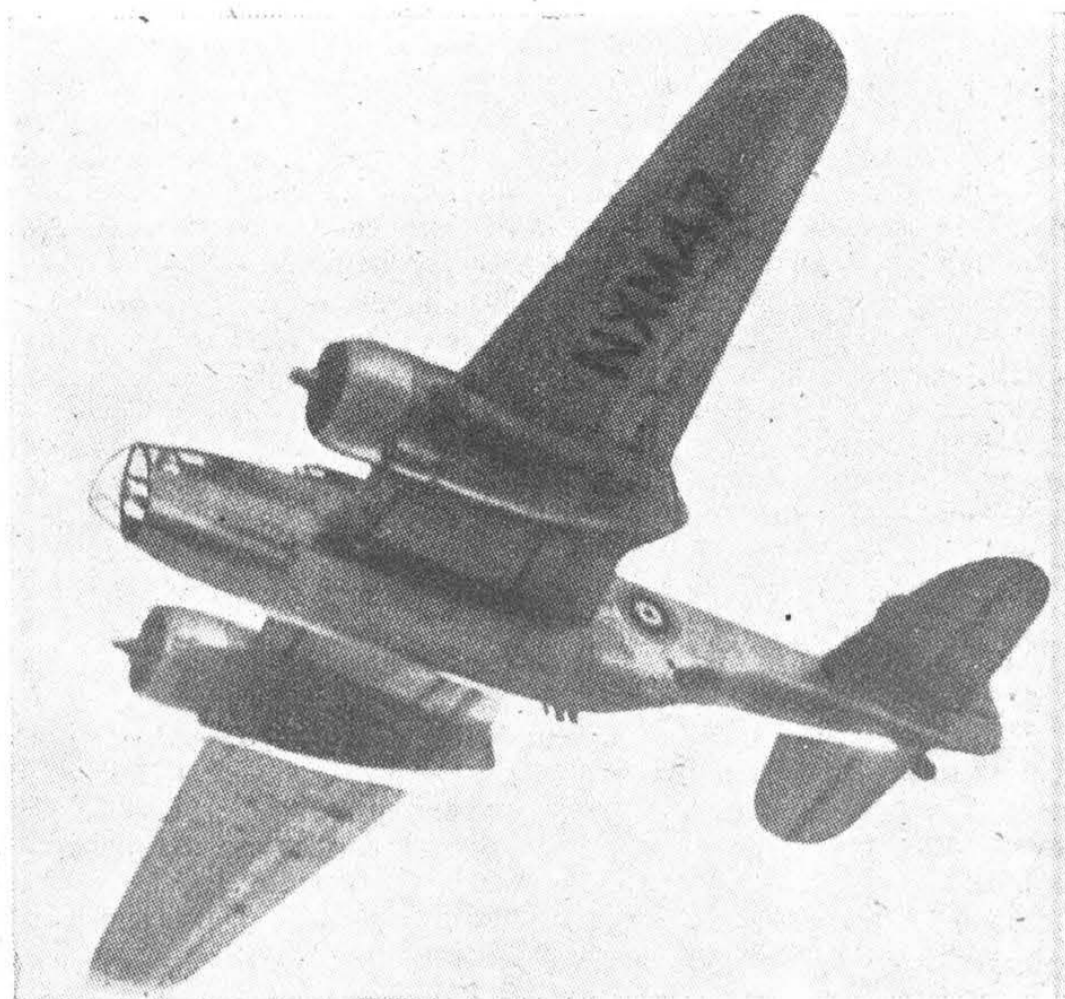
Much strengthened defences met the raiders at Warnemünde. Large numbers of searchlights were used to cover the area with a screen of dazzling light, and many of the raiders were forced to make their attacks from only 400-800 ft. Others elected to bomb from a great height, using fires started by earlier raiders as guides. The primary targets were aircraft factories (including the Heinkel and Arado plants) and the port. Nineteen bombers were lost, but if hits with heavy bombs were made on the aircraft factories, the price may not have been high. The dislocation of work at these centres of production would be a doubly serious blow to the Luftwaffe if they followed immediately upon the destruction of the big Heinkel factory between Warnemünde and Rostock.

Much damage was done to enemy shipping by the Coastal Command, chiefly in night operations. On May 7, Hudsons scored hits on eight of 12 heavily escorted supply ships off the Dutch coast. Next day, air reconnaissance showed that one large vessel had been run ashore to prevent it from sinking, and another, still burning, was being towed by tugs, although its decks were almost awash.

A summary of the offensive operations of Fighter, Coastal and Bomber Commands appears on page 549.



THE THIN END OF THE WEDGE.—A Martin Maryland, in service at a land station of the Fleet Air Arm.



SUCCESSOR TO THE MARYLAND.—The Martin 187, the Baltimore, which is a development of the Martin 167, the Maryland. Its two 1,600 h.p. Pratt and Whitney Double Wasp motors give it a speed of more than 300 m.p.h.

#### "Malta is Giving Trouble"

Malta earned still more praise from friend and foe alike for the vigour and determination with which it continued to conduct its defence against the assaults of the Luftwaffe and, to a significantly increasing degree, of the Regia Aeronautica. A German broadcaster admitted that "Malta is giving trouble and will continue to give trouble," and the Island at once supported that contention by destroying 14 more of the raiders in two days. For the greater part of the week, raiding had been on a reduced scale, and the sudden rise in losses when the Axis returned in greater force gave the enemy unwelcome proof of the Island's recuperative powers. Altogether, its guns and fighters disposed of 17 bombers and fighters during the week, among them three Italian B.R.20 bombers.

Activity in the Western Desert was again limited to patrolling. Sandstorms once more hindered land and air operations, and clashes were few. Royal Air Force fighters gave support in the forward areas and shot down two Italian Macchi C.202 fighters. A Heinkel He 111 and a Junkers Ju 88 of the Luftwaffe were shot down by anti-aircraft gunfire in the Western Desert. Fighters also successfully attacked enemy motor transport on the Jedabia—Benghazi road. Bombers raided Benghazi and targets in the Martuba—Mekili area. In one of the raids on Benghazi a medium-sized merchant ship was hit. In the Mediterranean, a direct hit was scored on an enemy merchant vessel.

Alexandria was raided on the nights of May 3 and 9. One Heinkel He 111 was shot down and others were damaged during the first of the raids.

#### Madagascar Invaded

At dawn on May 5, British forces landed in Courier Bay, on the French island of Madagascar, and made their way to the naval base at Diego Suarez. The operation was covered by aeroplanes of the Fleet Air Arm. Resistance was offered by the Vichy French, but the Naval base was quickly secured and its capture was announced by the Prime Minister in the House of Commons on May 7. A British fleet entered the harbour the same afternoon. Casualties on both sides were comparatively light. Few details of the operations were given from British sources, and no comment was made on the French statement that the invading force had included parachute troops.

Vichy French officials in Vichy France stated that the invasion of Madagascar continued to be resisted. The British move, which had the full support of the United States, forestalled a similar seizure by Japan.

#### Repulse of Japanese Invasion Fleet

Powerful Allied and Japanese naval forces met in battle in the Coral Sea, to the North-East of Australia. Both sides were well supported in the air and the first encounters appear to have been between Japanese surface ships and Allied torpedo-bombers on May 4. On subsequent days large-scale air attacks were made by aeroplanes operating from aircraft

carriers, and on May 7 and 8 a naval battle was joined. Security reasons led to the suppression of the Allied losses, but the Japanese losses, as announced by the Allies, were: one aircraft carrier, one heavy cruiser, one light cruiser, two destroyers, four gunboats, and one supply vessel sunk, and one aircraft carrier, one heavy cruiser, one seaplane tender of 9,000 tons, one light cruiser and one cargo vessel damaged. The damaged aircraft carrier probably became a total loss.

Japanese reports on the battle claimed the destruction of 89 enemy aeroplanes and admitted that 31 of their own machines had not returned. Their version of Allied naval losses was dismissed as "fantastic," but comment in Australia and elsewhere suggested that the Allied force had not scored an easy victory. Both Australian and United States warships were engaged but United States vessels formed the bulk of the Allied force.

Though the naval engagement was broken off by the enemy's withdrawal northwards, air attacks were continued, and on May 9, a seaplane tender and a tanker were damaged and four seaplanes destroyed or damaged.

Raids on Port Moresby increased in intensity during the week and the need for still more fighters was felt by the defenders. On May 3, three bombers and a fighter were shot down and on May 9 five more were destroyed or seriously damaged. The Allied losses were said to be light, but no figures were given. Lae aerodrome was raided by the Allies on May 4, with fighters, and damaged several enemy aeroplanes on the ground. An Allied reconnaissance machine later shot down an enemy fighter over this aerodrome. Raboul was also attacked on May 4, hits being scored on three enemy machines which were landing. Many fires were started among dumps and dispersal points at the aerodrome.

From Burma came news of still more withdrawals by British and Chinese forces, and of the entry of Japanese forces into China along the Burma Road. Among the places abandoned was Akyab, on the coast.

Air support for the Allies was again on a limited scale, but small forces of Blenheims were active along the Chindwin River near Monywa, where laden barges were bombed with good results on May 4 and 5. Later, on May 9, seven Blenheims raided the aerodrome at Magwe, where they destroyed two, probably destroyed two and damaged five of 18 enemy aeroplanes observed on the ground. The enemy had no lack of air support, and his dive bombers were particularly active.

A Chinese report, issued at the week-end, claimed that heavy losses had been inflicted on the Japanese near Chefang, and that remnants of the enemy force were fleeing along the Burma Road. Chinese troops were also reported to have retaken Maymyo and to have reached the outskirts of Mandalay.

Bombers of the U.S. Army Air Corps in India raided Rangoon docks on May 3 and 6, and the aerodrome at Mingaladon, North of the City, on May 4 and 6. Pilots of the American Volunteer Group escorted Chinese bombers on a raid on Lashio early in the week, intercepted raiders which bombed Paoshan on May 5 and shot down eight, and set fire to at least 20 trucks of an enemy motorised column on May 9.

Japanese bombers raided Chittagong, in the Bay of Bengal, on May 7 and 8. The damage caused was slight.

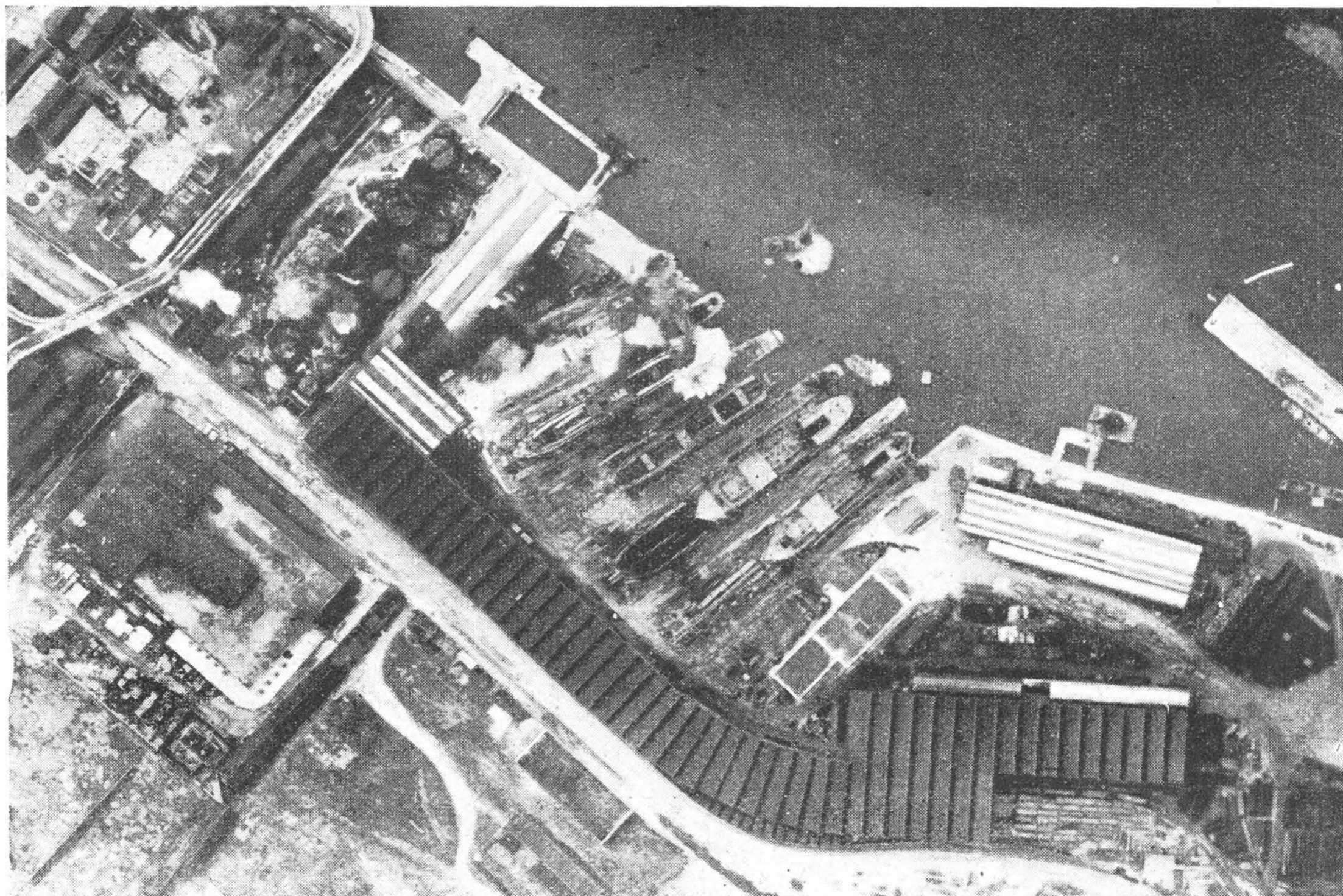
After long spells of shelling and interminable air raids the Japanese made landings on Corregidor Island at the entrance to Manila Bay (Luzon) and overwhelmed the defenders. The final surrender came on May 5 after five months of stout resistance. At the same time Forts Hughes, Drum and Frank in Manila Bay also surrendered. Thus ended an epoch in this War that may yet prove to have wrecked Japan's schedule of conquests and laid the foundation for her speedier defeat.

With the surrender of Corregidor imminent the Japanese landed still more troops on the island of Mindanao, in the Philippines, to clear up the remaining pockets of resistance there. Others were doubtless withdrawn for service in other theatres and for invasions yet to come.


#### The Russian Front

With the greater part of the front still in a fluid state from the melting snows, neither the Germans nor the Russians could engage upon major operations. None the less, tank activity was observed on the southern sectors, where the sandy soil dries more quickly, and some of the better roads were able to bear traffic again. There was also a sudden increase in air activity towards the week-end—as reflected by the sharp increase in both sides' casualties.

German broadcasts spoke of a successful crossing of the Donetz river by a Russian unit, but added that the unit had later been forced to retreat. The Germans also reported many Russian attacks East of Kharkov and South-east of Lake Ilmen. The Russians merely stated that there had been no important change on the front. Their figures for air losses for the week were: German, 171; Russian, 86.



**ACTION SHOT.**—Bombs bursting in the shipyards at Rouen during an attack by Douglas Bostons of the R.A.F. Bomber Command. This photograph is an excellent example of the clear pictures taken at height and at speed by both bomber and reconnaissance aeroplanes of the R.A.F., photographs which prove beyond a doubt that the R.A.F. reaches its targets during its raids on enemy-occupied and enemy territory, and give the lie to the German minimisation of the British attacks.



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# Diary of the Week

## Offensive Operations of the Fighter, Coastal and Bomber Commands of the R.A.F. From May 3 to 9, 1942.

### Sunday, May 3

DAY .. Three enemy fighters destroyed in sweep over Pas de Calais. Bostons, escorted by fighters, bombed docks at Dunkirk, while Spitfires shot down a fourth fighter in diversionary sweep. Later, Hurricanes bombed an aerodrome at Abbeville. Three R.A.F. fighters lost.

NIGHT .. Main targets: Docks and shipyards at Hamburg. One Me 110 night fighter shot down by bomber. Submarine base at St. Nazaire also bombed; mines laid in enemy waters; aerodromes in Low Countries attacked by bombers and fighters. Two enemy bombers destroyed over Northern France. Aeroplanes of Coastal Command damaged two enemy ships off the Norwegian coast and bombed objectives on the coast. Five R.A.F. bombers lost.

### Monday, May 4

DAY .. In the morning Bostons escorted by fighters raided docks at Le Havre. In the afternoon, fighters made sweeps over Northern France. Aeroplanes of Coastal Command attacked enemy shipping off the Dutch coast. Seven enemy fighters destroyed. Seven R.A.F. fighters and two aeroplanes of Coastal Command lost.

NIGHT .. Main targets: Stuttgart and Skoda works at Pilsen. Docks at Nantes also bombed. Aeroplanes of Fighter Command attacked enemy aerodromes in France. Three He 111 bombers destroyed. Aeroplanes of Coastal Command attacked shipping off the coast of Holland and Norway and bombed Mandal aerodrome (Norway). Three R.A.F. bombers lost.

### Tuesday, May 5

DAY .. Zeebrugge attacked by fighter-escorted Bostons. Three fighter sweeps made over Northern France during afternoon. Four enemy fighters destroyed. Six R.A.F. fighters lost.

NIGHT .. Main target: Stuttgart. Other targets in Southern Germany and the docks at Nantes also bombed. Aeroplanes of Fighter and Bomber Commands attacked enemy aerodromes in the Low Countries and Northern France. Four R.A.F. bombers lost.

### Wednesday, May 6

DAY .. Bostons escorted by fighters attacked power station at Caen. Fighters made sweeps, and others escorted Hurricanes which bombed targets at Calais. Bostons with fighter escort attacked objectives at Calais and Boulogne. Fighters made late sweep over Northern France. One enemy fighter destroyed. One R.A.F. fighter lost.

NIGHT .. Main targets: Industrial objectives at Stuttgart. Other places in Germany and the docks at Nantes also attacked. Fighter and Bomber Command attacked enemy aerodromes in occupied territory. Seven R.A.F. bombers lost. One enemy fighter shot down by a bomber.

### Thursday, May 7

DAY .. Boston bombers escorted by fighters attacked docks at Ostend and industrial power plant at Zeebrugge.

NIGHT .. Hudsons of Coastal Command made two attacks on heavily escorted convoy of 12 enemy supply ships off the Dutch coast. Eight were known to have been hit and severely damaged. Two Hudsons lost.

### Friday, May 8

DAY .. Fighters escorted Boston bombers in an attack on Dieppe.

NIGHT .. Main target: Warnemünde. Aeroplanes of Fighter and Bomber Commands attacked enemy aerodromes in occupied countries. One enemy bomber destroyed. Hudson of Coastal

Command bombed large enemy supply ship and left it in flames. Nineteen R.A.F. bombers lost.

### Saturday, May 9

DAY .. Fighter sweeps over Cap Gris Nez area. Later, fighters escorted bombers to Hazebrouck. Afterwards further fighter sweeps were made over Northern France. In the evening fighters escorted Boston bombers in a raid on Bruges. One Fw 190 fighter shot down. Seven R.A.F. fighters lost.

## Raids on Great Britain by the Luftwaffe. From May 3 to 9, 1942.

### Sunday, May 3

DAY .. Bombers caused some damage and casualties at a town on the S.E. coast of England shortly before dark.

NIGHT .. Main target: Exeter. Bombs dropped elsewhere caused little damage and no casualties. Five raiders destroyed.

### Monday, May 4

DAY .. Some damage and casualties caused when few enemy bombers raided town on S.E. coast of England.

NIGHT .. Areas of the South coast bombed. Four raiders destroyed.

### Tuesday, May 5

DAY .. Four enemy raiders flew over coastal district of S.E. England and caused some casualties and damage.

### Wednesday, May 6

DAY .. Casualties and some damage caused in early morning raid on point in South-East England and, later, on place on coast of S.W. England. In the evening bombs were dropped harmlessly at a place on S.E. coast of England.

### Thursday, May 7

DAY .. Three small raids on places on S.E. coast of England. One bomber shot down off South Coast at dusk by fighters.

NIGHT .. Small scale raids at points in South-East England. Two raiders destroyed.

### Friday, May 8

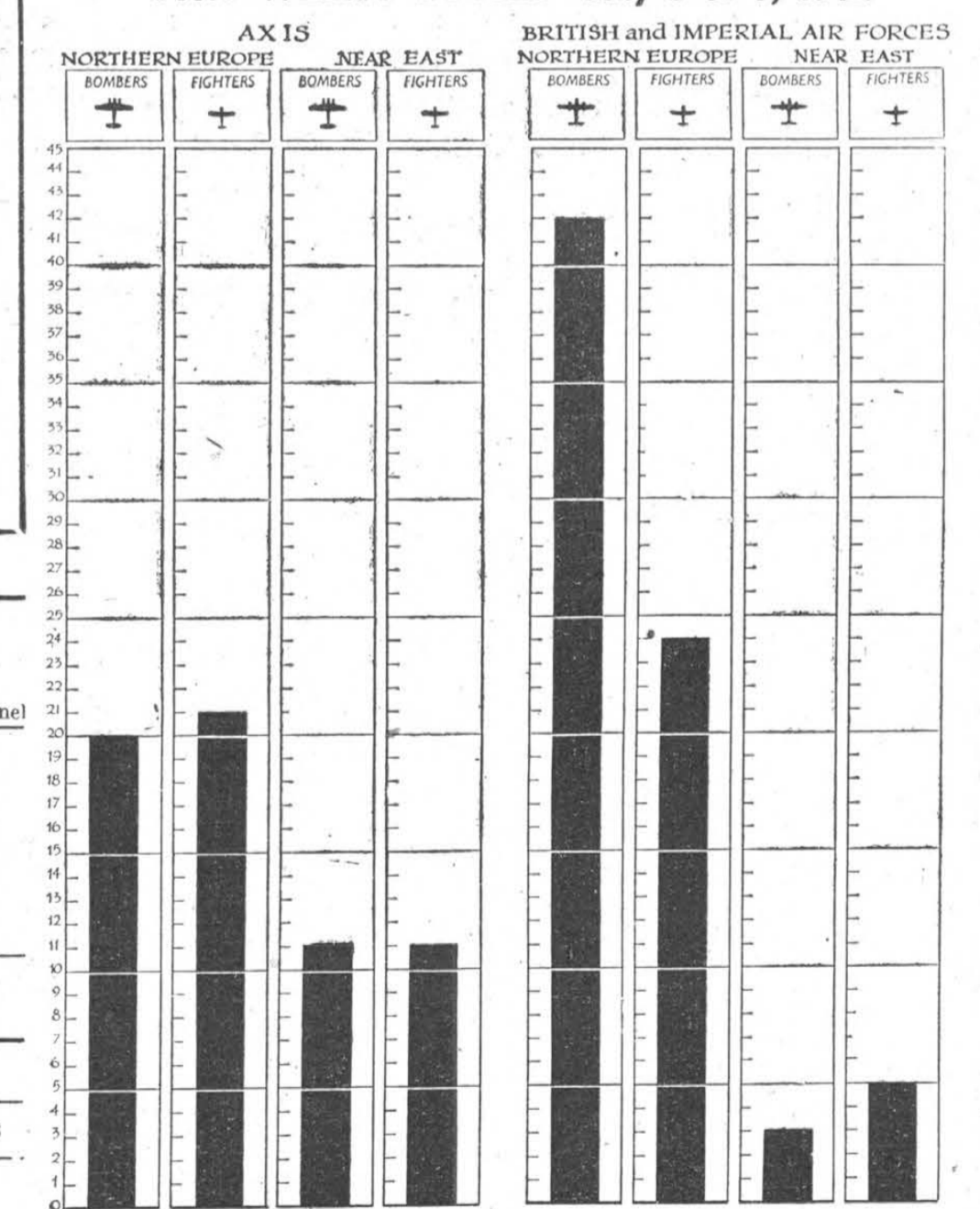
DAY .. Brief bombing and machine-gun attacks at a place on the South-East Coast and another place on the South Coast of England. One enemy fighter destroyed off South Coast by R.A.F.

NIGHT .. Slight activity over East Anglia. One raider destroyed by barrage balloon.

### Saturday, May 9

DAY .. Two Me 109 fighters destroyed off S.W. Coast of England.

### THIS WEEK'S LOSSES—May 3 to 9, 1942.



THE WEEK'S LOSSES AT A GLANCE.—Comparative losses in the Air War for the week May 3 to 9, 1942, inclusive. The chart does not include aeroplanes destroyed in Russia and the Far East or those destroyed on the ground. The comparative losses are: Northern Europe: Axis (daylight offensive) 2 bombers and 3 fighters; (night offensive) 18 bombers; (defence by day) 16 fighters; (defence by night) 2 fighters. British (daylight offensive) 2 bombers and 24 fighters; (night offensive) 40 bombers. The losses in the Near East were: Axis, 11 bombers and 11 fighters; British, 3 bombers and 5 fighters. Approximate personnel losses suffered by the respective Air Forces were: Northern Europe: Axis, 100; British, 289. Near East: Axis, 56; British, 19.

### GERMAN, ITALIAN AND BRITISH LOSSES.—MAY 3-9, 1942.

Date	Axis (N. Europe)		Axis (Near East)		R.A.F. (N. Europe)		R.A.F. (Near East)	
	Machines	Personnel	Machines	Personnel	Machines	Personnel	Machines	Personnel
3-5-42	12	33	3	11	8	36	2	2
4-5-42	14	36	1	1	12	34	—	—
5-5-42	4	3	1	4	10	32	2	5
6-5-42	2	3	—	—	8	43	—	—
7-5-42	3	12	2	2	2	8	—	—
8-5-42	3	10	8	19	19	129	2	7
9-5-42	3	3	7	19	7	7	2	5
Totals	41	100	22	56	66	289	8	19

### TOTAL LOSSES IN THE AIR WAR\* (To dawn, May 10).

Machines destroyed in combat or by A.A. gunfire .. ..	Axis Air Forces		Imperial Air Forces
	Machines	Personnel	
.. ..	8,454	22,889	4,755
Personnel .. ..			14,016

\* Excluding Russia and the Far East.

### NAVAL SUCCESSES

The following successes by naval craft in actions against enemy aeroplanes have been reported by the Admiralty. "At least three" during an attack on a convoy on the North Sea (May-1); two Messerschmitt Me 109s by the trawler Horatio (no date given), and one by the submarine Upright while in Malta Harbour (no date given).

# NEWS OF THE WEEK

**GENERAL SIR WILLIAM DOBBIE**, C.-in-C. and Governor of Malta for the past two years, arrived in England on May 10. He has been succeeded at Malta by General Lord Gort, V.C.

**Lord Amulree**, LL.D., K.C., died on May 5 at the age of 81. When Lord Thomson was killed in the accident to the R. 101 in 1930, Lord Amulree succeeded him as Secretary of State for Air and held that position until 1931.

**American Air Force** units which are to be stationed in Great Britain will work on a joint strategical plan which the U.S. authorities will assist in framing. The American commanders will collaborate in the discussions as to the tactics to be adopted in the plan. The arrangements made in Great Britain for the control of the U.S. air units are those for which the U.S. authorities asked and they meet with the full approval of the British authorities. The American units will be drawn from the U.S. Army Air Forces.

**General Field-Marshal Sperrle**, Commander of the Luftwaffe in the West, is reported to be visiting Lisbon incognito accompanied by German Air Force officers. A suggestion has been made that the visit is connected with the possible establishment of air bases on the Mediterranean and Atlantic coasts.

**The Curtiss P-40F**, the first American aeroplane to be equipped with a Packard-built Rolls-Royce Merlin motor, was demonstrated for the first time on May 6 to newspaper correspondents in America. The P-40F is named the Warhawk by the Curtiss Corporation and is officially stated to be faster and to have a higher service ceiling than its predecessors and to have exceptionally good striking power.

**An extract** from Major Al Williams daily column "Flying with Al Williams," Feb. 24:—"I have never underestimated the Japs or any other actual or potential opponent. There's no question but that they are brave and capable soldiers, sailors and airmen. And that goes for the British and Germans too."

## The War

**BRITISH** forces landed at Madagascar on May 5 and occupied the naval base of Diego Suarez on May 7. The operations were supported by British naval aeroplanes.

**A major naval and air** engagement between Allied and Japanese fleets was fought off the Solomon Islands in the Coral Sea between May 3 and May 8. Allied losses are officially stated to be

comparatively light in comparison to the Japanese losses of 10 ships sunk, including one aircraft carrier, and two cruisers, and five damaged, including an aircraft carrier that probably became a total loss.

**Details** of the bombing of Tokio and other Japanese cities on Apr. 18 were given for the first time in a U.S. War Department communiqué on May 10, which stated that U.S. Army bombers made the attacks. Large fires were started at war industry factories and military and naval establishments, some of which burned for two days. The attacks were made in the middle of the day from a low level.

**Malta** shot down or damaged 71 enemy raiders during the two days May 9 and 10.

**Corregidor**, in the Philippines, surrendered on May 5, after five months' resistance to the Japanese.

**The aerodrome** at Akyab, on the Burma-India border, was claimed by the Japanese to have been captured on May 4.

**Fighter Command** made 67 major day sweeps during April, on 35 of which bombers were escorted to attack targets. Only six bombers were lost on these raids. Sixty-nine enemy aeroplanes were destroyed during daylight offensives, four more were shot down round the British coasts in daylight and night fighters and anti-aircraft units accounted for 34 German bombers, of which eight were shot down over their home bases. During this same period the R.A.F. lost 99 fighters but six of the pilots are safe.

## Service

**AIR MARSHAL RICHARD WILLIAMS** has been appointed Australian Air Representative in Washington. Before the outbreak of the War Air Marshal Williams was acting as Air Officer in charge of Administration of R.A.A.F. Coastal Command and was appointed in August last to command the new R.A.A.F. headquarters in London.

**Air Commodore George Jones**, Director of Air Training in Australia, has been appointed Australian Chief of the Air Staff in succession to Air Marshal Sir Charles Burnett, who is returning to England. These appointments were announced on May 7 and 6, respectively.

**Air Vice-Marshal E. W. Stedman**, Director-General of Air Research for the R.C.A.F., has arrived in England to visit experimental stations and exchange information and views with the R.A.F. and scientists.

**An exhibition** of paintings, drawings, and models by members of the R.A.F. Balloon Command was opened at the National Portrait Gallery on May 8 by Lord Sherwood, Parliamentary Under-Secretary of State for Air. This is the first all-R.A.F. exhibition of its kind to be presented in the capital by an individual R.A.F. Command, and will be open daily from 10 to 6 until the end of May.

**Australian** airmen trained in Rhodesia and the United Kingdom are serving in Iceland, according to a statement made by Mr. A. S. Drakeford, Australian Air Minister, on May 4.

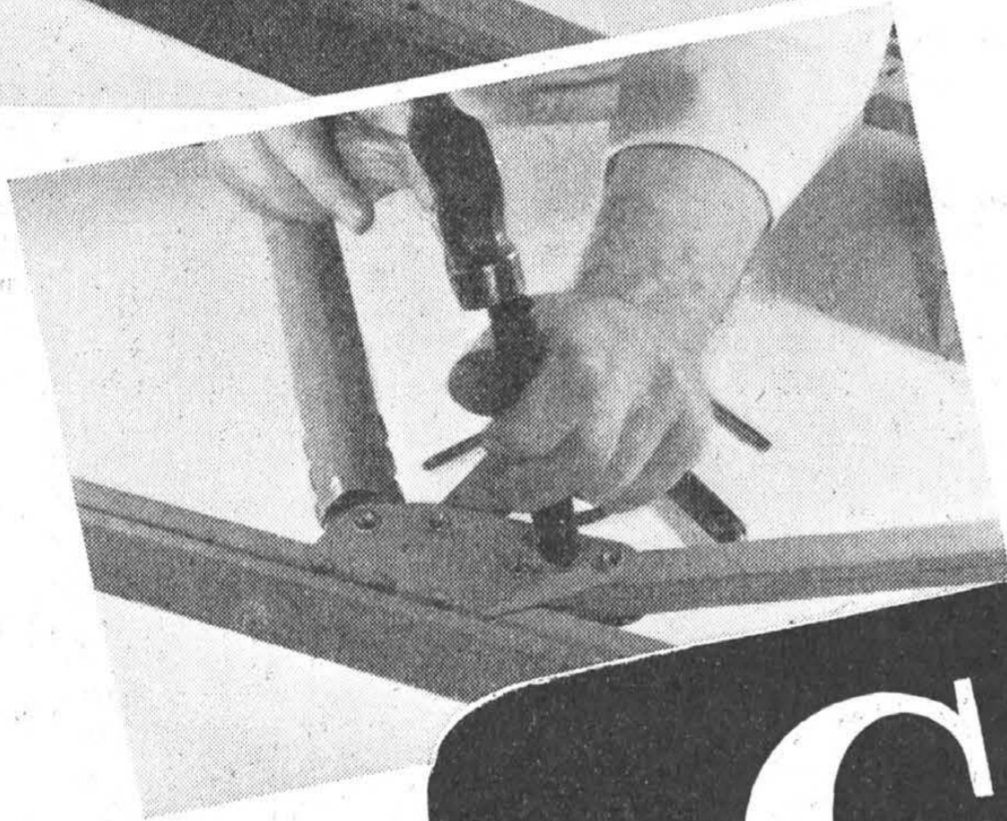
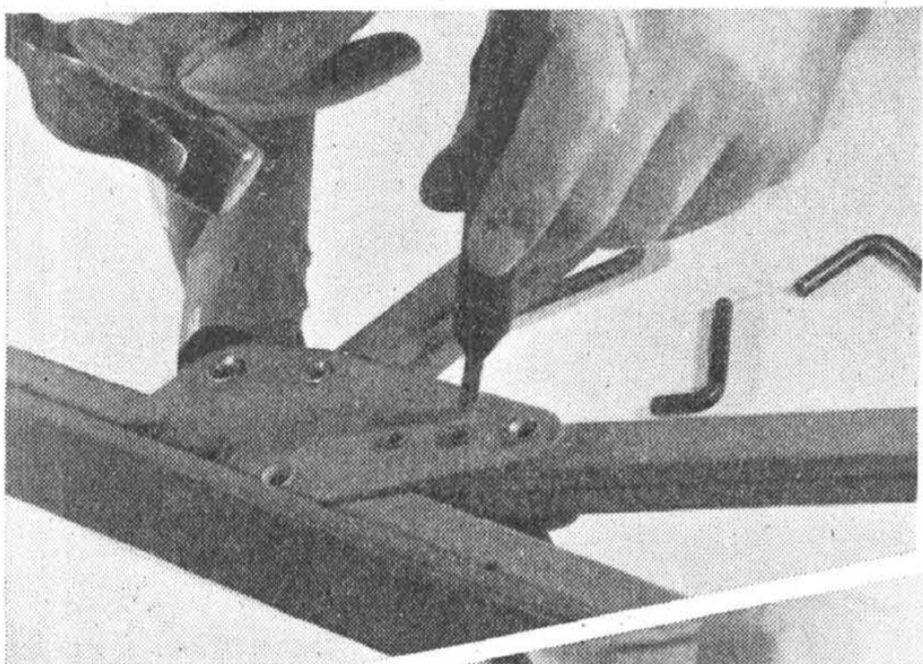
**Polish fighter** squadrons with the R.A.F. have destroyed about 470 enemy aeroplanes from the time of the Polish squadrons arrival in Great Britain until Apr. 25. During the same period about 2,346 bombing sorties have been made. These figures are given in the Polish Air Force paper "Wings" (Skrydla) of May 1-14.

**Distinctions** in the award of the D.F.C. and D.F.M. to personnel of the R.A.F. were discussed in the House of Commons on May 6. Sir Archibald Sinclair explained that these two awards were equal in merit and that no class distinction was involved in the award of these decorations. Officers and non-commissioned officers were drawn from all classes of the population and class distinctions did not exist in the R.A.F. Asked why both awards were retained if there was no distinction in merit, Sir Archibald replied that great traditions were gathered round the D.F.M.; that it was as much valued by the men who received it as the D.F.C.; and that they intended to retain both.

**Reviewing** the operations of the Royal Australian Air Force since the day Japan entered the War until American help was received, Mr. A. S. Drakeford stated that one of the first blows had been struck by the R.A.A.F. from a base in the Netherlands East Indies. One of the finest achievements had been the long-range reconnaissance raids on the Japanese base in the Carolines, and another outstanding exploit had been the interception by five or six Wirraways of the force of 100 land-based aeroplanes and the force of fighters from aircraft carriers which had first struck at Rabaul. Each of the Wirraways had brought down a superior enemy aeroplane before crashing. The R.A.A.F. had been operating at the beginning at odds of ten-to-one.

**A flying badge** for naval air gunners with the Fleet Air Arm is being considered.

# WINGS ARE THE WHEELS OF TO-MORROW



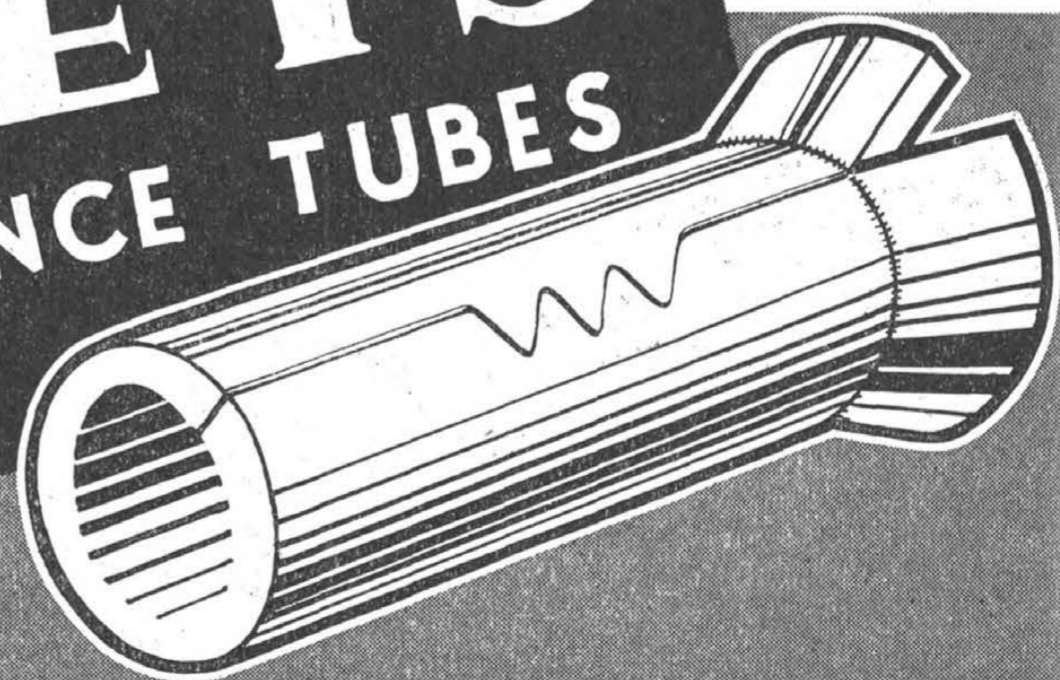
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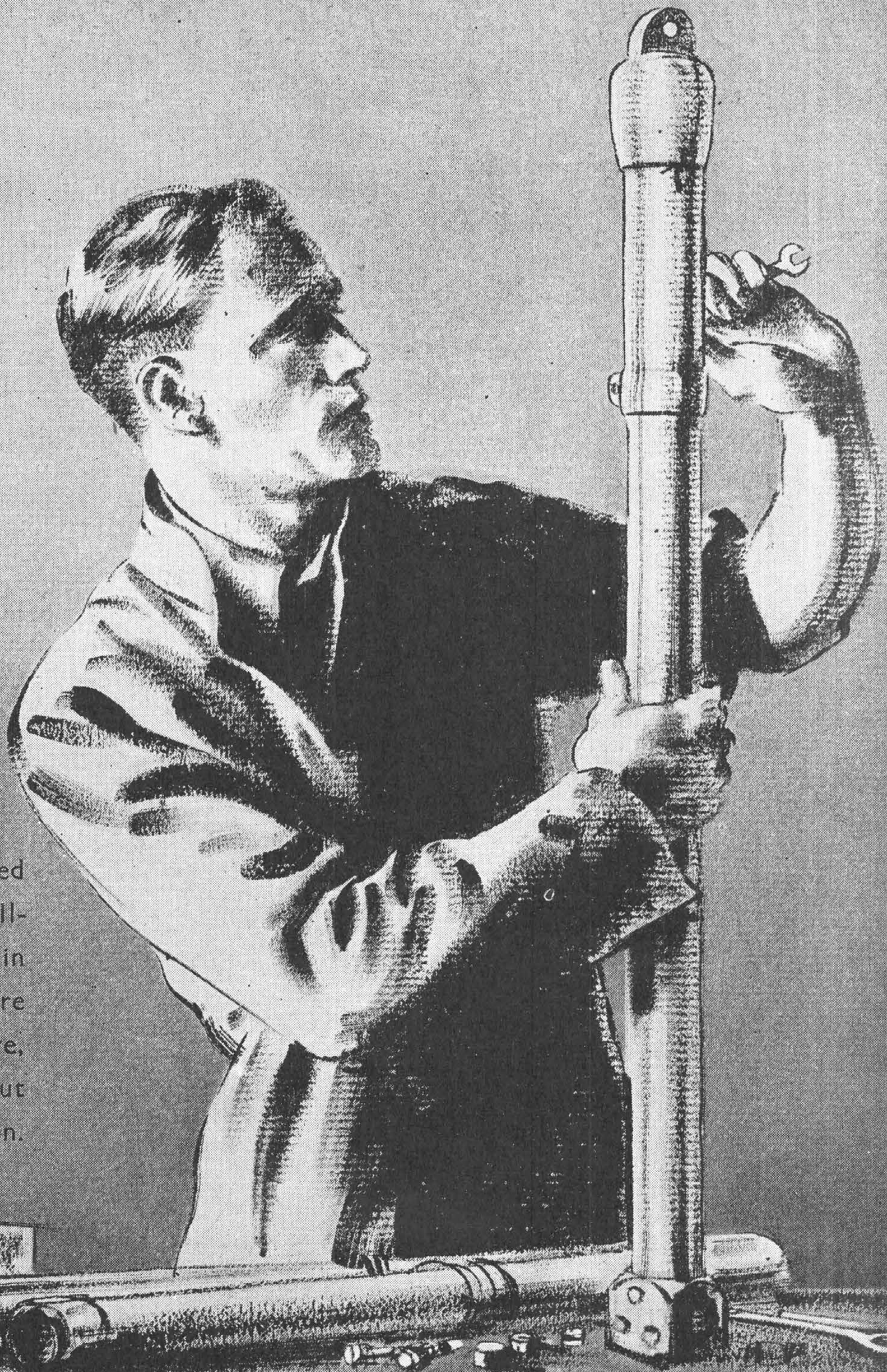
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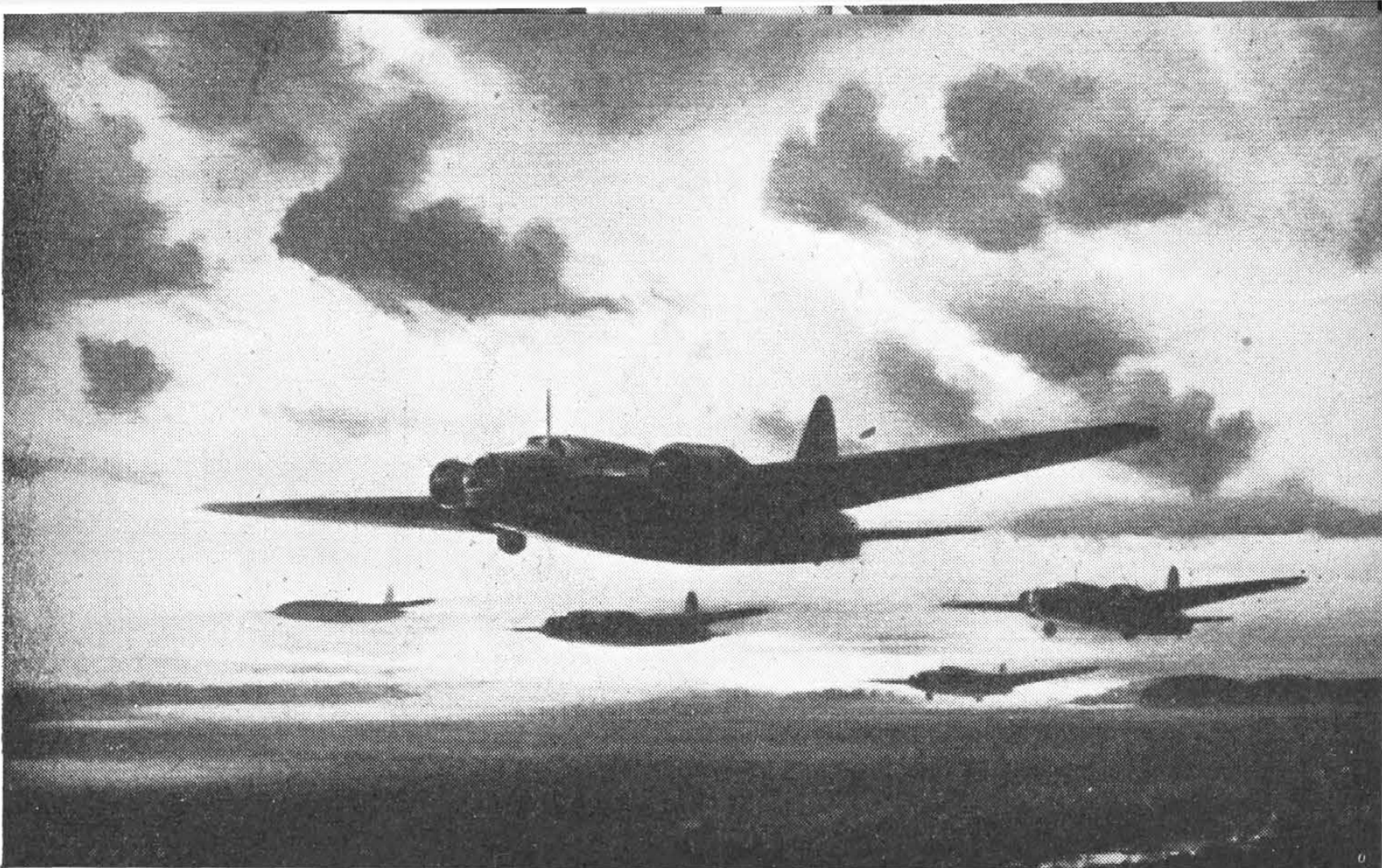
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1. NIGHT WORK—Hurricanes in 1940.
2. A JOB OF WORK TO BE DONE—Defiants en route to Dunkirk, May, 1940.
3. LOOKING FOR TROUBLE—Spitfires in the Battle of Britain.
4. SUNDERLANDS ON CONVOY PATROL.
5. OVER THE TARGET—Weather favours the Blenheims.
6. LEAVING FOR THE PARTY—Wellingtons taking-off at dusk.

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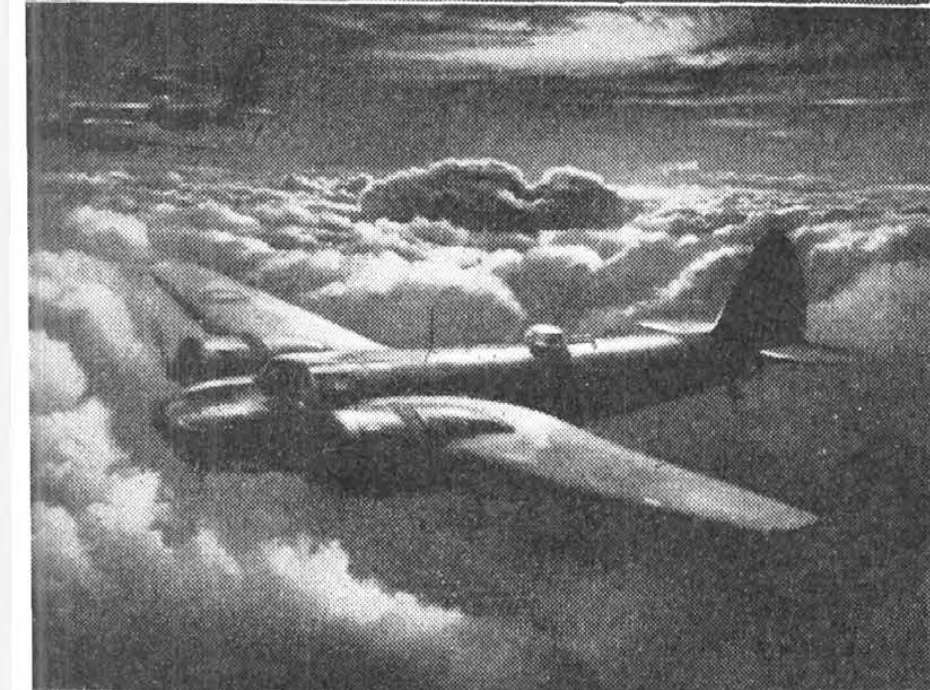
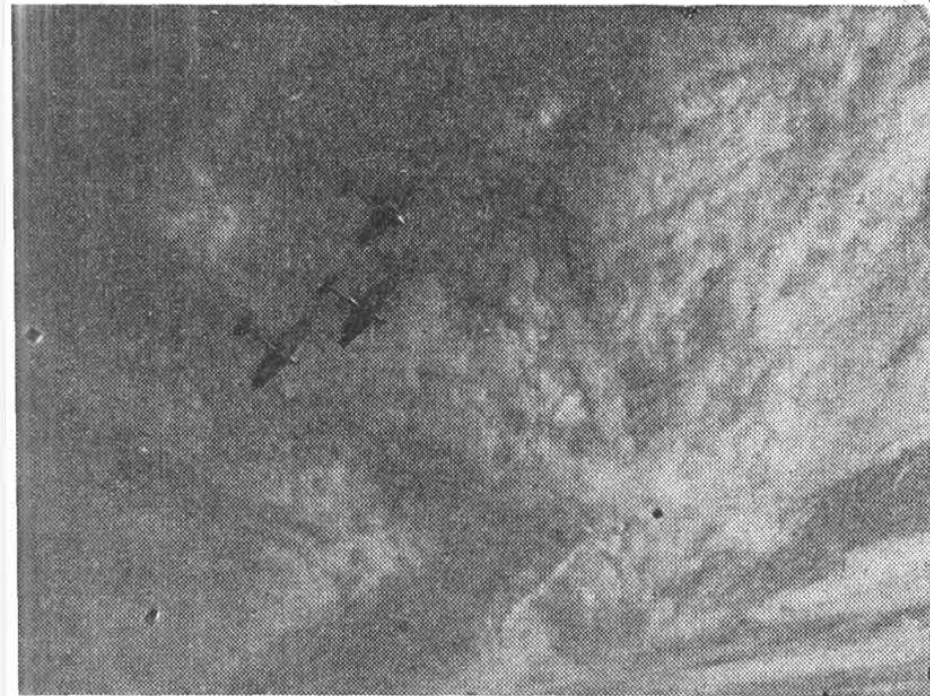
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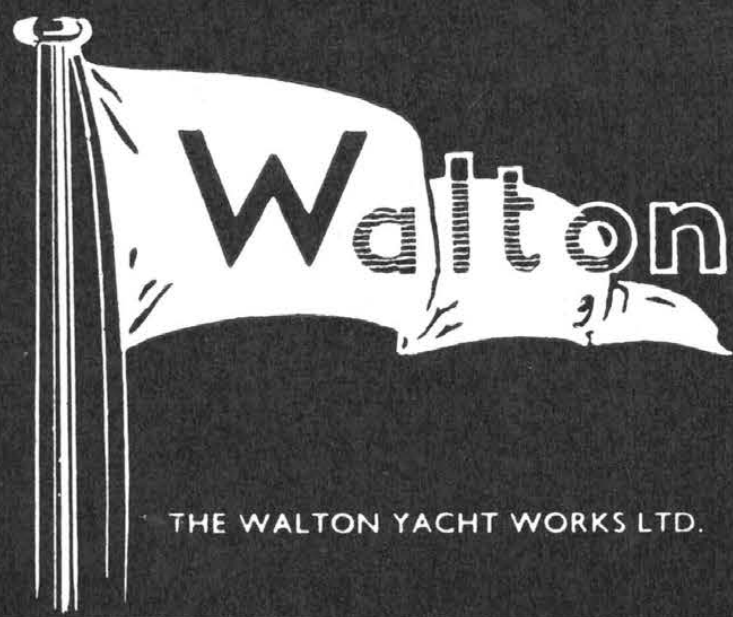
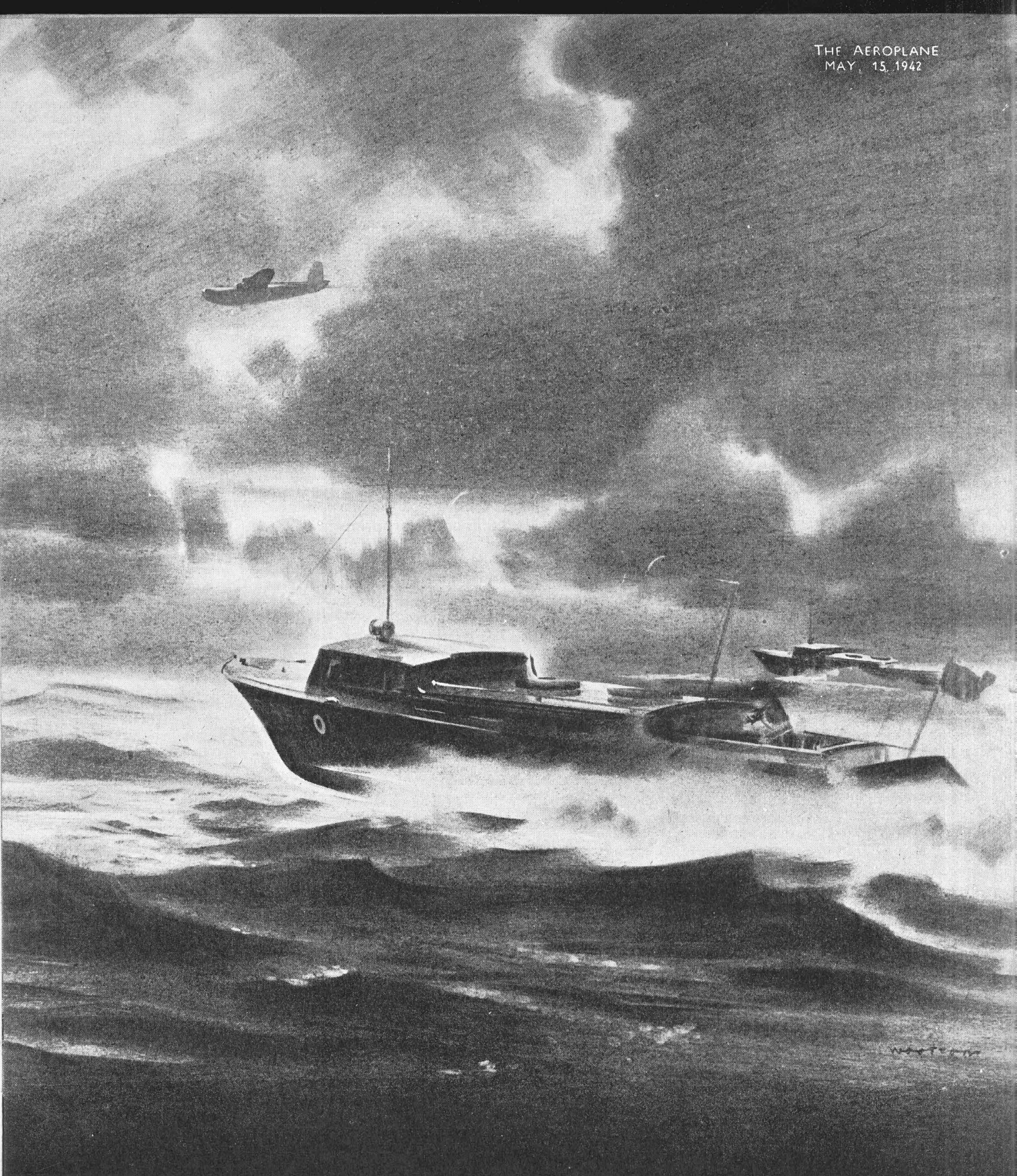
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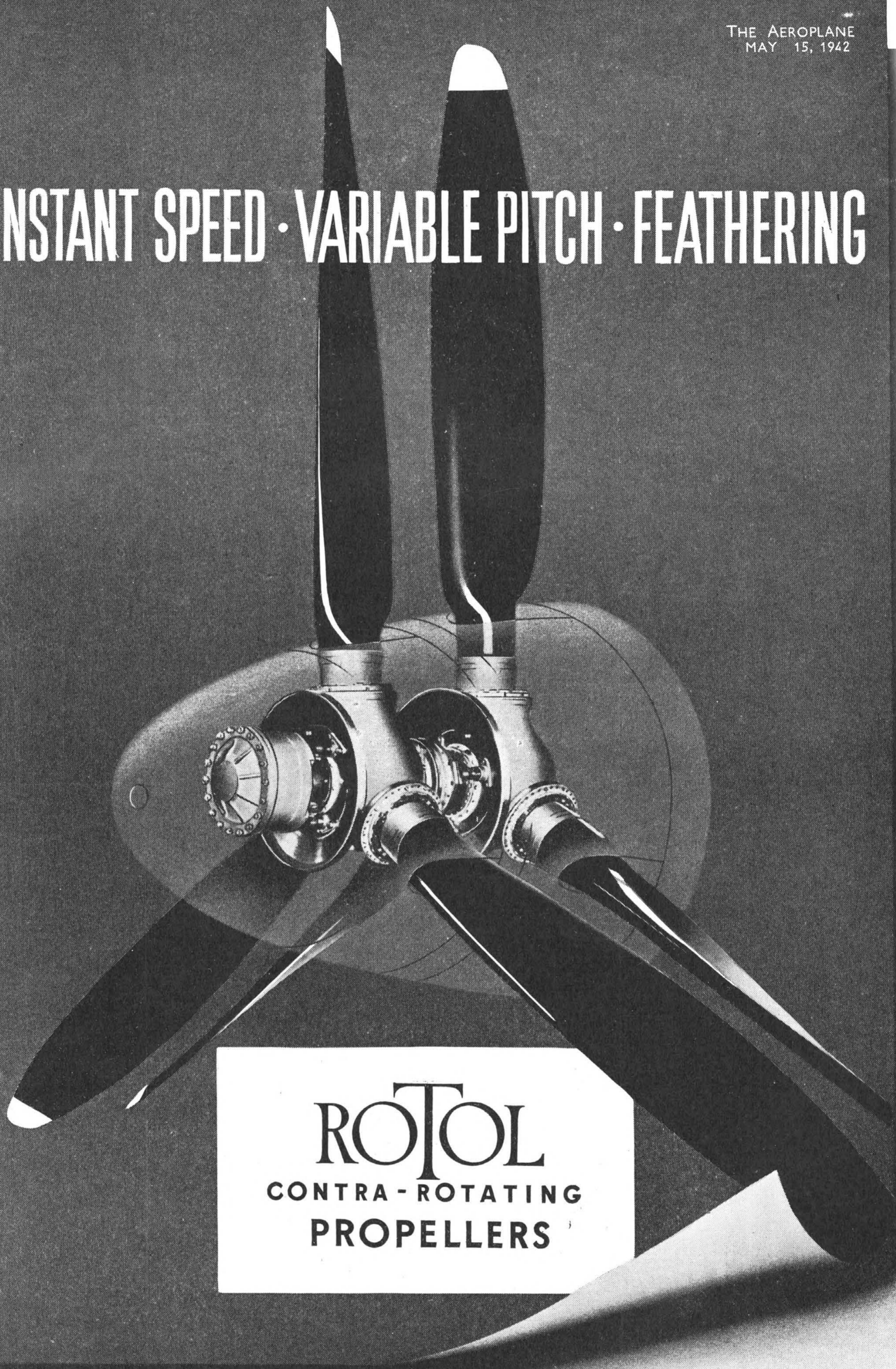


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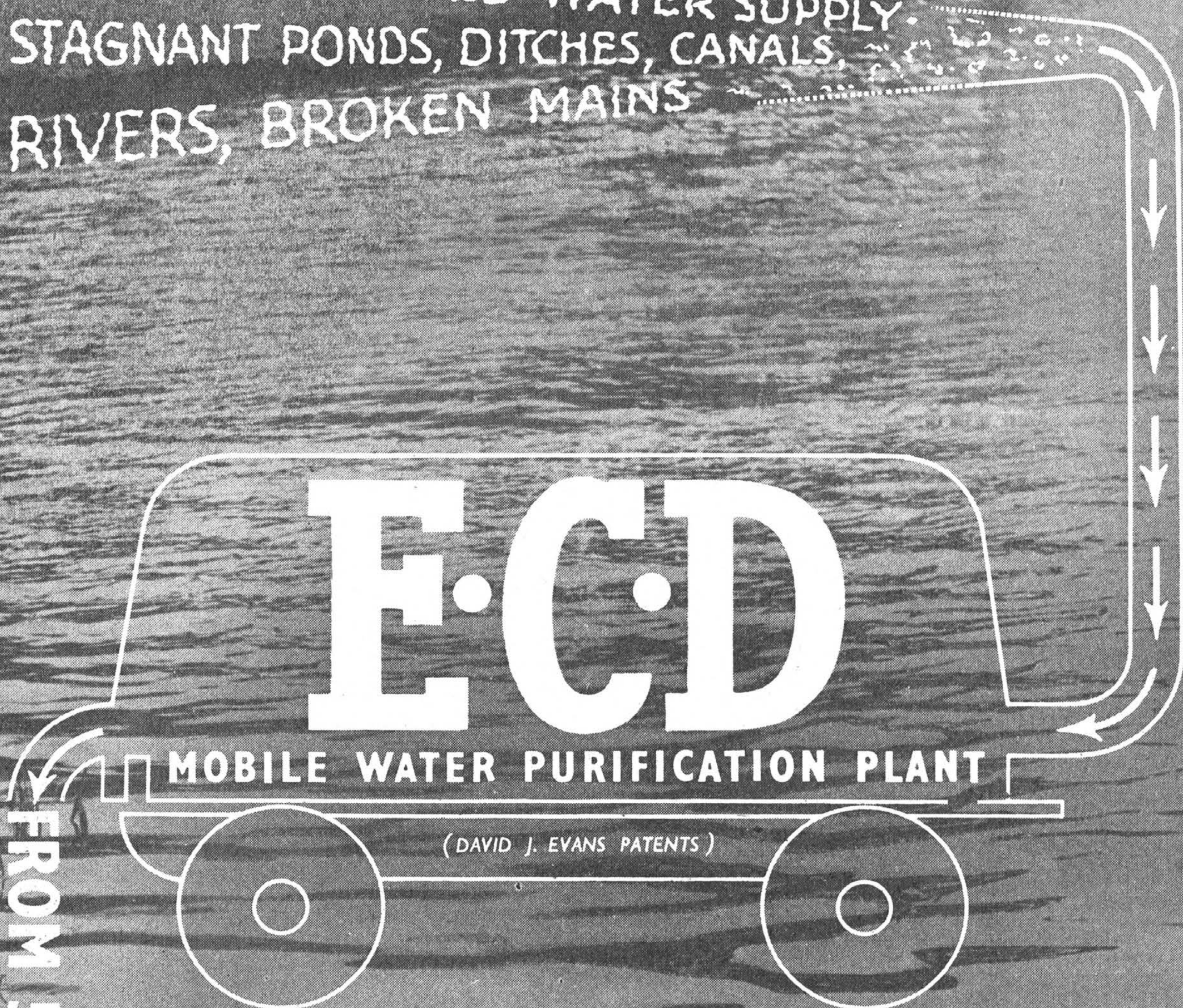
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CANISTERS OF CANNON FODDER.—Loading up a Bristol Beaufighter with drums of ammunition for its four 20 mm. shell guns.

**Previously Reported Missing Believed Killed on Active Service, Now Presumed Killed on Active Service**

- 106117 P/O E. H. Burton.
- 525423 Sgt. G. Gibson.
- 542041 Cpl. T. Hazelwood.
- 1251059 Sgt. R. L. Kitch.
- 536881 Sgt. J. L. Newell.
- 591310 Sgt. A. C. Smith.

**Previously Reported Missing, Now Presumed Killed on Active Service**

- 1164555 Sgt. J. W. Hamborough.
- 627885 F/Sgt. R. R. Jowett.
- 1052300 Sgt. A. Mewbould.
- 966882 Sgt. H. G. Simpson.
- 1182408 Sgt. C. W. Strutt.
- 1173836 Sgt. K. T. F. Blackmore.

**Wounded or Injured on Active Service**

- 1387147 A.C.2 F. A. Hall.
- 1274854 A.C.2 W. A. F. Kerby.
- 1081482 Sgt. T. J. Roberts.
- 1360046 A.C.1 M. Boylett.
- 1360698 A.C.1 J. P. Hadrill.
- 646320 Sgt. W. L. Henderson.
- 548803 L.A.C. C. J. Hugill.
- 618722 A.C.1 R. D. Lightburn.
- 566979 Sgt. A. Macdonald.
- 1028012 Sgt. H. Wilson.
- 927960 L.A.C. P. M. Woolbridge.

**Died of Wounds or Injuries Received on Active Service**

- 1302238 L.A.C. G. W. Bond.
- 640791 L.A.C. M. Glassman.

**Died on Active Service**

- 610003 L.A.C. T. Allen.
- 1034646 A.C.1 R. Armstrong.
- 1306197 L.A.C. J. J. Ayres.
- 656335 Cpl. C. A. Crapper.
- 87115 F/O P. C. T. Dewar.
- 551711 Sgt. W. H. A. Drewcock.
- 1020244 L.A.C. H. Fearney.
- 1084527 A.C.1 S. A. Gamble.
- 1509861 A.C.2 T. W. Hollies.
- 632192 L.A.C. J. G. Logan.
- 1579157 A.C.2 A. H. Mole.
- 1062124 L.A.C. W. D. Nesbitt.
- 1535546 A.C.2 G. F. Siddron.
- 84711 F/O G. E. Walker, D.F.C.
- 1241030 A.C.2 E. G. Waters.
- 1374686 A.C.2 W. McB. A. Webster.

- 1139633 A.C.1 J. Winter.
- 1455545 A.C.2 A. W. Baker.
- 1099624 A.C.2 C. L. Bowey.
- 1554873 A.C.1 A. MacG. Foster.
- 651522 A.C.1 J. G. Hill.
- 1355605 L.A.C. C. King.
- 118496 P/O J. T. Mainwaring.
- 1552058 A.C.2 T. Mair.
- 1457634 A.C.2 C. E. Neal.
- 87934 Act. F/L R. B. Oliver.
- 1037565 A.C.2 R. P. Short.
- 1046439 A.C.2 R. Smith.
- 529017 L.A.C. A. G. Snelling.
- 326662 W.O. A. H. Stephens.
- 1025857 L.A.C. J. H. Tabner.

**Previously Reported Missing, Now Reported Prisoner of War**

- 90408 Act. W/C A. Eyre, D.F.C.
- 45050 Act. F/L D. W. Thomas.

**AMENDMENT TO CASUALTY LIST NO. 107**

Under the heading "Previously Reported Missing, Now Presumed Killed in Action"

For 566398 Sgt. N. H. Thomas, read 566398 F/Sgt. N. H. Thomas.

**AMENDMENT TO CASUALTY LIST NO. 124**

1051140 Sgt. J. A. Lancaster. Should have appeared under the heading "Wounded or Injured in Action" and not "Wounded or Injured on Active Service."

**CORRECTION TO CASUALTY LIST NO. 126**

1390854 A.C.2 J. G. Frost under the heading "Died on Active Service" should have read 1390854 L.A.C. J. G. Frost.

**AMENDMENT TO CASUALTY LIST NO. 127**

Under the heading "Missing"

For 37465 S/L V. S. Butler, D.F.C., read 37465 A/W/C V. S. Butler, D.F.C.

**W.A.A.F.**

**Died on Active Service**

- 437410 A.C.W.2 M. Hughes.
- 891600 Sgt. E. Johnson.

**ROYAL AUSTRALIAN AIR FORCE**

**Killed in Action**

- Aus.402731 Sgt. C. A. Cornwell.
- Aus.402429 Sgt. L. R. Williams.

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

- Aus.404626 P/O R. L. O. Ryder.

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

- Aus.404264 Sgt. J. Shannon.

**Previously Reported Missing, Now Reported Killed in Action**

- Aus.400833 F/O D. Rutter.

**Died of Wounds or Injuries Received in Action**

- Aus.408118 Sgt. W. Macmichael.

**Missing**

- Aus.404453 P/O R. K. Durbridge.
- Aus.404550 Sgt. R. N. Lonergan.
- Aus.400373 P/O M. J. Martel.
- Aus.406185 Sgt. L. J. Martin.
- Aus.400352 Sgt. M. A. McDonald.
- Aus.407461 Sgt. G. L. Skinner.
- Aus.407270 Sgt. D. A. Giles.
- Aus.400708 Act. F/O G. T. Heard.
- Aus.402749 Sgt. E. M. Oldham.
- Aus.402417 Sgt. A. W. Taylor.

**Killed on Active Service**

- Aus.403355 Sgt. R. J. Marre.
- Aus.19098 Cpl. R. A. Ashfield.
- Aus.400988 Sgt. C. C. Scott.

**Died of Wounds or Injuries Received on Active Service**

- Aus.406392 Sgt. W. A. Godfrey.
- Aus.404402 Sgt. F. J. Hiesler.
- Aus.405028 Sgt. J. A. Stevenson.

**ROYAL CANADIAN AIR FORCE**

**Killed in Action**

- R.62738 F/Sgt. C. S. Goodenough.
- R.63969 F/Sgt. G. F. King.
- R.78024 F/Sgt. J. L. Moore.
- J.5327 P/O T. T. B. Stoker.
- R.69710 Sgt. R. E. Simonsen.

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

- R.72506 Sgt. E. A. Trednick.
- R.58303 F/Sgt. G. N. Fullerton.
- R.77004 Sgt. F. J. Goat.
- R.78250 F/Sgt. R. H. McMillan.
- R.65205 Sgt. C. E. Wheeler.

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

- J.4543 P/O J. F. Codville.
- J.3720 P/O P. D. G. Stuart.
- C.1117 F/O T. B. Little.
- J.3602 P/O G. C. O'Neill.
- R.54535 Sgt. D. G. Pettet.
- J.4521 Act. F/O E. L. Shea.
- J.4760 F/O A. W. Troup.
- R.71606 Sgt. M. R. R. Vair.

**Wounded or Injured in Action**

- R.55591 F/Sgt. S. A. Taylor.

**Missing Believed Killed in Action**

- J.7429 P/O R. P. Hunter.
- R.64409 Sgt. J. M. Broddy.
- R.69166 Sgt. E. C. Evans.
- R.78261 Sgt. F. C. Garnett.
- J.5992 P/O J. R. Gorham.
- J.5033 P/O R. L. G. Hosea.
- J.15172 P/O J. M. Runner.
- J.4814 Act. F/O J. F. K. Sandys.
- J.4737 P/O W. F. Ash.
- R.60244 F/Sgt. J. E. Gilloy.
- R.60117 W.O. R. H. Gridley.
- J.6967 P/O R. H. McKillop.
- R.75144 F/Sgt. W. A. Murphy.
- J.15075 P/O J. W. Sills.

**Killed on Active Service**

- R.80183 F/Sgt. R. N. Coleman.
- R.94887 Sgt. T. D. Dakin.
- R.54498 Sgt. H. W. Garvin.
- R.74713 F/Sgt. C. H. Jay.
- J.7038 P/O W. I. Jones.
- R.78480 F/Sgt. R. W. Lemere.
- P/O H. A. O'Blenes.
- R.56394 Sgt. P. G. O'Brien.
- R.75618 Sgt. R. R. Oliver.
- R.67828 Sgt. M. F. Ramsey.
- R.80874 Sgt. M. D. Rochfort.
- R.83471 Sgt. J. L. Wyatt.

**Missing Believed Killed on Active Service**

- R.91560 Sgt. W. O. Krueger.

**Previously Reported Missing, Now Presumed Killed on Active Service**

- R.65791 Sgt. J. E. Jamieson.
- R.60960 Sgt. J. R. Talbot.

**Wounded or Injured on Active Service**

- R.86633 Sgt. J. A. Hull.
- R.98343 Sgt. H. C. Byrd.
- R.67946 F/Sgt. O. E. Wilson.

**Died of Wounds or Injuries Received on Active Service**

- R.91798 Sgt. G. A. P. Sanders.

**Died on Active Service**

- R.76815 L.A.C. W. F. Cramer.
- R.78336 L.A.C. A. M. Galbraith.

**ROYAL NEW ZEALAND AIR FORCE**

**Killed in Action**

- NZ.404859 Sgt. J. G. Finn.

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

- NZ.403470 Sgt. G. Morcom.
- NZ.404557 Sgt. D. W. Thane.

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

- NZ.403000 Sgt. A. H. Harrison.
- NZ.404011 Sgt. T. Y. Wyllie.

- NZ.403312 Act. F/L E. G. Edmunds.
- NZ.402524 Sgt. H. McL. Macdonald.
- NZ.40924 Sgt. W. H. J. Milner.
- NZ.404961 P/O L. W. Stevenson.

**Missing, Believed Killed in Action**

- NZ.401413 Sgt. R. A. Scragg.

**Missing**

- NZ.402974 Sgt. C. E. J. Aitchison.
- NZ.39857 Act. F/L T. J. D. Baber.

- NZ.102534 Sgt. J. L. Brown.
- NZ.401756 P/O J. Earle.
- NZ.404095 Sgt. H. J. Price.
- NZ.41371 Sgt. C. R. Spence.
- NZ.404985 Sgt. R. D. J. Woodcock.
- NZ.401800 P/O L. A. Wright.

**Wounded or Injured in Action**

- NZ.404887 Sgt. D. Buchanan.

**Killed on Active Service**

- NZ.401247 P/O R. N. Allen.
- NZ.411891 Sgt. E. H. Hawken.

**Previously Reported Missing, Now Reported Prisoner of War**

- NZ.403454 P/O G. A. Kennedy.

**SOUTH AFRICAN AIR FORCE**

**Killed in Action**

- 205468 Air/Sgt. F. H. J. Bender.
- 103432 Lt. I. S. Ross.

**Missing**

- 8722 Lt. G. Bennett.
- 28833 Air/Sgt. D. N. Johnston.
- 173328 Air/Sgt. C. J. Kincaid.
- 102745 Major R. Tennent.

**Killed on Active Service**

- 41984 Sgt. J. J. Botha.
- 103904 Lt. G. Hackland.
- 103541 2nd Lt. K. I. Jacobs.
- 202904 Capt. H. M. Leith.
- 103877 2nd Lt. F. H. Lumley-Linton.

- 98779 Air/Mech. R. Searle.
- 47324 Lt. M. H. Tathan.
- 102104 2nd Lt. C. H. Gielink.

**Died on Active Service**

- 212285 Air/Mech. D. J. Smit.

**Previously Reported Missing, Now Reported Safe**

- 103079 Lt. W. Copland.

**INDIAN AIR FORCE**

**Killed on Active Service**

- F/O S. Chafatbartyrn.

**Royal Air Force Awards**

HIS MAJESTY THE KING has approved the following awards for gallantry in flying operations against the enemy at Home, in the Far East, the Middle East and Malta:—

**Distinguished Flying Cross**

- Flight Lieutenant D. J. C. Pinckney, R.A.F.V.R.—No. 67 Squadron (since reported missing).
- Flight Lieutenant B. F. Rose, R.A.A.F.—No. 248 Squadron.
- Act. Flight Lieut. R. M. Lloyd, R.A.F.V.R.—No. 185 Squadron.
- Act. Flight Lieut. N. C. Macqueen, R.A.F.V.R.—No. 249 Squadron.

- Pilot Officer D. O. Macdougall.
- Pilot Officer O. O. Ormrod, R.A.F.V.R.—No. 185 Squadron.
- Pilot Officer J. A. Plagis, R.A.F.V.R.—No. 249 Squadron.
- Pilot Officer D. J. Scott, R.N.Z.A.F.—No. 3 Squadron.
- Pilot Officer Philip Wigley, R.A.F.V.R.—No. 185 Squadron.

**Distinguished Flying Medal**

- Flight Sergeant G. E. Horricks.—No. 185 Squadron.
- Sergeant J. L. Boyd.—No. 185 Squadron.
- Sergeant G. A. Williams, R.N.Z.A.F.—No. 67 Squadron.

The following awards to an officer and airman of the R.A.A.F. have been made for their gallantry in saving the rest of the crew when their aeroplane was attacked by two Japanese fighters and forced to land in the open sea:—

**George Medal**

- Flying Officer N. W. Webster.
- Sergeant L. M. Van Praag.

**Administrative and Special Duties Branch**

THE Administrative and Special Duties Branch of the R.A.F. is in future to be divided into two sections:—Administrative and Miscellaneous Duties, which will include officers of the Administrative and Special Duties Branch employed on duties other than those to be shown as special duties; and Special Duties, which will include, under sub-headings, the names of all officers who, though not qualified for the Technical Branch, are employed on duties of a semi-technical nature in connection with armament, electrical engineering, engineering, marine craft, mechanical transport, photography and signals.

The existing conditions of promotion, rates of pay and so forth will continue to apply to the officers now to be shown in the Special Duties section of that branch.



BOMBING BURMA.—Bristol Blenheims operating from India have been in action in Burma again recently, bombing Japanese barges and other targets.

## Extracts from The London Gazette

Air Ministry, May 5.

### ROYAL AIR FORCE

**GENERAL DUTIES BRANCH.**—To be *Plt. Offs.* on prob. (emergency):—*Wt. Offs.*: Mar.: I. F. B. Walters, D.F.C., C. C. Jackson, E. G. Poynting. Apr.: W. R. Crich, G. R. Aggett. Temp. *Wt. Offs.*: Feb.: Henry Morton, D.F.M., L. S. Wyse, D.F.M. *Flt. Sgts.*: Feb.: F. C. Wilson. Mar.: G. N. W. Macfarlane, George Whittaker, D.F.M., E. P. Stephan-Smith, D.F.M. Apr.: R. D. MacK. Kenneth. Temp. *Flt. Sgts.*: Jan.: Patrick Anderson. Feb.: John Pearce, Royce Jarvis. Mar.: G. P. Ward. *Sgts.*: Feb.: P. G. Barber, R. W. Findlay. Apr.: J. B. G. Bailey.

*Flg. Offs.* (prob.) confmd. in appts.:—Mar.: O. D. Thomas. Apr.: D. C. Barnett.

*Sqn. Ldr.* F. R. Foster to be *Wg. Cdr.* (temp.). Mar.

*Flg. Offs.* to be *Flt. Lts.* (war subs.):—Jan.: R. P. Beaumont, D.F.C. Feb.: G. J. Le Mar. Mar.: P. M. Dobree Bell, R. F. Forbes, B. R. Champion, A. F. Fegen, R. M. D. Hall (2nd Lt. R.T.R.), D. S. Kinder, F. A. Robshaw, R. Reeve. Apr.: F. B. Slade.

*Flg. Offs.* granted the rank of *Flt. Lt.* (war subs.):—Mar.: W. C. Hutchings, D.F.C. Apr.: W. C. Wignmore, P. H. Watts, D.S.O., D.F.C.

*Plt. Off.* D. M. Wright (2nd Lt. Black Watch) to be *Flg. Off.* (war subs.). Mar.

*Plt. Offs.* (prob.) to be *Flg. Offs.* (on prob.) (war subs.):—Mar.: R. M. Teale, G. Goodman (Sen. Mar. 12). Apr.: R. G. K. Smith, F. G. Sutton. *Plt. Offs.* granted the rank of *Flg. Off.* (war subs.):—Feb.: D. C. Barnett. Mar.: O. D. Thomas.

To be seconded for Special Duty. Oct. 23:—*Flg. Off.* R. A. R. Falconer. *Plt. Offs.*: B. J. Norris, R. H. Payne, S. P. Smith, A. E. Carpenter.

*Gp. Capt.* G. W. Murlis-Green, D.S.O., M.C., is placed on the retd. list at his own request. Mar. 24.

**TECHNICAL BRANCH.**—To be *Flg. Offs.* on prob. (emergency):—*Wt. Offs.*: Dec.: K. R. McCormick (Sen. Mar. 7). Jan.: B. V. Humphrey (Sen. Aug. 13).

To be *Plt. Offs.* on prob. (emergency):—*Wt. Offs.*: Nov.: S. J. Hatter (Sen. Oct. 4). Dec.: L. C. Norris (Sen. Aug. 22). Jan.: G. E. Collins, T. W. A. Bailey (Sen. Dec. 2). Jan.: G. H. Hull (Sen. Dec. 6). Jan.: R. W. Davis (Sen. Dec. 29). *Act. Wt. Offs.*: Jan.: C. H. Loder (Sen. Dec. 11). Mar.: E. H. F. Lerner (Sen. Feb. 19). *Flt. Sgts.*: Oct.: J. E. G. Hoile (Sen. Aug. 28). Oct.: S. G. P. Ellender (Sen. Oct. 4). Jan.: E. C. Butterfield (Sen. Dec. 15). *Act. Flt. Sgts.*: Nov.: Martin Madders (Sen. Oct. 27). Jan.: C. S. Dowling (Sen. Dec. 2). *Sgts.*: Dec.: J. V. O'Shea (Sen. Oct. 7). Dec.: H. L. Evans (Sen. Dec. 2). Jan.: S. A. Fentum (Sen. Nov. 25).

To be *Act. Plt. Offs.* on prob. (emergency):—*Wt. Offs.*: Nov.: Frederick Matthews (Sen. Oct. 1). Jan.: C. H. C. Down (Sen. Nov. 17), H. H. Isaac (Nov. 18), H. W. Osborne (Dec. 2), Claude Brotherton (Sen. Nov. 24). Feb.: L. G. Hayward (Sen. Nov. 4), F. F. H. Keene (Sen. Nov. 13), H. L. Noel (Sen. Dec. 3). *Act. Wt. Off.*: Jan.: C. L. Domoney (Sen. Dec. 3). *Flt. Sgts.*: Oct.: Gordon Lennox (Sen. Apr. 24). Nov.: D. B. Cruden (Sen. Oct. 13). Dec.: N. J. Davey (Sen. Oct. 7). Feb.: J. L. Down (Sen. Nov. 25), T. H.

Compton, W. J. Dunn (Sen. Nov. 17), J. R. Marchant (Sen. Nov. 19), William Edwards (Sen. Nov. 22), L. R. Male (Sen. Nov. 24), C. W. Buckingham (Sen. Nov. 25), C. B. Dodridge (Sen. Nov. 26), M. G. Farr (Sen. June 20), R. F. T. Gibbs (Sen. Nov. 26), H. L. Gregory (Sen. Dec. 2), A. L. Lowery (Sen. Dec. 4), R. G. Beaton (Sen. Dec. 8), Fred Gibbs (Sen. Dec. 9), F. J. Greenfield, M.B.E. (Sen. Dec. 10), W. J. F. Fenton (Sen. Dec. 18). Mar.: E. L. Orchard (Sen. Jan. 7). *Act. Flt. Sgts.*: Feb.: E. P. T. Milway (Sen. Nov. 25), L. R. Brooks (Sen. Dec. 6). *Sgts.*: Nov.: John Harris (Sen. Oct. 6). Jan.: W. J. Crook (Sen. Oct. 28), L. S. Edwards (Sen. Aug. 5). Feb.: E. N. Beswick (Sen. Oct. 22), Robert Clarke (Sen. Nov. 17), Stanley James (Sen. Nov. 18), Robert Ogle (Sen. Nov. 20), J. H. Maclaren (Sen. Nov. 24), Richard Los (Sen. Dec. 1), W. G. Frain (Sen. Dec. 3), G. L. Ogle (Sen. Oct. 30), S. J. D. Charters (Sen. Dec. 1), J. R. M. Longstaff, Harry Johnston (Sen. Dec. 3), F. A. Miller (Sen. Dec. 6), D. S. Marshall (Sen. Dec. 16), T. A. Gallop (Sen. Dec. 18), K. R. Crook (Sen. Dec. 11). *Cpl.*: Nov.: D. de M. Morgan-Bellinger (Sen. Aug. 6).

*Flg. Offs.* (prob.) confmd. in appts.:—Jan.: S. F. King. Apr.: A. H. Kidson, I. J. Cadwallader, J. L. Davey, S. F. Sharpe, R. J. Marks, E. W. C. Oldfield, M. G. McNama.

*Plt. Off.* (prob.) D. Farrell confmd. in appt. and to be *Flg. Off.* (war subs.). Apr. (Sen. Jan. 21).

*Plt. Off.* (prob.) W. A. Ballett confmd. in appt. Dec., and to be *Flg. Off.* (war subs.). May. (Sen. Mar. 31).

*Plt. Off.* (prob.) H. T. F. Locke to be *Flg. Off.* on prob. (war subs.). Oct.

*Act. Plt. Offs.* (prob.) to be *Plt. Offs.* (prob.):—Oct.: P. J. Sherwood (Sen. Sept. 15), L. Bellingham (Sen. Mar. 29). Nov.: F. J. A. Fry (Sen. Oct. 6). Mar.: R. C. Hazell (Sen. Dec. 13), L. V. Wrenn (Sen. Dec. 27), A. A. Adamson, H. Fincher (Sen. Jan. 11), R. Tomlinson.

The notifi. of Feb. 10 concern. C. W. Allsop is cancelled.

The notifi. of Oct. 3 concern. *Cpl.* G. A. S. Palmer should have appeared under R.A.F., and not R.A.F.V.R.

**AMENDMENTS.**—In notifi. of Nov. 18 concern. *Wt. Off.* F. G. Ryan for *Plt. Off.* read *Flg. Off.*

In notifi. of Mar. 24 concern. James Willson for *Wg. Cdr.* read *Wt. Off.*

In notifi. of Mar. 31 concern. *Plt. Off.* M. L. L. Bathe for Dec. 2, 1940, read Dec. 2, 1941.

**ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.**—To be *Plt. Offs.* on prob. (emergency):—*Wt. Offs.*: Jan.: E. A. Talbut (Sen. Oct. 30). Feb.: J. H. Passmore (Sen. Nov. 25). *Sgts.*: Dec.: H. R. G. Morris (Sen. Aug. 9). Mar.: Jack Lees (Sen. Dec. 30).

To be *Act. Plt. Offs.* on prob. (emergency):—*Flt. Sgts.*: Oct.: E. D. Webster (Sen. Aug. 12). Jan.: A. A. Youd (Sen. Sept. 23). Apr.: John Phillips (Sen. Oct. 19). *Sgt.*: Mar.: E. D. Hart (Sen. Nov. 11).

*Flg. Offs.* (prob.) confmd. in appts.:—Apr.: H. Brooks, G. L. Fox, F. A. Piper, A. Weaver, C. S. Bray, C. K. Buggy, H. S. Fender, M. J. Harris.

*Plt. Off.* (prob.) W. M. Clements confmd. in appt. and to be *Flg. Off.* (war subs.). Apr. (Sen. Mar. 13).

*Flg. Off.* W. H. B. Horne to be *Flt. Lt.* (temp.). Mar.

*Act. Plt. Off.* (prob.) G. H. Phillips to be *Plt. Off.* (prob.) Apr. (Sen. Jan. 29).

*Plt. Off.* (prob.) A. W. Warren is dismissed the service by sentence of General Court Martial. Apr. 15.

**EQUIPMENT BRANCH.**—*Wt. Off.* R. W. Broomhead to be *Plt. Off.* on prob. (emergency) Jan. (Sen. Aug. 2).

*Flg. Off.* (prob.) J. J. Lea confmd. in appt. Apr.

*Flg. Off.* A. J. Holliday to be *Flt. Lt.* (temp.). Mar.

**ACCOUNTANT BRANCH.**—To be *Plt. Offs.* on prob. (emergency):—*Wt. Offs.*: Oct.: W. E. Palmer (Sen. Aug. 26). Jan.: R. E. W. Scarlett (Sen. Nov. 7), H. W. E. White (Sen. Dec. 2). Feb.: H. W. Reeves (Sen. Nov. 28), William Gibson (Sen. Dec. 10).

To be *Act. Plt. Offs.* on prob. (emergency):—*Wt. Offs.*: Dec.: J. M. Ward (Sen. Oct. 17), Feb.: W. H. Osborne (Sen. Sept. 5).

*Plt. Off.* (prob.) H. R. Lloyd to be *Flg. Off.* on prob. (war subs.). Jan.

*Act. Plt. Offs.* (prob.) to be *Plt. Offs.* (prob.):—Jan.: T. John. Mar.: T. Congreve, H. E. Williams, S. E. Dawe, A. L. Bryant, F. A. Rose.

*Act. Plt. Off.* (prob.) W. J. Blyth to be *Plt. Off.* (prob.). June. (Subs. for notifi. of Sept.).

*Act. Plt. Offs.* (prob.) to be *Plt. Offs.* (prob.). Jan.: R. W. Baldwin, R. A. Payne, R. F. Stroud, G. E. Iles, V. K. Chancellor. (Subs. for notifi. of Mar. 24).

The notifi. of Dec. 16 concern. *Flt. Lt.* W. E. Wolsey is cancelled.

**MEDICAL BRANCH.**—*Wt. Off.* L. W. Francis to be *Flg. Off.* (Gr.-Mr.) on prob. (emergency). Feb. (Sen. Dec. 23).

### RESERVE OF AIR FORCE OFFICERS

**GENERAL DUTIES BRANCH.**—To be transf. to the Admin. and Spec. Duties Br.:—*Sqn. Ldr.* G. F. Hales. Apr. 23. *Flt. Lts.*: R. L. Bateman, Apr. 20; L. A. W. Deane, Apr. 25.

*Flg. Off.* N. Hill is transf. from class A to class C. June 24, 1939.

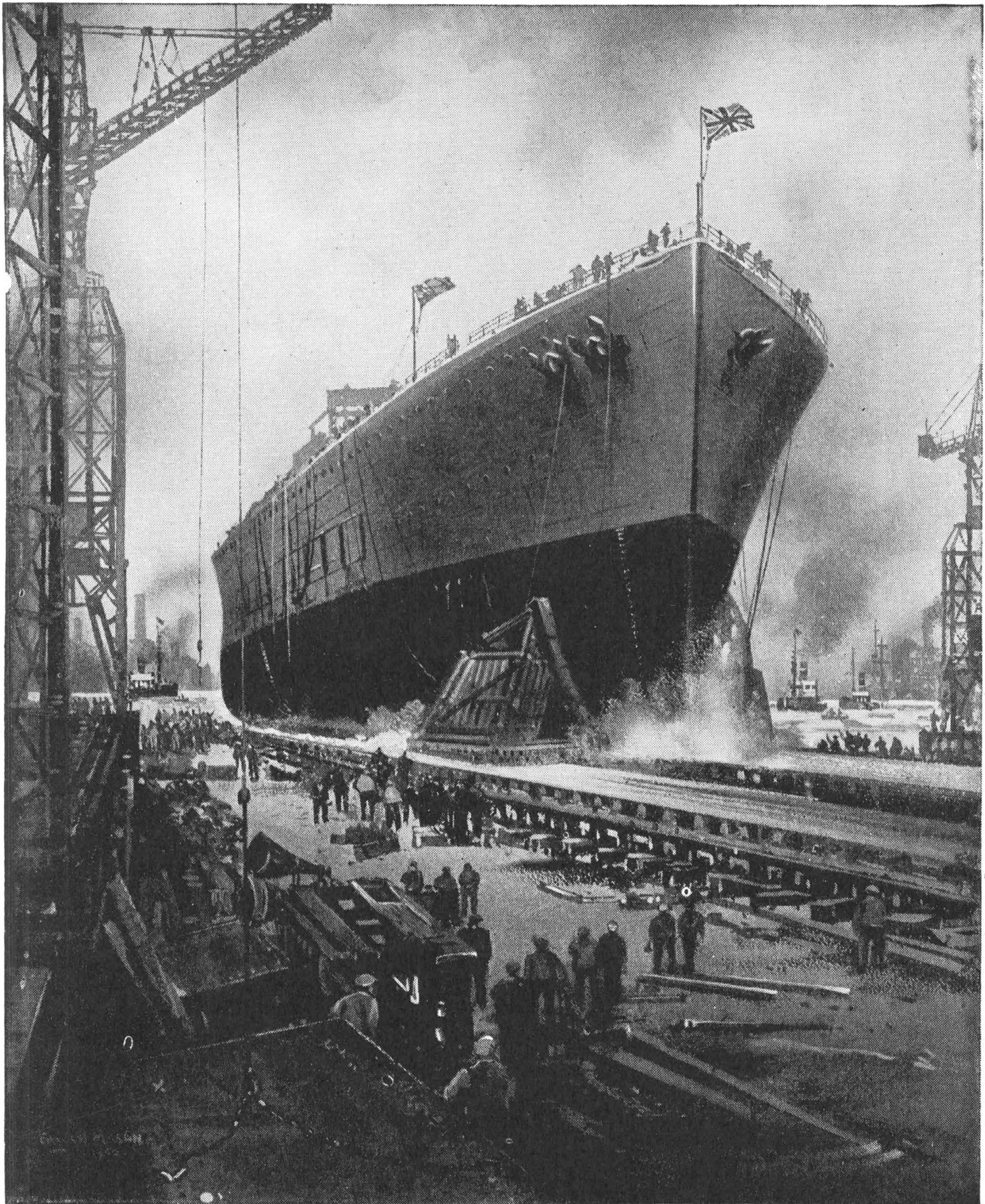
*Sqn. Ldr.* S. Byng-Maddick relinquishes his commn. in class CC on cessation of duty. Apr. 21.

**AMENDMENT.**—In notifi. of Mar. 10 concern. *Flt. Lt.* W. A. T. Synge for Nov. 27, 1939, read Nov. 27, 1941.

### ROYAL AIR FORCE VOLUNTEER RESERVE

**GENERAL DUTIES BRANCH.**—To be *Plt. Offs.* on prob. (emergency):—Oct.: A. W. Eller, J. B. Goodwin. Nov.: J. O. Lever. Feb.: C. H. Phipps, Cecil Neve, C. F. Ponsford, J. C. Kenworthy, A. S. Pearson. Mar.: J. D. Dunne, James Ross. *Wt. Offs.*: Mar.: W. J. J. Stevens, D.F.M. Apr.: Arthur Smith. Temp. *Wt. Offs.*: Jan.: Peter Hillwood. Mar.: Francis Lowe, D.F.M., L. M. Tomkins, R. J. Fowler. Apr.: R. J. Curtis, D.F.M., J. H. Fripp, J. F. Beckett, D.F.M. *Flt. Sgts.*: Jan.: K. F. Mills. Feb.: G. H. G. Thompson, J. E. Sainsbury. Mar.: R. M. Kildea, D. H. Nichols, L. A. Komaroff, G. C. Ross, L. H. Morgan, D.F.M., G. M. Shinnie, J. T. Rayner, E. O. Towers, J. J. Walker, A. C. Miller, A. F. Jackson, P. S. Marriott, D.F.M., W. C. Marsh.

# Another Step towards Victory

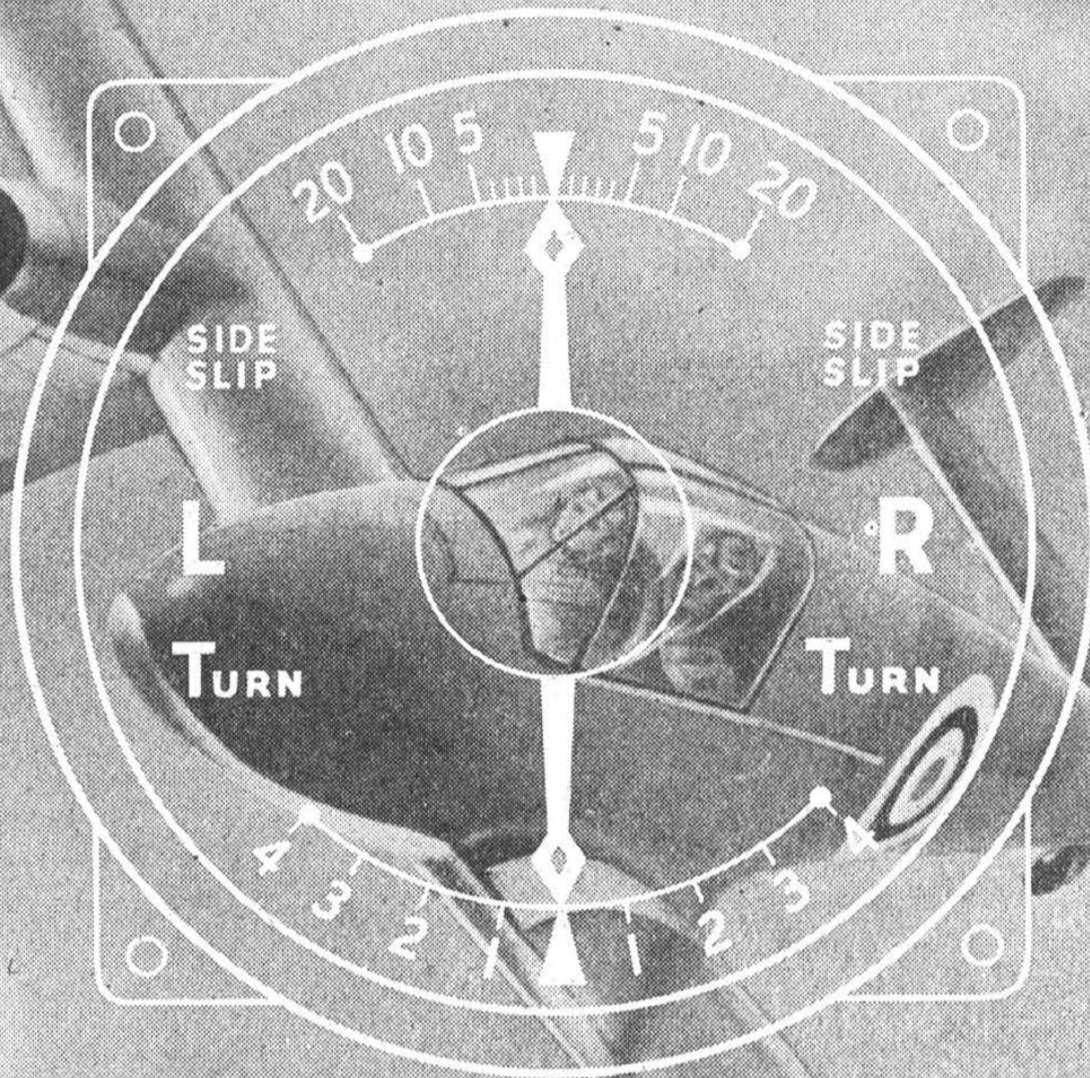


**MIGHTIER YET!**

*from a painting by FRANK H. MASON, R.I.*

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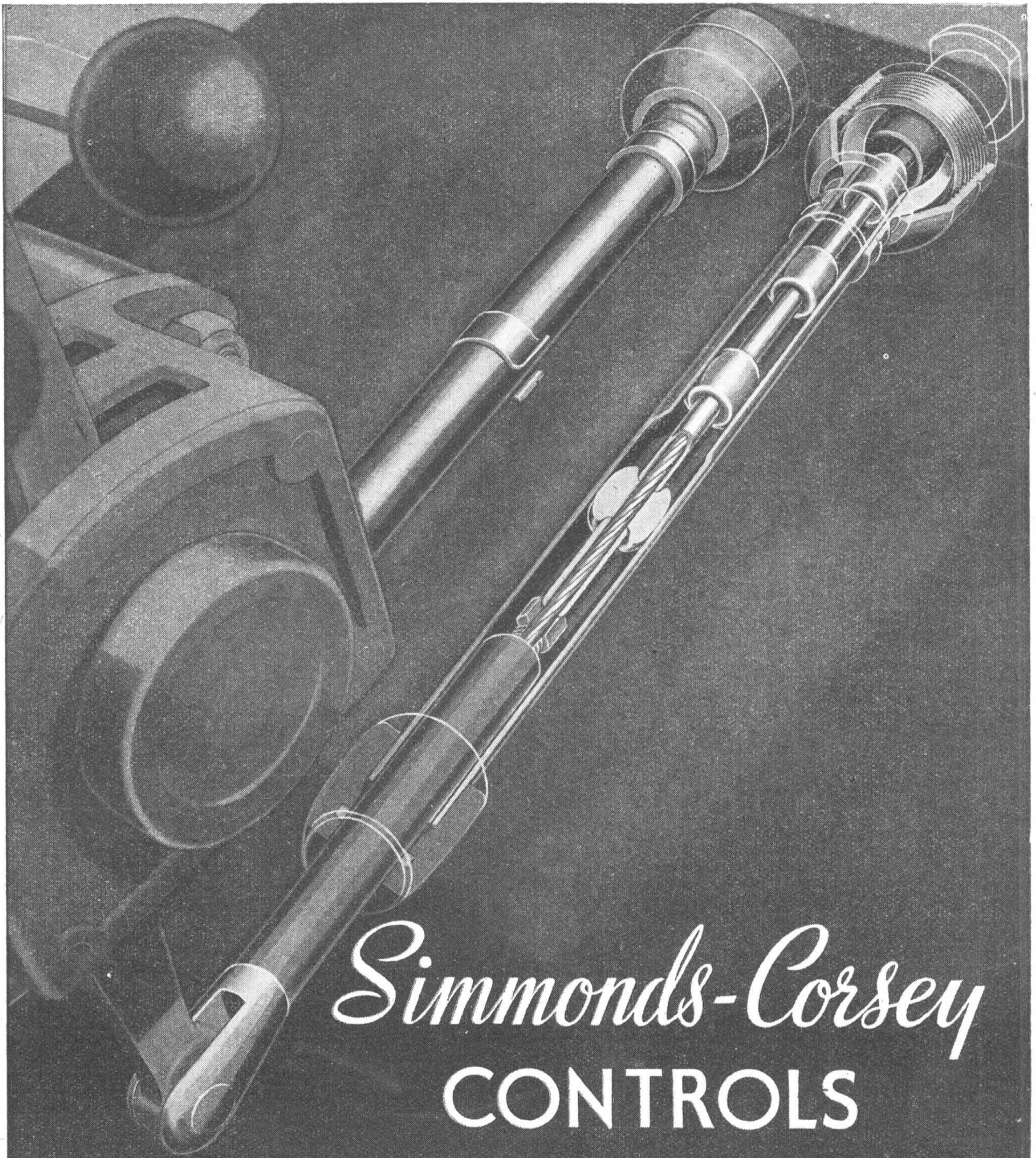
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## AEROPLANES OF THE JAPANESE ARMY AND NAVY AIR FORCES—I

**THE AICHI NAVY LL-97**  
(One 770 h.p. Aichi motor)

TYPE.—Reconnaissance floatplane.

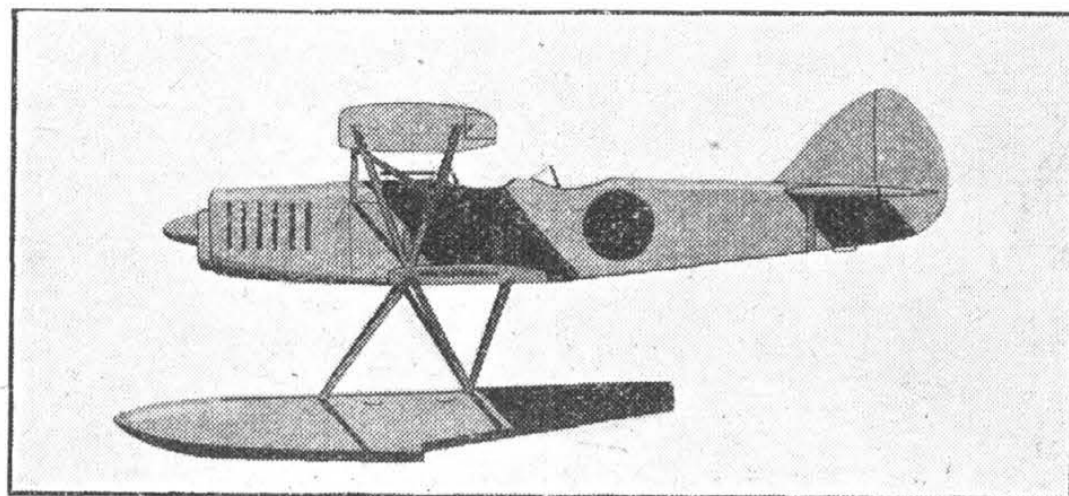
CREW.—Two.

ARMAMENT.—One fixed machine-gun and one movable machine-gun.

DIMENSIONS.—Span, 42 ft. 7 ins.; length, 32 ft. 6 ins.; height, 13 ft. 7 ins.; wing area, 430 sq. ft.

WEIGHT.—Loaded, 5,630 lb.

PERFORMANCE.—Max. speed, 180 m.p.h. at 13,000 ft.; range, 410 miles at 155 m.p.h. Made by Aichi Tokei Denki Kabushiki Kaisha (The Aichi Watch and Electric Machinery Co.), at Nagoya.

**THE AICHI NAVY LL-98**  
(Three 770 h.p. Aichi motors)

TYPE.—Bomber and reconnaissance floatplane.

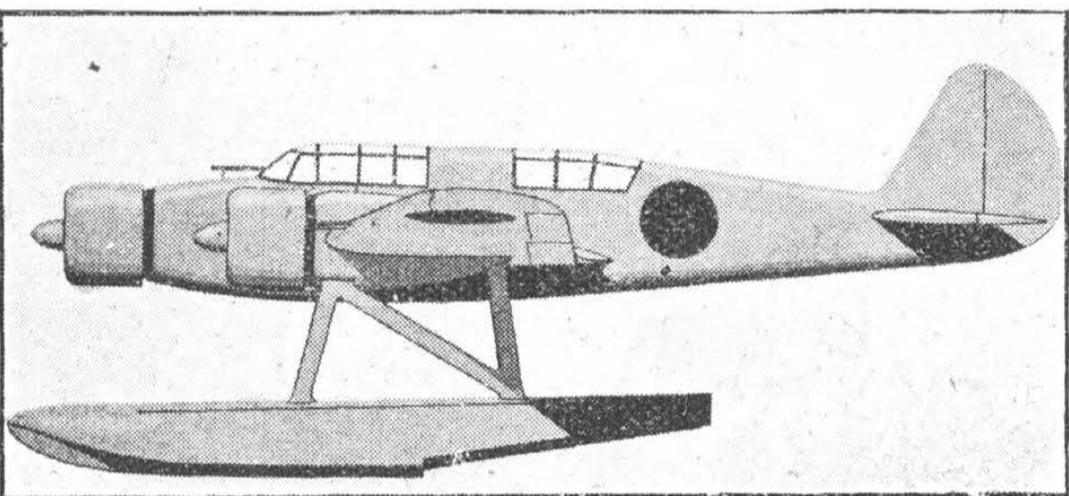
CREW.—Five.

ARMAMENT.—One fixed cannon, four fixed machine-guns and one movable cannon.

DIMENSIONS.—Span, 87 ft. 0 in.; length, 63 ft. 0 in.; height, 24 ft. 5 ins.; wing area, 940 sq. ft.

WEIGHT.—Loaded, 26,400 lb.

PERFORMANCE.—Max. speed, 230 m.p.h. at 13,000 ft.; range, 1,000 miles at 199 m.p.h.; service ceiling, 24,000 ft. Made by Aichi Tokei Denki Kabushiki Kaisha (The Aichi Watch and Electric Machinery Co.), at Nagoya.

**THE CONSOLIDATED NAVY LL-98**

(Two 1,200 h.p. Pratt and Whitney Twin Wasp motors)

TYPE.—General reconnaissance flying-boat.

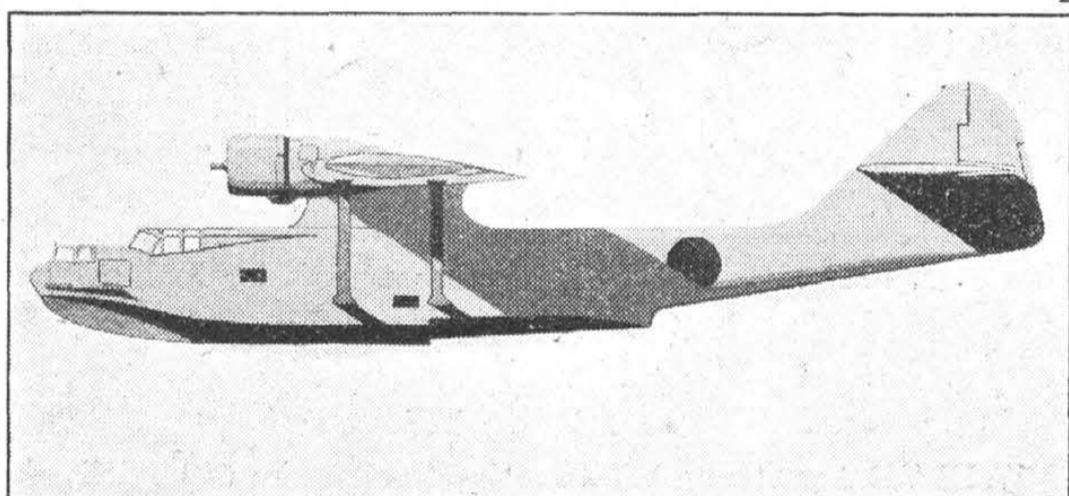
CREW.—Six.

ARMAMENT.—Four movable machine-guns.

DIMENSIONS.—Span, 104 ft. 0 in.; length, 65 ft. 1 in.; height, 18 ft. 6 ins.; wing area, 1,400 sq. ft.

WEIGHTS.—Empty, 14,538 lb.; loaded, 27,080 lb.

PERFORMANCE.—Max. speed, 190 m.p.h. at 10,500 ft.; range, 400 miles at 130 m.p.h.; service ceiling, 25,700 ft. Made by Consolidated Aircraft Corporation, at San Diego, California, U.S.A., and by an unknown Japanese company.

**THE FIAT-NICHII ARMY TB-98**

(The Fiat B.R.20)

(Two 1,030 h.p. Fiat A.80 R.C.41 motors)

TYPE.—Torpedo bomber.

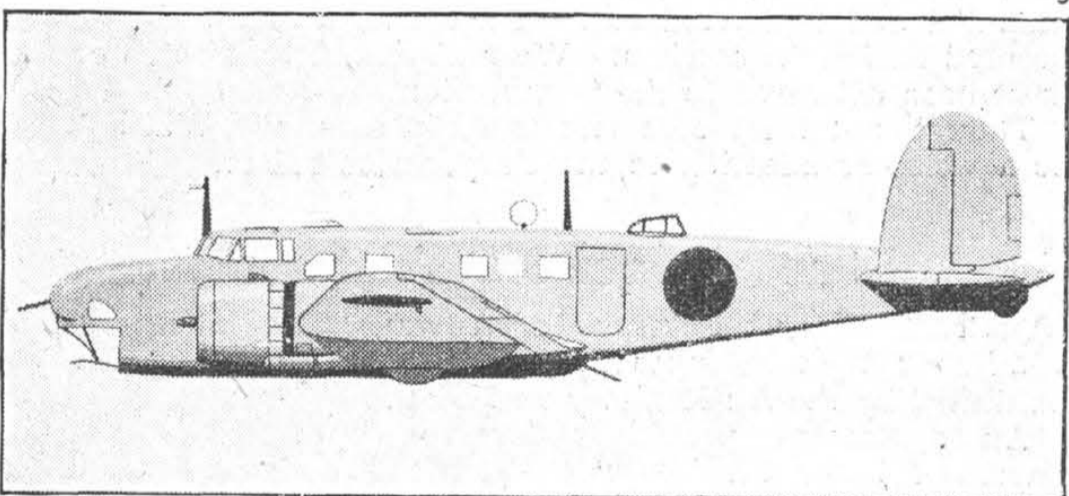
CREW.—Five.

ARMAMENT.—Three movable machine-guns.

DIMENSIONS.—Span, 70 ft. 6 ins.; length, 52 ft. 10 ins.; height, 14 ft. 1 in.; wing area, 796 sq. ft.

WEIGHTS.—Empty, 14,300 lb.; loaded, 22,220 lb.

PERFORMANCE.—Max. speed, 268 m.p.h. at 16,400 ft.; range, 1,863 miles at 214 m.p.h.; service ceiling, 29,520 ft. Made by Aeronautica D'Italia (Fiat), at Turin, Italy, and by Nichii Koku Kogyo Kabushiki Kaisha (The Nichii Aircraft Co.), at Kyoto.

**THE HEINKEL-AICHI ARMY TB-98**

(The Heinkel He 111)

(Two 880 h.p. BMW 132 motors)

TYPE.—Torpedo bomber.

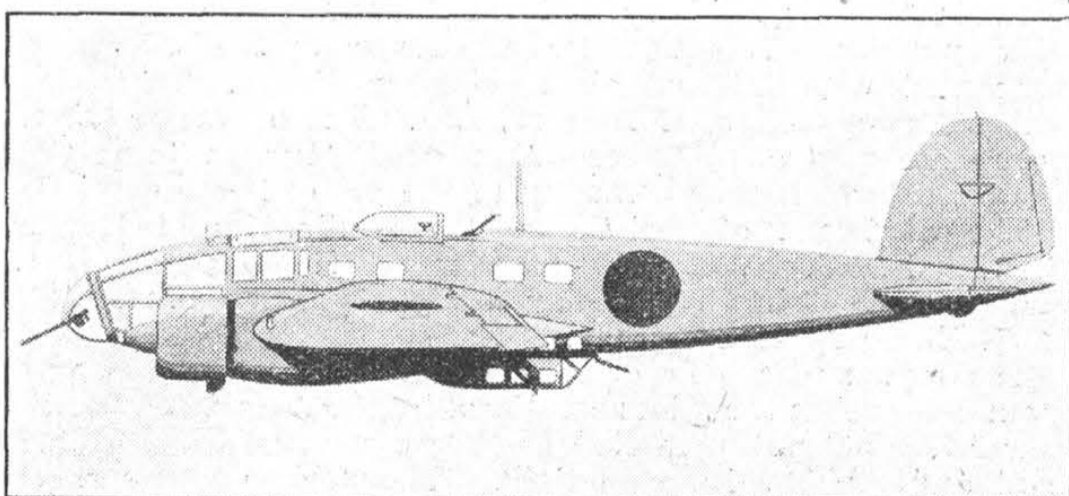
CREW.—Six.

ARMAMENT.—Six movable machine-guns.

DIMENSIONS.—Span, 74 ft. 3 ins.; length, 54 ft. 6 ins.; height, 13 ft. 9 ins.; wing area, 942 sq. ft.

WEIGHT.—Loaded, 16,764 lb.

PERFORMANCE.—Max. speed, 239 m.p.h. at 9,840 ft.; range, 870 miles at 192 m.p.h. Made by Aichi Tokei Denki Kabushiki Kaisha (The Aichi Watch and Electric Machinery Co.), at Nagoya.

**THE HEINKEL ARMY MC-98**

(The Heinkel He 116)

(Four 270 h.p. Hirth HM 508G motors)

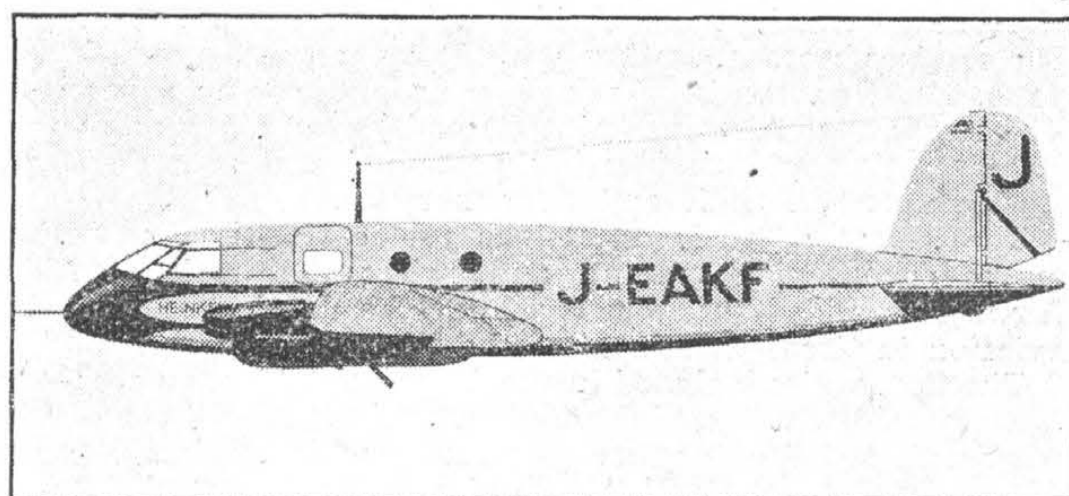
TYPE.—Transport.

CREW.—Four, and eight passengers.

DIMENSIONS.—Span, 72 ft. 2 ins.; length, 44 ft. 11 ins.; height, 12 ft. 5½ ins.; wing area, 677 sq. ft.

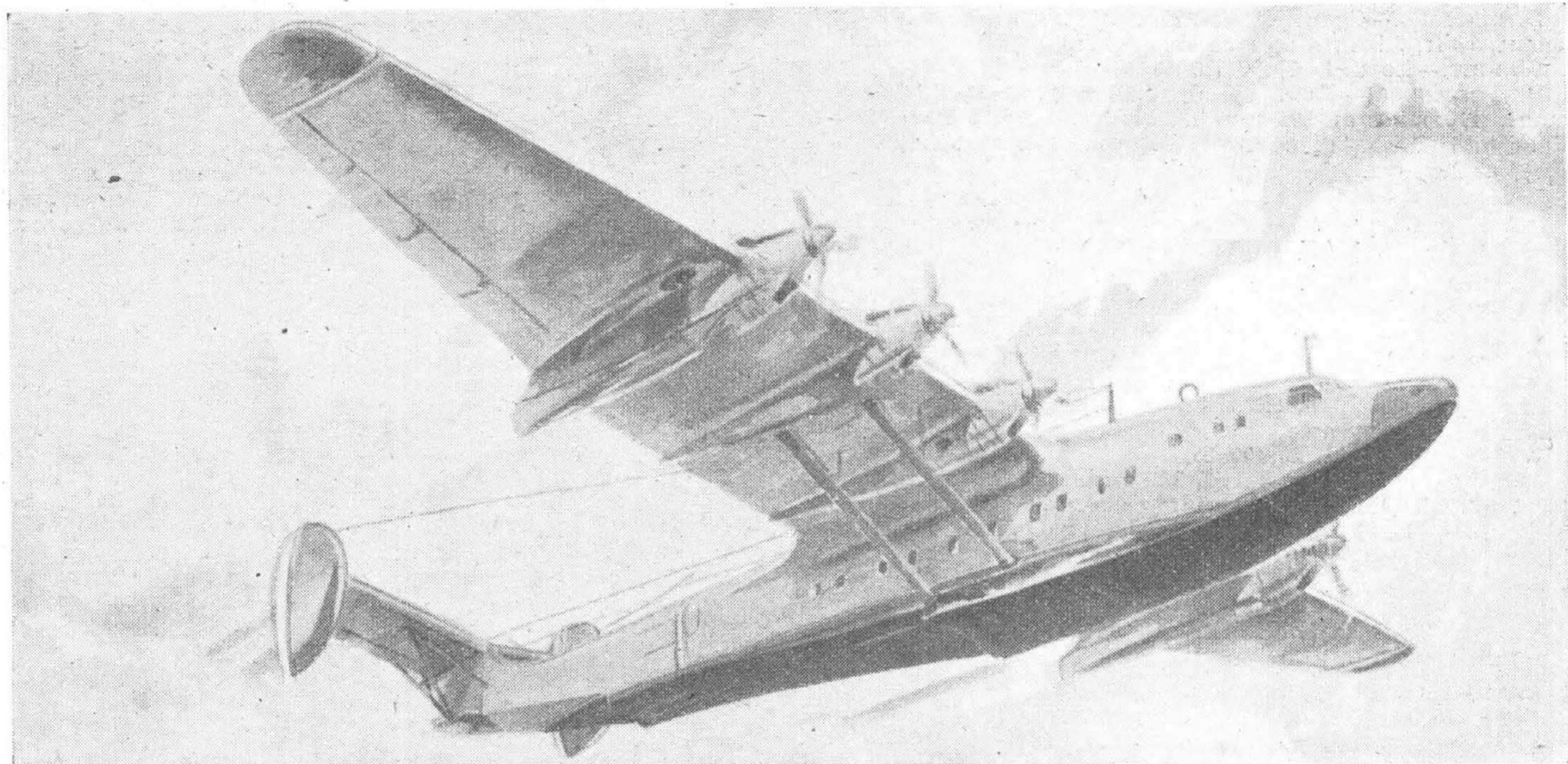
WEIGHTS.—Empty, 9,592 lb.; loaded, 15,686 lb.

PERFORMANCE.—Max. speed, 233 m.p.h. at 9,840 ft.; range, 2,795 miles at 198 m.p.h.; service ceiling, 21,650 ft. Made by Ernst Heinkel Flugzeugwerke G.m.b.H., at Rostock, Germany.



(Drawings by John H. Stroud, Copyright, "The Aeroplane.")

# AIR TRANSPORT



FLYING IN FRANCE.—A French artist's impression of the Potez 161 trans-Atlantic flying-boat (six 1,000 h.p. Hispano-Suiza motors) which was completed during the past year and is now flying.

## Freighters

**T**WELVE Armstrong Whitworth Whitleys are to be delivered to British Overseas Airways Corporation. They are being modified and registered as civil aeroplanes and will probably be used as freight carriers. We understand that three or four have been delivered to the Corporation.

Though not ideal commercial aeroplanes, the Whitleys will be a welcome addition to the Corporation's fleet.

## The Associated Airways

**A** REPORT on the Associated Airways group of internal air line companies operating in the United Kingdom was published by the Air Ministry on May 6.

An agreement providing for the operation of certain approved home services with financial assistance from the Air Votes was concluded with effect from June 27, 1940, between the Air Ministry and the Associated Airways group of companies. This includes all the companies at present concerned with internal air services in this country except Allied Airways (Gandar Dower), Ltd. The operations of this group are controlled by the Associated Airways Joint Committee, on which each company of the group is represented.

The Chairman of the Committee is Sir Harold Hartley, C.B.E., F.R.S.; Wing Commander A. H. Measures is the Manager; Captain G. P. Olley is Deputy Manager; and Mr. R. J. Ellery is the Secretary.

The report of the first year of operations under the agreement shows that the pilots employed by the Associated Airways flew 1,226,590 miles, carried 46,693 passengers, 889,898 lb. of mail and 227,332 lb. of freight. The most popular service was that to the Isle of Man. Other services operated were to Northern Ireland, the Hebrides, Eire, and the Scilly Isles. Six services were operating with 100 per cent. regularity by June, 1941, one with 97 per cent. and one with 96 per cent. The Associated Airways Joint Committee employs more than 100 operating and engineering personnel and uses de Havilland, Express, Rapide and Dragon types.

The report of their operations under war-time conditions makes encouraging reading and, when the work of Allied Airways is added, promises well for the development of civil aviation in Great Britain after the War.

The Companies included in the Associated Airways are:—Air Commerce, Great Western and Southern Air Lines, Isle of Man Air Services, Olley Air Services, Railway Air Services, Scottish Airways and West Coast Air Services.

## An American Visitor

**A**N AMERICAN aeroplane which may be seen in this country from time to time is the Boeing 307 Stratoliner (four 1,100 h.p. Wright Cyclone GR-1820-G102A motors). The fleet of five Boeing 307s of Transcontinental and Western Air Inc. were taken over by the U.S. Army Air Forces, but are being operated by T.W.A. for the U.S. Army. One of the routes they are used on is the special Atlantic service which was started last year by the U.S. Army Air Forces and was known as the Arnold Service because it was sponsored by Lt.-General H. Arnold.

Last year Boeing Fortress bombers were used on the Arnold Service.

## An Anniversary

**A** YEAR AGO, on May 13, 1941, the first 50,000 Airgraph letters arrived in London from the Middle East. Since then some 19,000,000 Airgraphs have been handled by the General Post Office, London, 9,000,000 on the outward services and about 10,000,000 on the inward services. Some 85,000 Airgraphs a day are dealt with at the G.P.O.

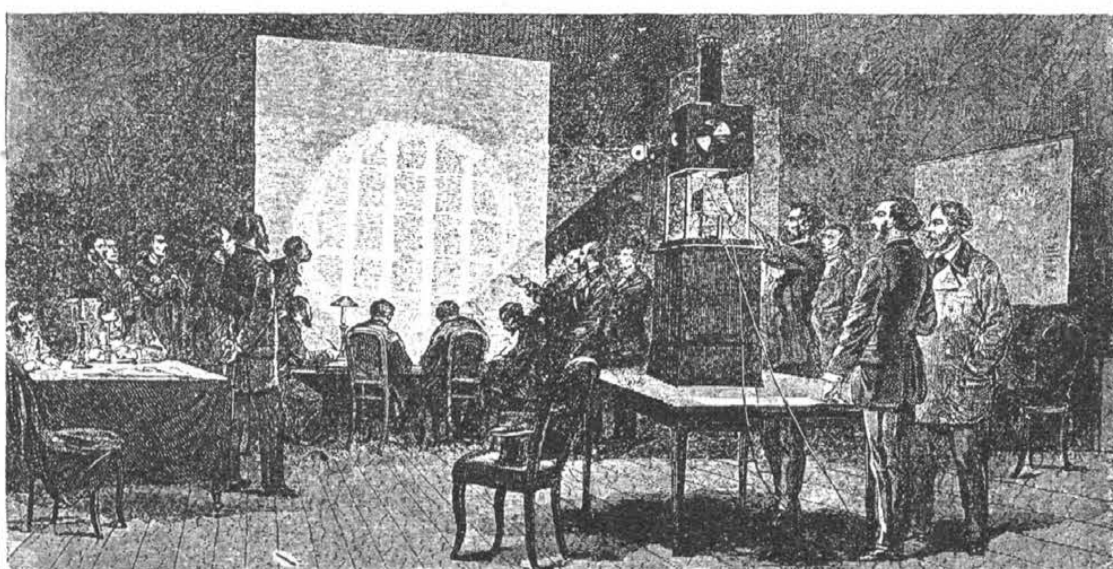
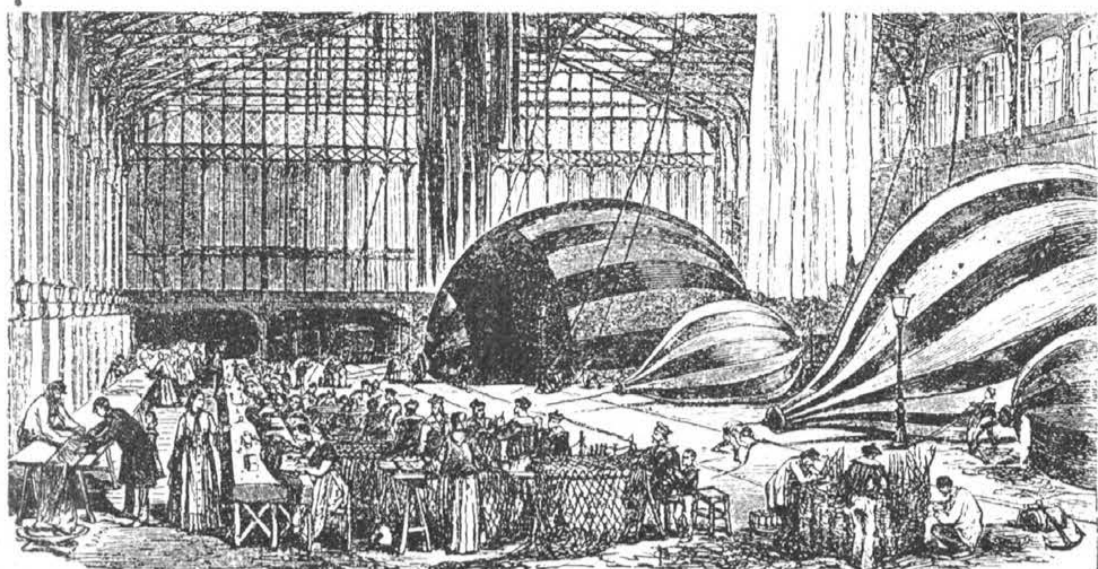
The service began with an inward service from the Middle East; the outward service to the Middle East was started on Aug. 15 last; in November this was extended to Aden and Iraq; on Feb. 2 this year Airgraphs were despatched from India for the first time; and by Mar. 17 Airgraph services were operating to and from East Africa. Towards the end of last year an Airgraph service from Canada was started for the Canadian forces overseas, and the U.S.A. is to start a similar service. Such is the advantage of the saving in weight and space by the Airgraph system of letters.

To the Middle East and Africa the usual time in transit is about 10 days, but there may be delays in the delivery of the Airgraphs because of the distances the letters have to travel to and from the Army units. Air mail letters average about 7 weeks to the Middle East and ordinary letters by surface routes about 11 weeks.

## Alaskan Expansion

**T**HE ALASKAN DIVISION of Pan-American Airways has acquired Lavery Airways, a small company operating in Alaska. By this acquisition Pan-American will be able to operate services between Fairbanks and Anchorage. The Company has recently received permission from the Civil Aeronautics Board to call at Tanana Crossing and Burwash Landing on its Fairbanks-Whitehorse services.

## SIDELIGHTS FROM THE PAST—XXIV—



THE FIRST AIRGRAPH SERVICE—TOURS TO PARIS, 1870-1871.

**D**URING the siege of Paris, in the Franco-Prussian War of 1870, communication with the rest of France was established by means of balloon and pigeon posts. The balloons were flown out of Paris across the Prussian lines, carrying messages, passengers and from two to as many as 34 pigeons. The pigeons carried messages similar to the present-day Airgraph letters.

Only eight balloons were available in Paris when the service was decided on, but workshops were established at the Gare d'Orleans and the Gare du Nord and about 60 balloons were built. Aeronauts were recruited and included a number of sailors who received a superficial training in ballooning and became known as "loups-aerien." Of the 68 ascents which were made from Paris they made about 30.

The balloons left Paris from four districts:—the Place Saint Pierre (Montmartre); the Gare du Nord; the Gare d'Orleans; and the Gare de l'Est (Strasbourg). Before leaving they were given meteorological reports on the wind and an estimate of time it would take to cross the Prussian lines. The story of the adventure of these balloons, only four of which were lost (two were brought down in the Prussian lines and two were lost at sea), is a history in itself.

The balloon service out of Paris lasted from Sept. 23, 1870, until Jan. 28, 1871, but the pigeon post service into Paris, which began at the same time, did not end until Feb., 1871.

At first the pigeons carried messages written on very thin paper, but in November, 1870, a service similar to the present Airgraph letter was developed with headquarters at Tours. There the messages were transcribed on large sheets of paper, which were reduced by micro-photography on thin films of collodium, so that 200 messages, or about 2,182 words, were reduced in size to about  $\frac{1}{4}$  by  $\frac{7}{16}$  in. size and weighed about half a gramme. Eighteen or 20 films were rolled in a tube fastened under the wing of a pigeon and despatched to Paris.

On arrival the messages were unrolled in a special solution and then put into a sort of magic lantern, which enlarged them so they could be copied. These messages were limited to 20 words and cost 50 centimes a word. On Nov. 16, 1870, the G.P.O. London announced that messages for Paris, by way of Tours, would be accepted at 5d. a word.

Unfortunately most of the pigeons were untrained and only about a quarter of the total number of messages sent reached Paris. The distance from Tours to Paris is about 125 miles.

The photographs above show, on the left, the balloons being built at the Gare d'Orleans; right, the enlargement of the letters at Paris. Adjoining is the notice issued by the G.P.O.



## OPEN LETTERS for PARIS.

## Transmission of by Carrier Pigeons.

THE Director-General of the French Post Office has informed this Department that a special Despatch, by means of Carrier Pigeons, of correspondence addressed to Paris has been established at Tours, and that such Despatch may be made use of for brief letters, or notes, originating in the United Kingdom, and forwarded by post to Tours

Persons desirous of availing themselves of this mode of transmission must observe the following conditions:—

Every letter must be posted open, that is, without any cover or envelope, and without any seal, and it must be registered

No letter must consist of more than twenty words, including the address and the signature of the sender but the name of the addressee, the place of his abode, and the name of the sender—although composed of more than one word—will each be counted as one word only

No figures must be used, the number of the house of the addressee must be given in words

Combined words joined together by hyphens or apostrophes will be counted according to the number of words making up the combined word

The letters must be written entirely in French, in clear, intelligible language They must relate solely to private affairs, and no political allusion or reference to the War will be permitted.

The charge for these letters is five-pence for every word, and this charge must be prepaid, in addition to the postage of sixpence for a single registered letter addressed to France

The Director-General of the French Post Office, in notifying this arrangement, has stated that his office cannot guarantee the safe delivery of this correspondence, and will not be in any way responsible for it.

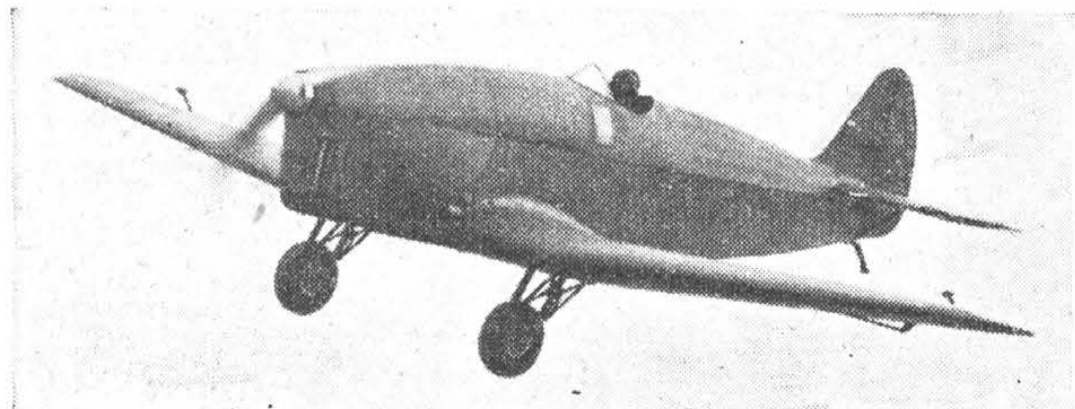
By Command of the Postmaster-General.

GENERAL POST OFFICE.

16th November, 1870.

## SPORTING MEMORIES—XCIII

**T**HE Comper Streak was designed for the 1934 Coupe Deutsch de la Meurthe, a French air race open to single-seat aeroplanes of all nationalities with a motor having a total



The Comper Streak—1934.

cylinder capacity of not more than 8 litres. The Streak was designed to get the highest practicable speed with a 145 h.p. special D.H. Gipsy Major motor, the only British motor within the 8-litre limit that the Comper Company considered suitable.

The Streak was built largely of standard Comper Swift parts, but, unlike the Swift, the Streak was a low-wing monoplane and had a retractable undercarriage. It was flown for the first time on April 12, 1934, and flew in the Coupe Deutsch on May 27 at Etampes. It averaged 160 m.p.h. in the contest, flown by Flt. Lt. Nicholas Comper, but had to fly most of the way with the undercarriage down.

In the 1934 King's Cup Race the Streak was handicapped at 180 m.p.h., and though it came fourth in its heat with an average speed of 175 m.p.h., it was forced to land at Wittering in the semi-final. Only one Streak was built; soon afterwards Comper Aircraft Ltd. was taken over by the Heston Aircraft Co. Ltd.

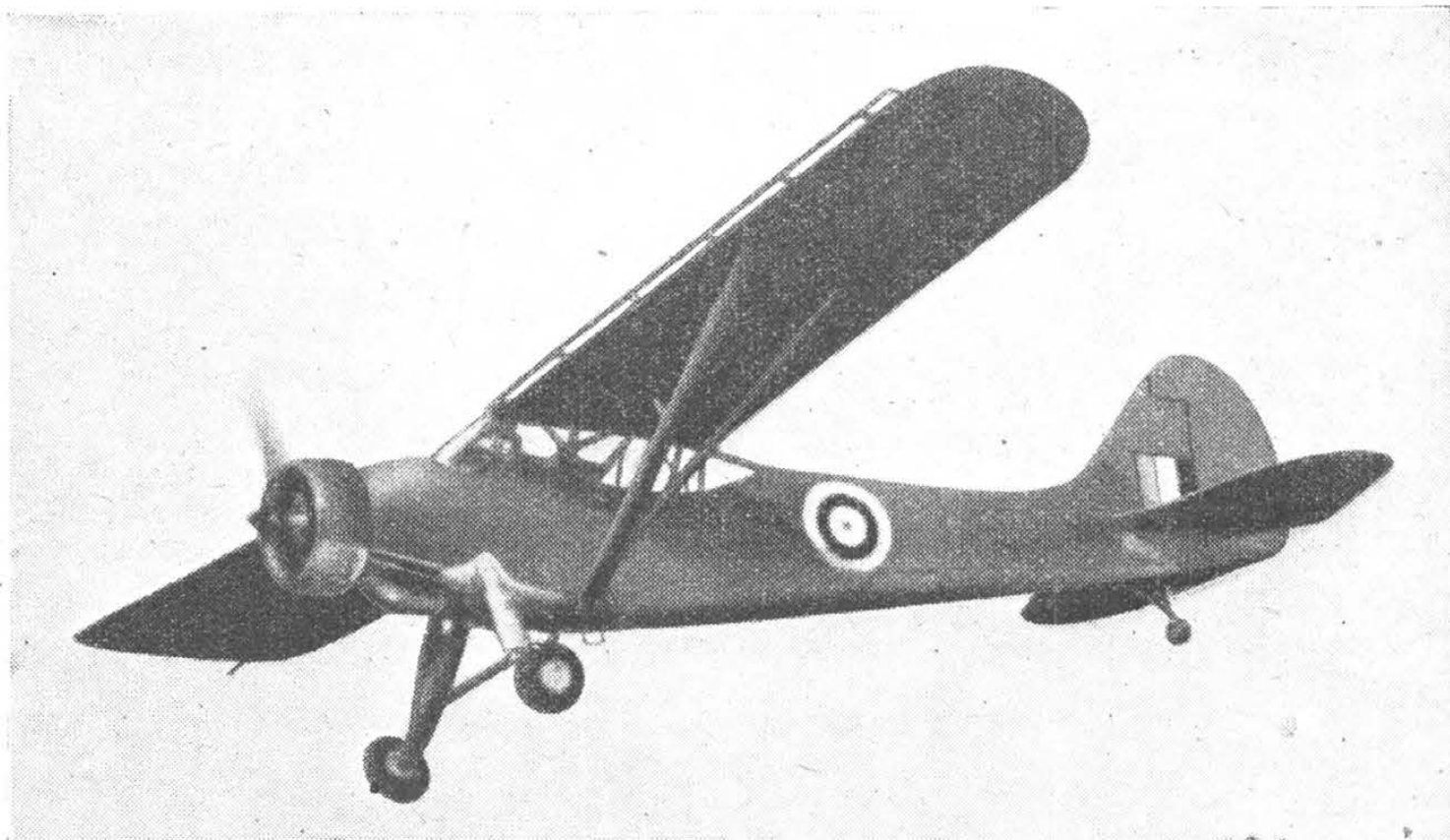
## Repairing the Tools

A MAINTENANCE AND REPAIR DEPOT exclusively handling American aeronautical products has been successfully operating in this country for some time. British purchases of aeroplanes and aero-motors from the U.S.A. set an urgent war problem. The overhauling of these comparatively strange types disclosed differences of practice between the two countries and, to cope with them, a separate servicing unit was made necessary.

The organisation set up has grown from a nucleus of a few hangars and a handful of expert technicians into a large enterprise capable of handling any American type of aero-motor or airframe. In view of the divergence of engineering standards this is a notable achievement. These standards vary from major principles down to thread forms, drill sizes, plating thicknesses and rivet shapes.

Much thought has been devoted in this special Maintenance Unit to the overcoming of the difficulties set by these variations. Wherever possible, English standard parts and accessories have been introduced in the rebuilding of American airframes. The chemical content and mechanical properties of aeronautical materials present more differences, and here again much careful substitution has been done.

The servicing of American types as well as their repair presented problems. As in air line operation 90 per cent. of the work is said to be done on the ground, so in operations of War an efficient Air Force must have a complete maintenance and repair organisation backing up the routine inspections and regular servicing done in the squadrons. Aeroplanes and motors from the U.S.A. present few difficulties in the field, except perhaps in small details such as the scarcity



SLOW FLYING.—A Vultee-Stinson Vigilant (300 h.p. Lycoming R680-9 motor) on test after being overhauled. In the U.S. Army it is known as the O-49.

of servicing panels on the Boston or the complications of the "all-electric" Fortress mechanisms. When the major overhaul period is approached the problems of varying standards appear.

The tricycle undercarriage of the Boston was a novelty over here. Designed for use on the concrete runways of well-planned civil airports, this advanced type of landing gear was found to be rather tricky on our sometimes muddy Service aerodromes. The value of the Maintenance Depot was proved in this instance, for after experiment the steering on the front wheel was dispensed with and an anti-shimmy jack incorporated in its hydraulic system, thus making the Boston more suitable for conditions on our aerodromes.

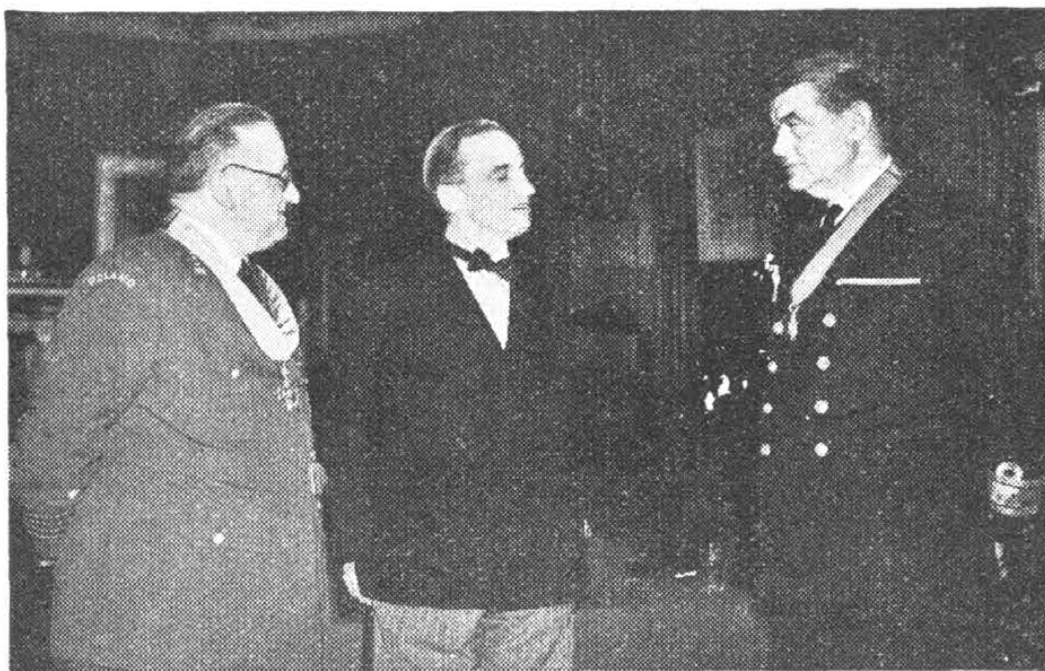
Sparkling plugs are tested in the U.S.A. at the high pressure of 180 lb. per sq. in., as against our figure of 120 lb. per sq. in. After some failures of substitute plugs under this load the Maintenance Unit eventually arrived at a compromise



ALLISON IN-LINE.—Allison V-1710-C15 motors ready for the test bed after overhaul at a Maintenance and Repair Depot somewhere in England. On each motor may be seen its own log-book.

## FORTHCOMING EVENTS

- May 15.—**Bon-Accord**.—R.O.C.C. Branch 176 (Bon-Accord).—Third Class Test.—At Woolmanhill.—17.00 hrs.
- May 15.—**Kentish Town**.—S.C. No. 16 (St. Pancras).—Social Evening and General Discussion.—At the North Western Polytechnic, Prince of Wales Road.—18.00 hrs.
- May 15.—**Glasgow**.—S.C. No. 35 (Glasgow and West of Scotland R.S.A.).—Annual Gen. Meeting.—Cooper's Smokeroom.—19.30 hrs.
- May 15.—**Hoddesdon**.—S.C. No. 128 (Hoddesdon).—Annual General Meeting.—In the C'ock House.—19.30 hrs.
- May 15.—**Richmond**.—S.C. No. 184 (Richmond).—Meeting in Darrel Rd. School, Darrel Rd.—19.30 hrs.
- May 15.—**Preston**.—S.C. No. 249 (Preston and District).—Instruction. Slides.—Discussion.—Insp. Pratt.—Cent. Police Stn.—19.30 hrs.
- May 17.—**Ightham**.—R.O.C.C. Branch 28 (Ightham).—Talk on Search-light Co-operation.—Recognition Films and Third Class Test (blacked-in).—At Ightham Village Hall.—10.00 hrs.
- May 17.—**Cullompton**.—R.O.C.C. Branch 29 (Wellesley).—Third Class and Intermediate Tests.—Competition and possibly instructive film.—At the Regal Cinema.—14.30 hrs.
- May 17.—**Newbury**.—R.O.C.C. Branch 42 (Newbury).—Third Class Test.—O.I.C.I.'s Half-hour (No. 2).—Talk by Mr. H. C. Wilkinson on "The Miles Aircraft."—Interpost Challenge Competition, Round 7.—At the Grammar School.—14.15 hrs.
- May 17.—**Louth**.—R.O.C.C. Branch 78 (E. Lincs).—Third Class Test.—Aircraft Recognition Bee.—At Louth-in-the-Monk's, Dyke School.—14.30 hrs.
- May 17.—**Exeter**.—R.O.C.C. Branch 103 (Exeter and District).—Intermediate Test.—Instructional talk by Competitions Officer.—Prize Competition.—At the University College, Gandy Street, Exeter.—14.30 hrs.
- May 17.—**Watford**.—S.C. No. 118 (Watford).—Instructional Illustrated Lecture by B. D. Phillips.—At Watford Public Library.—10.30 hrs.
- May 17.—**Oxford**.—S.C. No. 162 (Oxford).—A.G.M.—Test and Films.—At City Police Stn.—18.30 hrs.
- May 19.—**Newport**.—S.C. No. 40 (Newport).—Meeting at Newport Corn Exchange.—19.30 hrs.
- May 19.—**Guildford**.—S.C. No. 150 (Guildford).—Annual General Meeting.—At Dennis Canteen.—19.30 hrs.
- May 19.—**Leyland**.—R.S.C. No. 255 (Leyland).—Meeting in Leyland Motors Social and Athletic Club.—19.30 hrs.
- May 20.—**Blackpool**.—S.C. No. 2 (Blackpool).—Meeting in Talbot Rd. Police Stn.—19.15 hrs.
- May 20.—**Newcastle**.—S.C. No. 272 (Tyneside).—Annual General Meeting.—At the Crow's Nest Hotel, Haymarket.—19.00 hrs.
- May 21.—**Dudley**.—S.C. No. 113 (Dudley) Annual General Meeting.—At Priory Inn, New St.—19.30 hrs.
- May 21.—**Southall**.—S.C. No. 141 (Southall).—Annual General Meeting.—Competition Bee.—At Southall Technical College.—18.30 hrs.
- May 22.—**Streatham**.—S.C. No. 13 (South London).—Talk on the American Air Force, Part 1.—Third Class Test.—Photographic Recognition.—At 2-4, Leigham Court Rd.—18.30 hrs.
- May 22.—**Watford**.—S.C. No. 118 (Watford).—First Class Test.—At Watford Public Library.—19.00 hrs. Visitors welcome.



FIGHTING FOR FREEDOM.—Sir Archibald Sinclair, Secretary of State for Air, with (left) Group Capt. E. J. Kwiecinski, C.B.E., Polish Air Attaché, and Rear-Admiral Riiser-Larsen, C.B., after they had received their decorations at the Air Ministry.

## New Appointment

MR. N. F. ROSE, M.B.E., the Midland Area representative of Cellon Ltd., has been appointed a member of the Board of the Company.

## New Patents

## APPLICATIONS ACCEPTED

- 544,543.—Air-Equipment.—Operating mechanisms of retractable members on aircraft.—Aug. 12, 1938.
- 544,442.—H. Dreyfus and D. Finlayson.—Textile fabrics and articles embodying them for aircraft.—Sept. 7, 1940.
- 544,493.—Dowty Equipment Ltd., and D. Mackenzie.—Fluid-actuated control systems.—Oct. 15, 1940.
- 544,571.—J. Martin and Martin-Baker Aircraft Co. Ltd.—Means for jettisoning hoods or tops of aeroplane cabins or cockpits.—Mar. 20, 1941.

Opposition period expires June 29, 1942.  
Printed specifications available May 14, 1942.

## PERSONAL NOTICES

## BIRTHS

- Andras**.—On May 3, at Toronto, to Elizabeth, wife of Flg. Off. K. B. Andras, R.C.A.F.—a son.
- Armour**.—On Apr. 16, at Nairobi, to Adelaide, wife of Flt. Lt. R. C. Armour—a daughter.
- Arnott**.—On May 1, at Woking, to Barbara (née Edwards), wife of Flg. Off. James Arnott, M.B., B.Ch., Middle East Forces—a daughter.
- Brown**.—On May 1, at Northampton, to Betty (née Bence), wife of Flg. Off. W. G. T. Brown, R.A.F.V.R.—a son.
- Cartledge**.—On Apr. 29, at Fulmer, to Peggy (née Oakley), wife of Plt. Off. Marcus Cartledge, R.A.F.V.R.—a son.
- Coleman**.—On Apr. 30, at Fulmer, to Madeline (née Weston), wife of Flt. Lt. A. W. Coleman—a daughter.
- Copley**.—On May 5, at Skinburness, Silloth, to Patricia, wife of Flg. Off. N. E. Copley, R.A.F.V.R.—a boy.
- Daish**.—On Apr. 30, at Banbury, to Rene, wife of Sqdn. Ldr. H. C. Daish, R.A.F.—a son.
- Ely**.—On May 2, at Fulmer, to Hil'da (née Rowe), wife of Plt. Off. G. W. Ely, R.A.F.V.R.—a daughter.
- Essex**.—On Apr. 28, at Harrogate, to Philippa (née Tippet), wife of Act. Flt. Lt. E. A. Essex, R.A.F.V.R.—a daughter.
- Francis**.—On Apr. 29, at Sutton, to Evelyn (née Manning), wife of Plt. Off. G. J. R. Francis, R.A.F.V.R.—a son.
- Franklin**.—On Apr. 29, at Lower Slaughter, Glos., to Betty (née Washbourn), wife of Plt. Off. W. H. Franklin, R.A.F.V.R.—a daughter.
- Fraser**.—On May 2, at Barrow-in-Furness, to Ina, wife of Flt. Lt. Gilbert Fraser, M.B., Ch.B., R.A.F.V.R.—a daughter.
- Hathaway**.—On May 2, at Shrewsbury, to Cynthia (née de Chateaux), wife of Flt. Lt. S. Hathaway, R.A.F.V.R.—a son.
- Heath**.—On May 2, at Beckenham, to Joy (née Anderson), wife of Sqdn. Ldr. Barrie Heath, D.F.C., A.A.F.—a son.
- Heyworth**.—On May 5, at Papplewick, Notts, to Valerie, wife of Wng. Cmdr. J. H. Heyworth, R.A.F.O.—a daughter.
- Houghton**.—On Apr. 14, at Nairn, to Beatrix, wife of Flt. Lt. J. A. C. Houghton, R.A.F.V.R.—a son.
- Hughesdon**.—On Apr. 30, at Crayford, to Mona (née Quirk), wife of Plt. Off. Eric Hughesdon—a son.
- Lawrence**.—On Apr. 29, to Phyllis (née Lloyd Jones), wife of Plt. Off. A. W. Lawrence, R.A.F.V.R.—a son.
- Mackay**.—On Apr. 22, in London, to Joan (née Whyte), wife of John Mackay, R.A.F.V.R.—a daughter.
- Maitland**.—On Apr. 28, at Lichfield, to Barbara (née Fleming), wife of Grp. Capt. C. E. Maitland, D.F.C., A.F.C., R.A.F.—a daughter.
- Marett Tims**.—On May 1, at Muddiford, N. Devon, to Peggy (née Willis), wife of Plt. Off. D. W. Marett Tims, R.A.F.V.R.—a daughter.
- Maxwell-Hudson**.—On Apr. 30, at Farnham, to Rachel (née Pearson), wife of Flt. Lt. T. Maxwell-Hudson, R.A.F.—a daughter.
- Merer**.—On Apr. 28, at Beaconsfield, to Cecily, wife of Grp. Capt. J. W. F. Merer, R.A.F.—a daughter.

- Peel**.—On Apr. 30, at Brecon, to "Pix" (née Percy), wife of Flg. Off. J. S. Peel, R.A.F.V.R.—a daughter.
- Roncoroni**.—On Apr. 30, at Hampden, to Hilary, wife of Wng. Cmdr. J. A. Roncoroni, R.A.F.—a daughter.
- Rumsey**.—On May 1, at York, to Eileen (née Mulholland), wife of Flt. Lt. Rex Rumsey—a daughter.
- Saunders**.—On Apr. 29, at Wornit, Scotland, to Patricia (née Spender), wife of Plt. Off. Saunders, R.A.F.—a daughter.
- Sentance**.—On May 3, to Elizabeth (née Taylor), wife of Sqdn. Ldr. P. B. Sentance, R.A.F.—a daughter.
- Shurrock**.—On May 6, at Wimbledon, to Jean (née Curtis), wife of Plt. Off. K. L. Shurrock, R.A.F.—a daughter.
- Stampton**.—On May 2, at Brighton, to Cynthia (née Rael), wife of Flg. Off. D. B. Stampton, R.A.F.V.R.—a son.
- Stratton**.—On May 1, at Salisbury, to Pearl (née Juffkins), wife of Sqdn. Ldr. H. A. C. Stratton, A.F.C., R.A.F.O.—a daughter.
- Townsend**.—On Apr. 27, at Edinburgh, to Rosemary, wife of Wng. Cmdr. P. W. Townsend, D.S.O., D.F.C., R.A.F.—a son.
- Wethered**.—On May 2, to Elizabeth Esther, wife of Sqdn. Ldr. C. H. Wethered, R.A.F.V.R.—a son.
- Whitwell**.—On May 4, at Wadebridge, to Helen, wife of Flt. Lt. J. Whitwell—a daughter.
- Wildridge**.—On May 4, at Boughton, Peebleshire, to Lila, wife of Gilbert Wildridge, R.A.F.V.R.—a daughter.
- Wilson**.—On May 1, at Gosforth, to Hilary (née Angus), wife of Act. Flt. Lt. S. J. Wilson, R.A.F.V.R.—a daughter.
- Woodroffe**.—On May 1, at Sharpthorne, Sussex, to Enid (née Barwell), wife of Flg. Off. C. M. C. Woodroffe, R.A.F.V.R.—a daughter.

## FORTHCOMING MARRIAGES

- Archer-Wilson**.—The engagement is announced between Flg. Off. R. B. Archer, D.F.C., R.A.A.F., only son of Mr. R. B. Archer and the late Mrs. Archer, of Sydney, and April Eve Wilson, W.A.A.F., only daughter of Cmdr. S. D. Wilson, R.N., and Mrs. Wilson, of Parkstone, Dorset (now at Glasgow).
- Butler-Cruickshank**.—The engagement is announced, and the marriage will shortly take place, between Flg. Off. J. D. Butler, R.C.A.F., elder son of Mrs. E. M. Butler, of Vancouver Island, B.C., and S/O Daphne Cruickshank (née Garrod), W.A.A.F., second daughter of Mr. Ralph Garrod, of Hampstead.
- Colenbrander-Bone**.—The engagement is announced, and the marriage will take place on May 23, at Horsham, of Flt. Lt. J. Colenbrander, R.A.F.V.R., only son of Col. J. Colenbrander, C.B., K.F.S., and Mrs. J. Colenbrander, and Diana, only daughter of Capt. J. H. Bone, 7th Hussars, and Mrs. J. H. Bone, of Horsham.
- Gillon-Lapraik**.—The engagement is announced between Lt. M. G. Gillon, The Intelligence Corps, only son of the late Mr. E. C. Gillon and Mrs. Gillon, of Stansted, and A/S/O Fay Hilary Lapraik, W.A.A.F., only child of Sqdn. Ldr. D. F. Lapraik and the late Mrs. Lapraik, of Abingdon.

## MARRIAGES

- Brittan-Burn**.—On May 6, at Church Stretton, Plt. Off. John Brittan, R.C.A.F., younger son of Mr. A. E. Brittan, of Hamilton, Ontario, to Miss D. V. Burn, P.M.R.A.F.N.S. (R), younger daughter of Mr. E. M. Burn, V.D., J.P., of Church Stretton, Shropshire.
- Crampton-Thomson**.—On May 3, at Oxhey, Sgt. Plt. Paul Crampton, R.A.F.V.R., only son of Dr. and Mrs. Harold Crampton, of Burgess Hill Sussex, to Anne Patricia, younger daughter of the late H. W. Thomson, C.M.G., Malayan Civil Service, and Mrs. Thomson, of Watford.
- Dickinson-Ingham**.—On Apr. 18, at Caernarvon, Sgt. Pilot J. R. Dickinson, R.A.F.V.R., second son of Mr. and Mrs. A. R. Dickinson, of Erdington, Birmingham, to Elizabeth Therese, only child of Mr. and Mrs. T. H. Ingham, of Caernarvon, N. Wales.
- Fox-Ward**.—On May 2, at Hoyle, Lt. Derek Fox, R.A., son of Major and Mrs. H. Fox, of Hawkshead, Ambleside, to Sheila, W.A.A.F., elder daughter of Mr. and Mrs. Leslie Ward, of Hoyle.
- Huril-Newton**.—On May 1, at York, Capt. J. B. Huril, R.A.M.C., son of Mr. and Mrs. Mark Huril, of Cambuslang, to Flt. Off. Noreen McKenzie Newton, W.A.A.F., daughter of Mr. and Mrs. J. McK. Newton, of Sale.
- Menkes-Lightfoot**.—On Apr. 25, at Ulverston, Plt. Off. E. G. L. Menkes, R.A.F.V.R., to Betty, only daughter of Mr. and Mrs. J. S. Lightfoot, of Richmond.
- Moore-Whitehouse**.—On May 2, at Penn, T. A. W. Moore, R.A.F., eldest son of the late Dr. S. B. W. Moore and Mrs. Moore, to Margaret, only daughter of Mr. and Mrs. Edgar Whitehouse, of Penn, Wolverhampton.
- Oats-Cooper**.—On Apr. 30, at Crockham Hill, Kent, Sqdn. Ldr. V. R. Oats, of Porthledden, St. Just, to Elizabeth Jean Cooper, of Murraysfield, Berkhamsted.
- Rees-Pledger**.—On Apr. 30, in London, Flg. Off. G. F. Rees, R.A.F.V.R., of Carmarthen, to Miss M. K. Pledger, of Dover.
- Shirehampton-Parry**.—On Apr. 29, at Sidmouth, the Rev. W. J. P. Shirehampton, M.A., C.F., R.A.F.V.R., son of the late W. B. Shirehampton and of Mrs. Shirehampton, of Barnet and Walton-on-the-Naze, to Catherine Mary Ruth, daughter of the late T. W. Parry, and of Mrs. Parry, of Ashbrook, Sidmouth.
- Taylor-Rees**.—On May 2, at Beckenham, Sub-Lt. H. G. Taylor, F.A.A., to Joan, youngest daughter of Mr. and Mrs. Rees, of Forest Hill, S.E.
- Walker-Morley**.—On Apr. 18, at Bishop's Stortford, Flt. Lt. P. L. T. Walker, R.A.F.V.R., elder son of Mr. P. F. Walker and the late Mrs. Walker, of St. Albans, to Violet, eldest daughter of Mr. and Mrs. H. P. Morley, of Bishop's Stortford.
- Wallis-Stapley**.—On Apr. 29, at Brighton, Flt. Lt. K. H. Wallis, R.A.F.V.R., son of Mr. and Mrs. H. S. Wallis, of Ely, to A/S/O Peggy Mary Stapley, W.A.A.F., daughter of Mr. and Mrs. Alan Stapley, of Brighton.
- Wells-Ainsley**.—On May 2, at Great Baddow, Essex, E. M. Wells, B.Sc., R.A.F.V.R., to Helen Maud Ainsley.

## CORRESPONDENCE

## P.T. and the A.T.C. and Others

YOUR last sentence under the heading "Physical Fitness Tests for the A.T.C." (THE AEROPLANE, May 8, p. 517) seems to contain a subcutaneous sneer, for you say:—"This suggests . . . that the standards are to be made to conform to the boys rather than the boys to the standards."

Surely that is as should be. Nothing is more harmful to the adolescent than physical over-strain. The physique of youth is enviably resilient, but it has its elastic limit, like any organic or inorganic material, and the P.T. experts of the three Services will do well to discover that limit and keep their tests well inside it. Passing the elastic limit may cause catastrophic changes in the metabolism of the individual.

The pity is that P.T. experts of the Women's Services did not recognise that fact when they began work. Girls from the sheltered homes of the so-called working classes, who have never left their mothers' apron-strings except to stand or sit around in shops or factories or cinemas or promenade in cheap high-heeled foreign shoes, are marched off their feet in good solid flat-heeled leather shoes—which are no worry to the athletic golfing girls of the so-called "idle" classes—and so are subjected to prolonged agony. Parades and drill become a purgatory, whereas if taken gradually they would be a joy.

Eventually, those who survive are trained "up to Commando standard"—as a W.A.A.F. friend of mine put it. And then they are sent to stations where, in the W.A.A.F. at any rate, they sit around again, or scrub floors, or stand about cooking.

They get no more P.T. or drill to keep them fit. And as a rule they are grossly overfed. A sample breakfast is tea or coffee, bacon and eggs (or liver or fish), unlimited bread and real butter and marmalade or jam, and unlimited milk. That for a girl who has been accustomed to a cup of tea and a slice of bread and marmite is overdoing it.

Other meals are in proportion. Sometimes they are spoiled by bad cooking, but the food is good and plentiful, and always over-fattening. Which is why one sees so many fat A.T.S.s and wobbling W.A.A.F.s about the country, while working women, of all social strata, have difficulty in getting their meagre rations. Waste in the Services is often internal, and, one might say, ruins waists in the Services.

Moreover, there is a lack of proper catering for girls on night duty—cypherines, operators in control and plotting and filter rooms, and so forth—who stodge on sandwiches and become revoltingly bloated.

I plead for better supervision of and provision for the mothers of the next generation—if they consent after the war to produce such a thing.

C. G. GREY.

[No sneer, subcutaneous or otherwise, was intended in the paragraph about the A.T.C. physical tests. School sports have been held for a good many years, and we felt that there should have been sufficient data on which the experts could have framed tests that were neither too hard nor too easy. But we are glad that the paragraph gave Mr. Grey the chance to raise another, and far weightier, matter.—ED.]

## More on Hydromes

I SEE that Mr. C. G. Grey has returned to his enthusiastic but perhaps not too well-founded advocacy of the Seadrome. It is easy to imagine the wonderful things which may be achieved by devices that have never been tried, but can we afford to spend immense sums of time and money on such purely experimental objects in war time, especially when so large a body of opinion is against them?

Besides this, has it not occurred to Mr. Grey that if Seadromes in great numbers were used, whether successfully or not, in this war, some other enthusiast would probably insist upon their being used *after the war* as landing stages for short-range commercial aeroplanes? Thus the millions that have been expended by our leading aircraft producers and those of the United States in developing long-range aeroplanes would to some extent be wasted, because obviously it would be difficult to find the subsidies that long-distance aeroplanes require when there was the alternative of achieving the same distances, even if at a slower speed, by the use of Seadromes. Would not this be turning backwards the wheels of progress?

N. PAYNE.

[This sounds rather like vested interests again. Our aim should be towards efficiency whether it means concentrating on long-range or short-range aircraft—or both.—ED.]

The fact that goods made of raw materials in short supply because of war conditions are advertised in this journal should not be taken as an indication that they are necessarily available for export.

## Special Instruction for the R.A.F.

THERE have been some interesting letters and articles published in THE AEROPLANE recently which have dealt with two things of great interest to the Fitters and Riggers of the R.A.F., i.e., Training and Trade badges. In none of the articles and letters has the "bill" been filled, according to my ideas.

Take the important point of training as regards Riggers (to give them their popular name). This to my mind, for years, has suffered from the defect that practically all the instructors are R.A.F. and ex-R.A.F. of the same trade as those for which they are instructing.

It should be obvious for the purpose of training of Flight Mechanics and Fitters II that the instructors should be skilled in each trade, i.e., detail bench fitters should instruct in the "basic" and "repair" phases; hydraulics should be taught by specialists. Skilled erectors from factories should teach assembly and truing, and the rest of the instruction should be left to R.A.F. instructors.

This should obviate "Fair Note Books" full of those items of non-essential "Gen" which the R.A.F. delight in and which are only given because the instructors are not sufficiently skilled to give real instruction and so have to confess failure by dictating notes which are culled from R.A.F. publications.

The Trade Test Boards are tarred with the same brush—they are more concerned with the trainee knowing the Eat-Good-Jam-Leave-None formula for the identification of bolts, than they are that the trainee can use a wheelbrace and drill a bolt correctly for a split pin.

In "basic," the trainee still carries on with the old-fashioned practice of filing male and female fits, etc., and any fitter know that after years of practical work this is a very difficult job. Why not spend the time in basic on squaring up sheet metal, using tin snips, drilling for split pins, making odd-shaped spanners, "drifts," etc.?

The trainee has to learn by heart of what particular steel his files, scribing blocks, surface plates, etc., are made—and this in a War-time course! Fitter IIs have to make up a complicated box-spar fitting which involves working out a series of bend-allowances by methods which a detail fitter would laugh at.

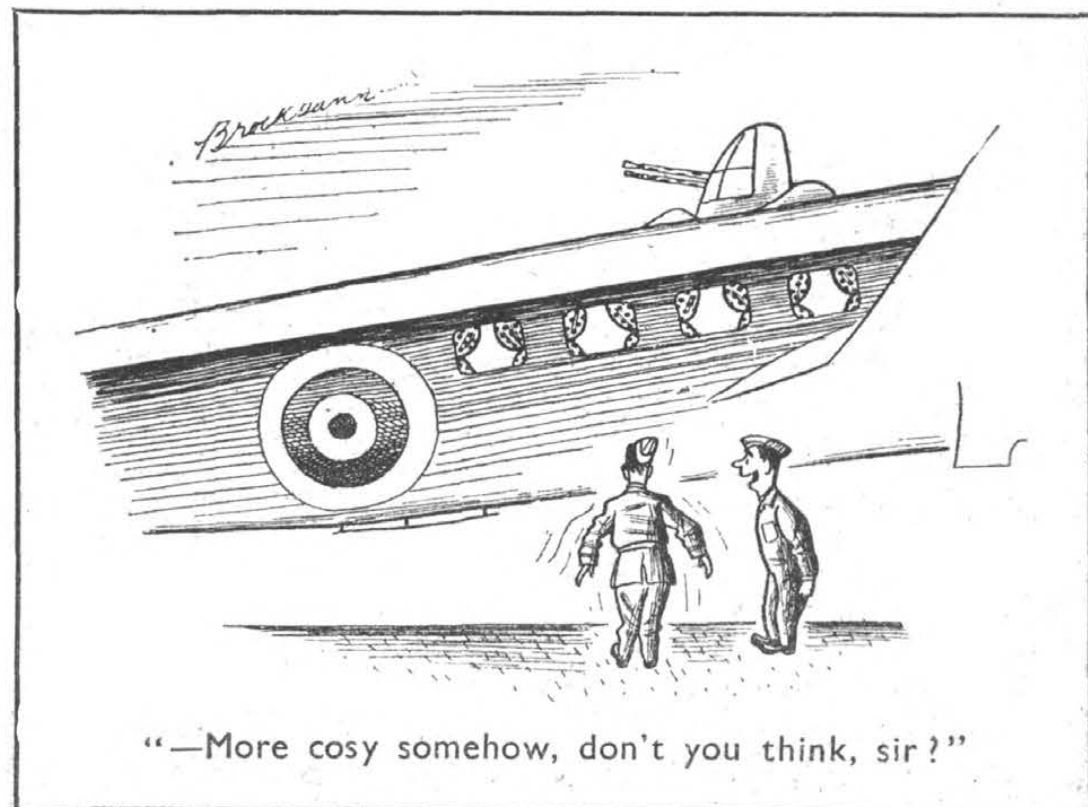
Metallurgy is another subject which could be cut out—it has never been of any practical use—even in peace time.

On the "Aerodrome" phases, trainees fill up their notebooks with "Gen" which, if absorbed, would educate them to the standard of potential F/Sgts., Engineering Officers, Duty Pilots and Aerodrome Control Officers.

I would like to suggest that a drastic way of altering all this would be in the first place for Training Command to get a handful of experienced tradesmen from aircraft works to visit training schools and with a free hand wipe out all "unpractical" instruction and then "listen-in" to Boards and cut out all "clever" questions which, in the correct answering, favour the ex-clerk type rather than the practical man. Also, get the advice of F/Sgts. on operational Units and not rely on out-of-date "Gen" from their comrades who have stagnated in Training Command for years.

Make the R.A.F. instructors into a sort of Technical Instruction Corps which will drill trainees, do guards and all the other duties of a station and make C.T.O.s concerned only with instruction and not with administrative details.

LEXICON.

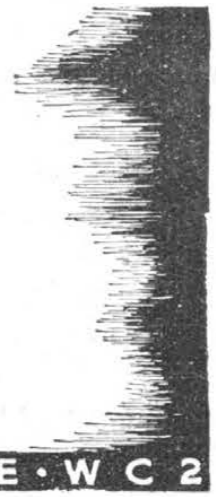




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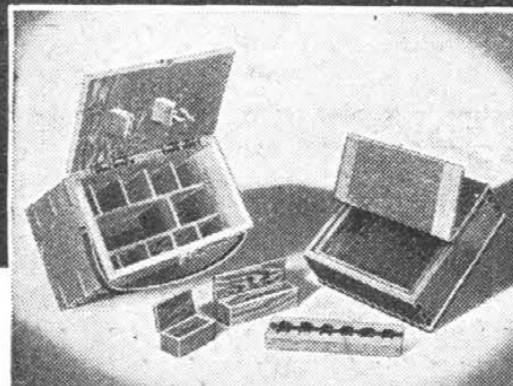
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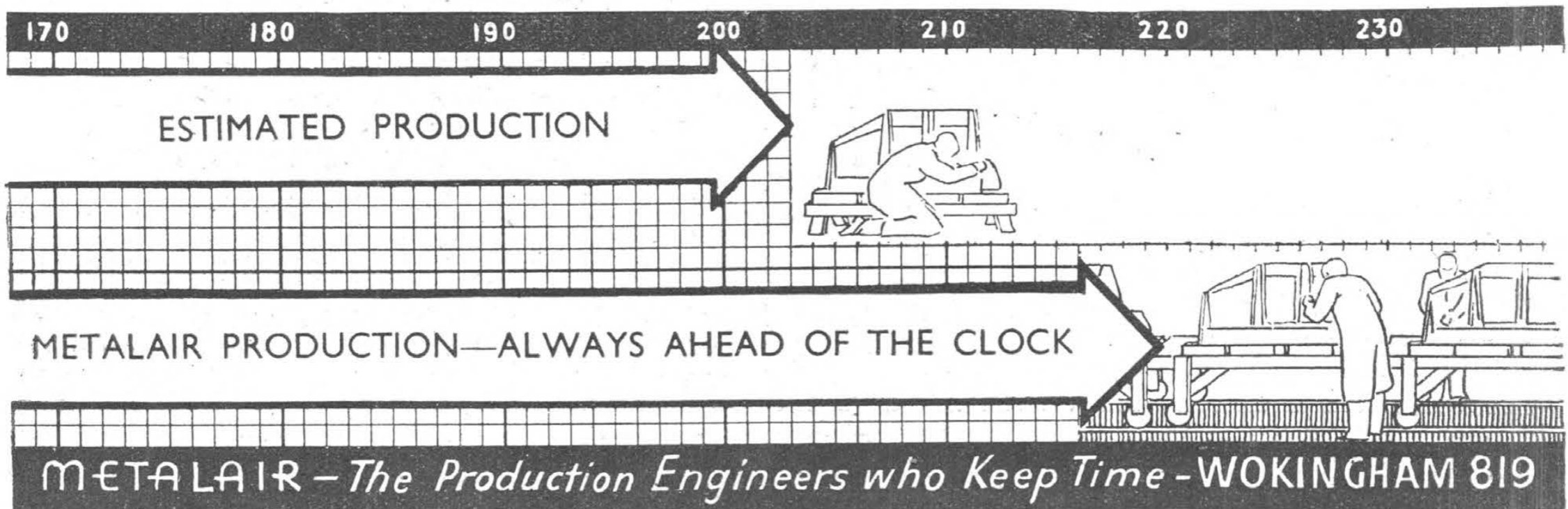


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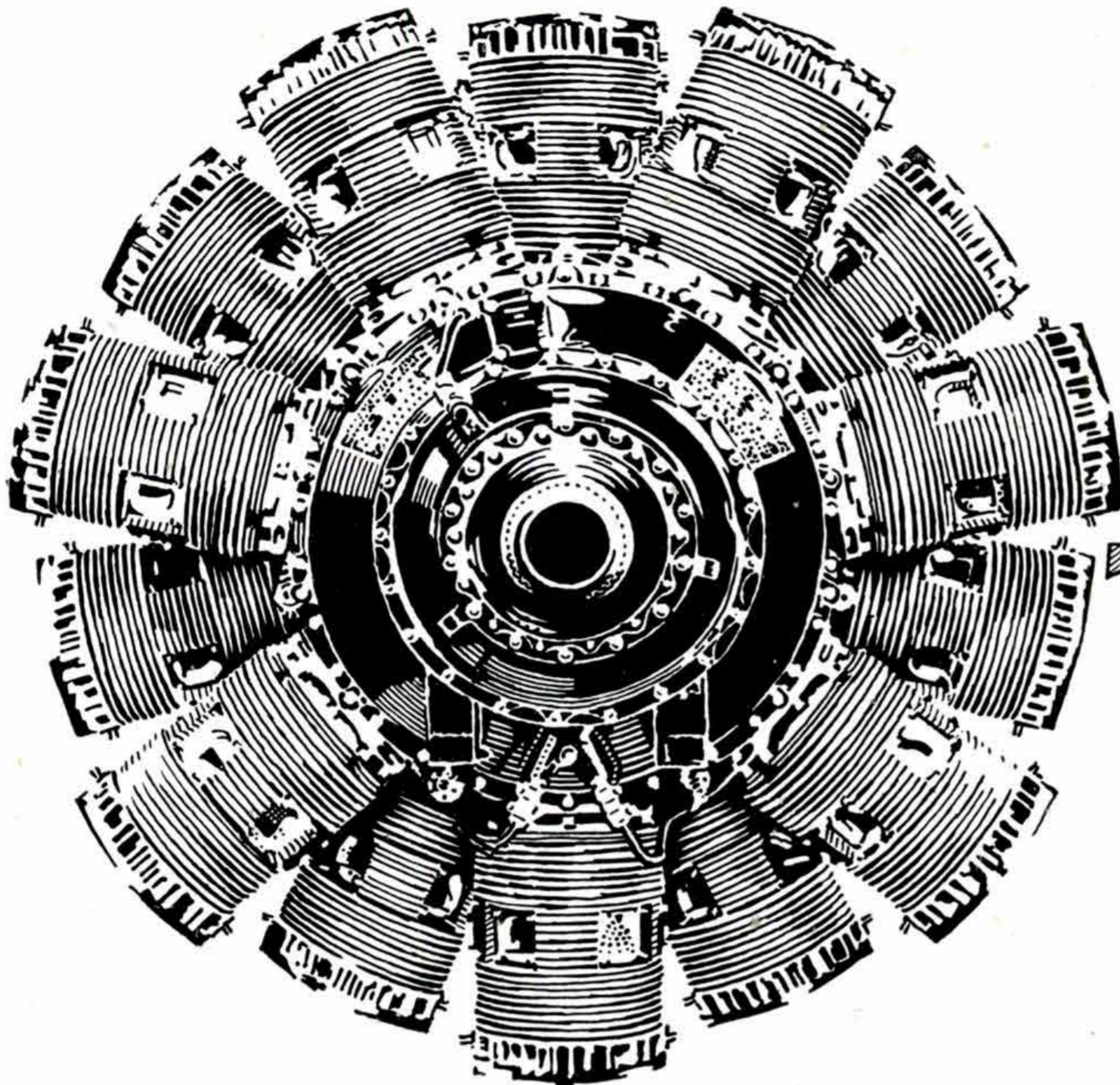
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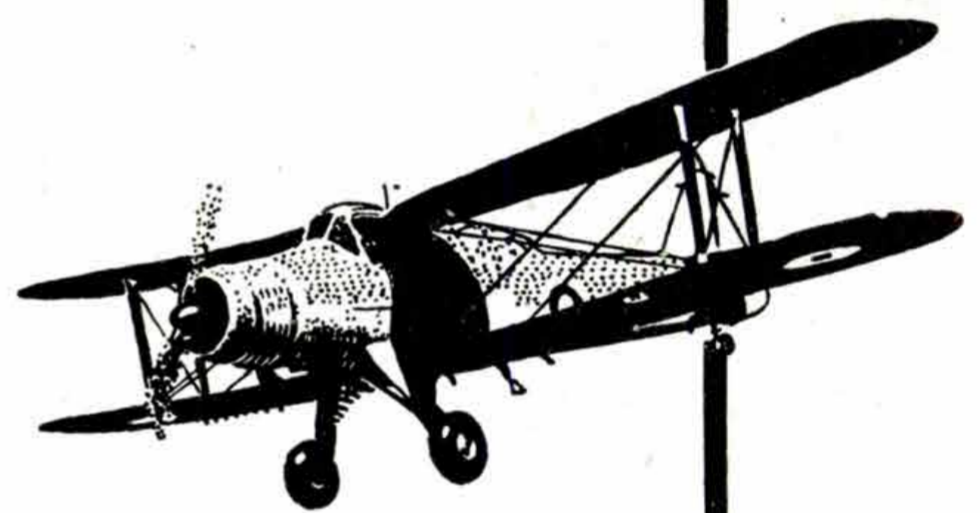


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