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JULY 17, 1942.

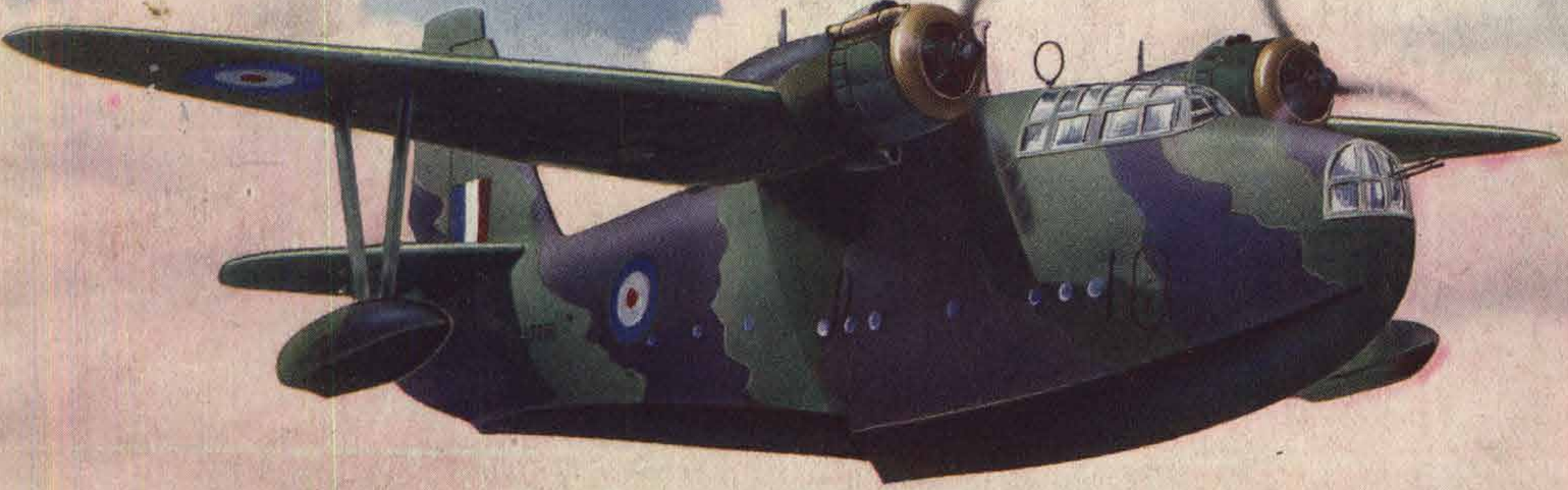
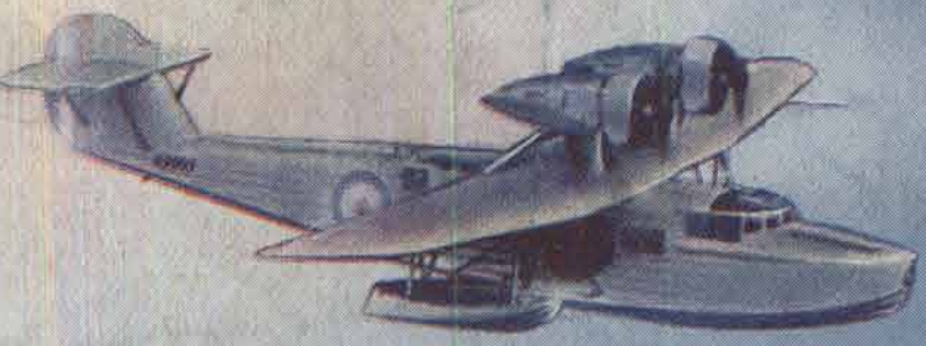
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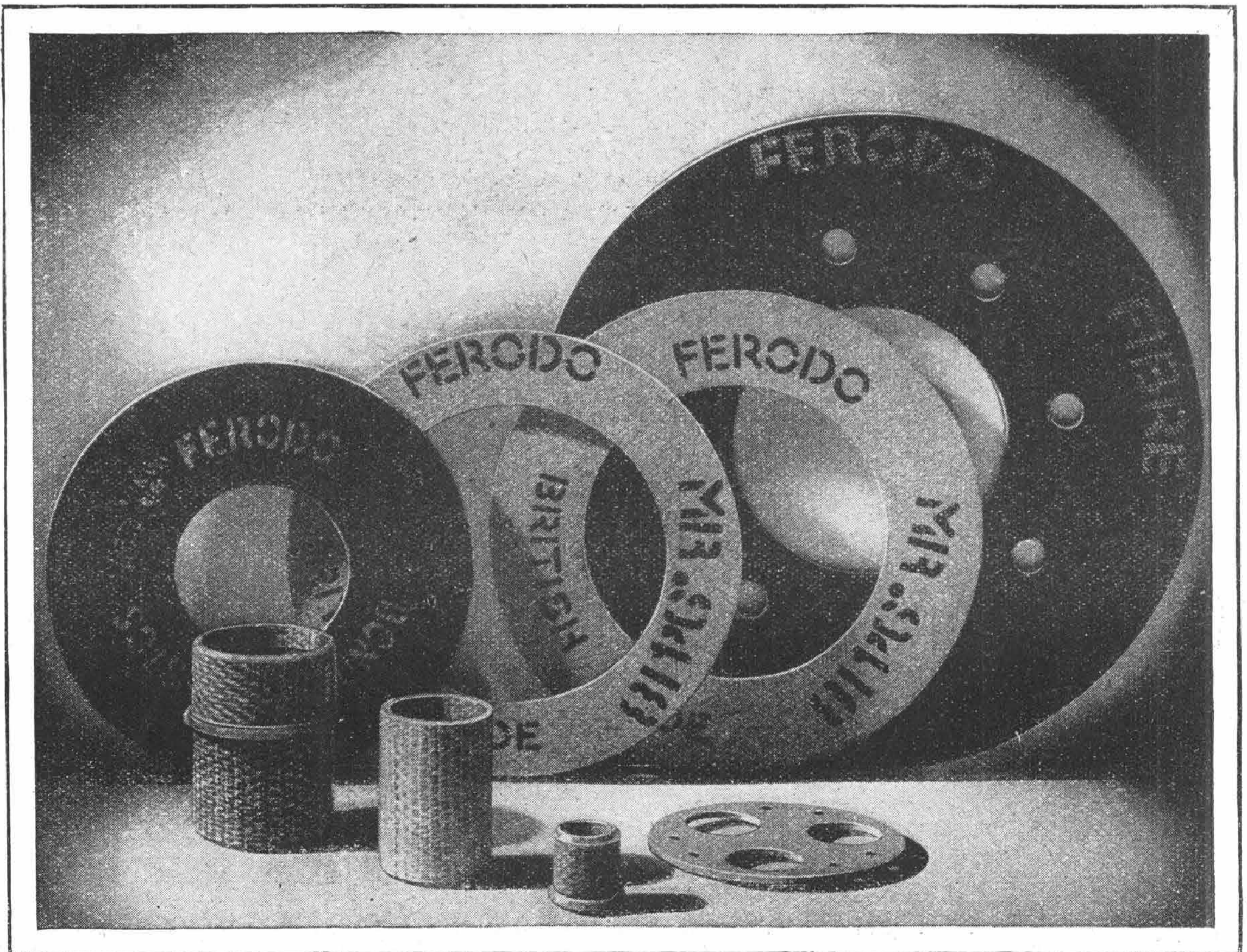
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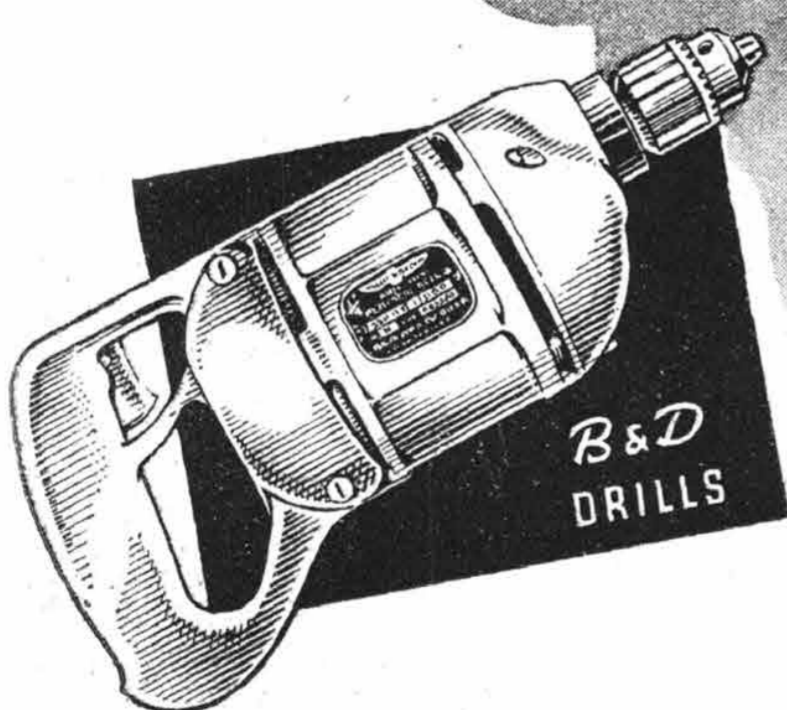
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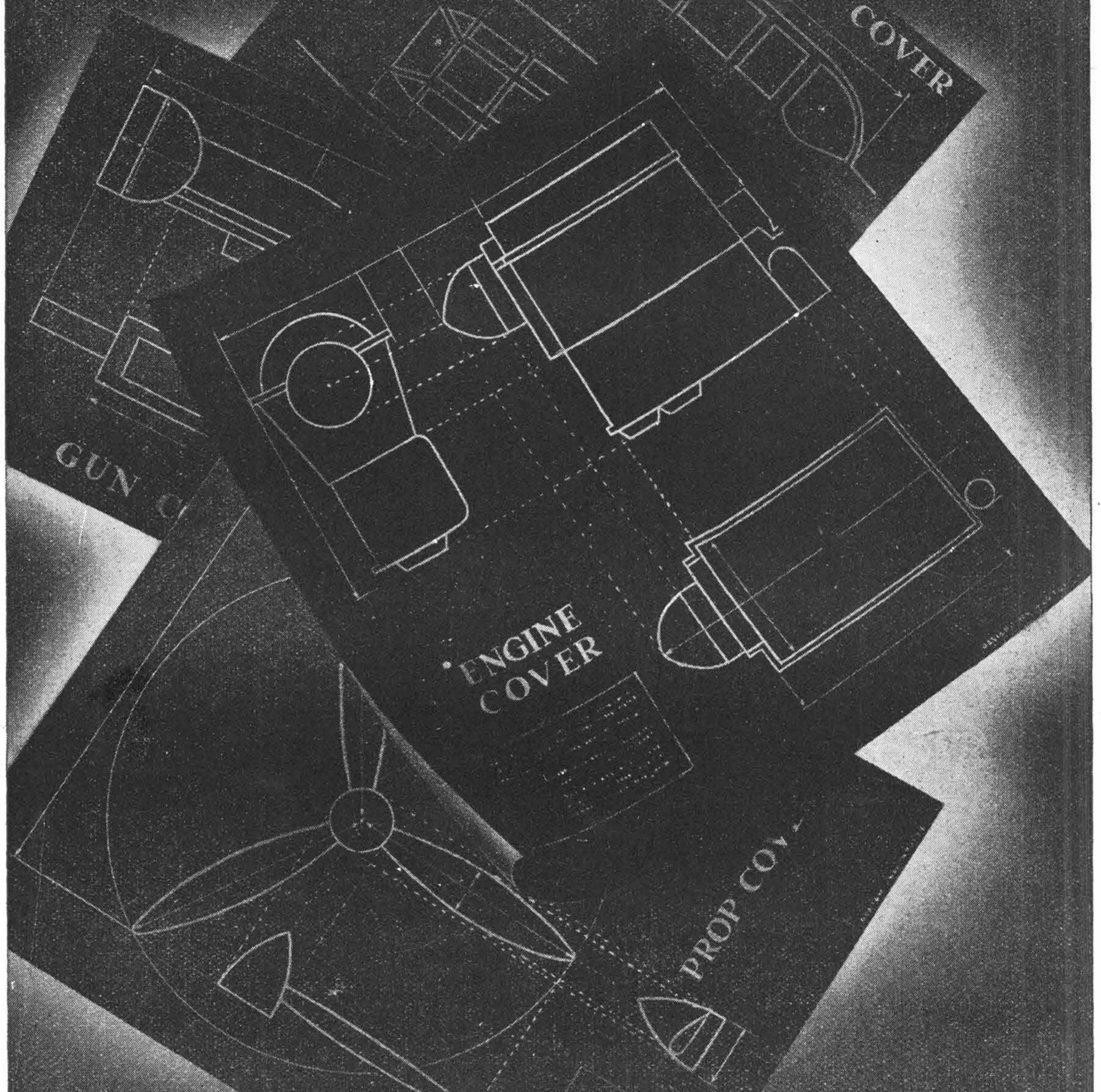
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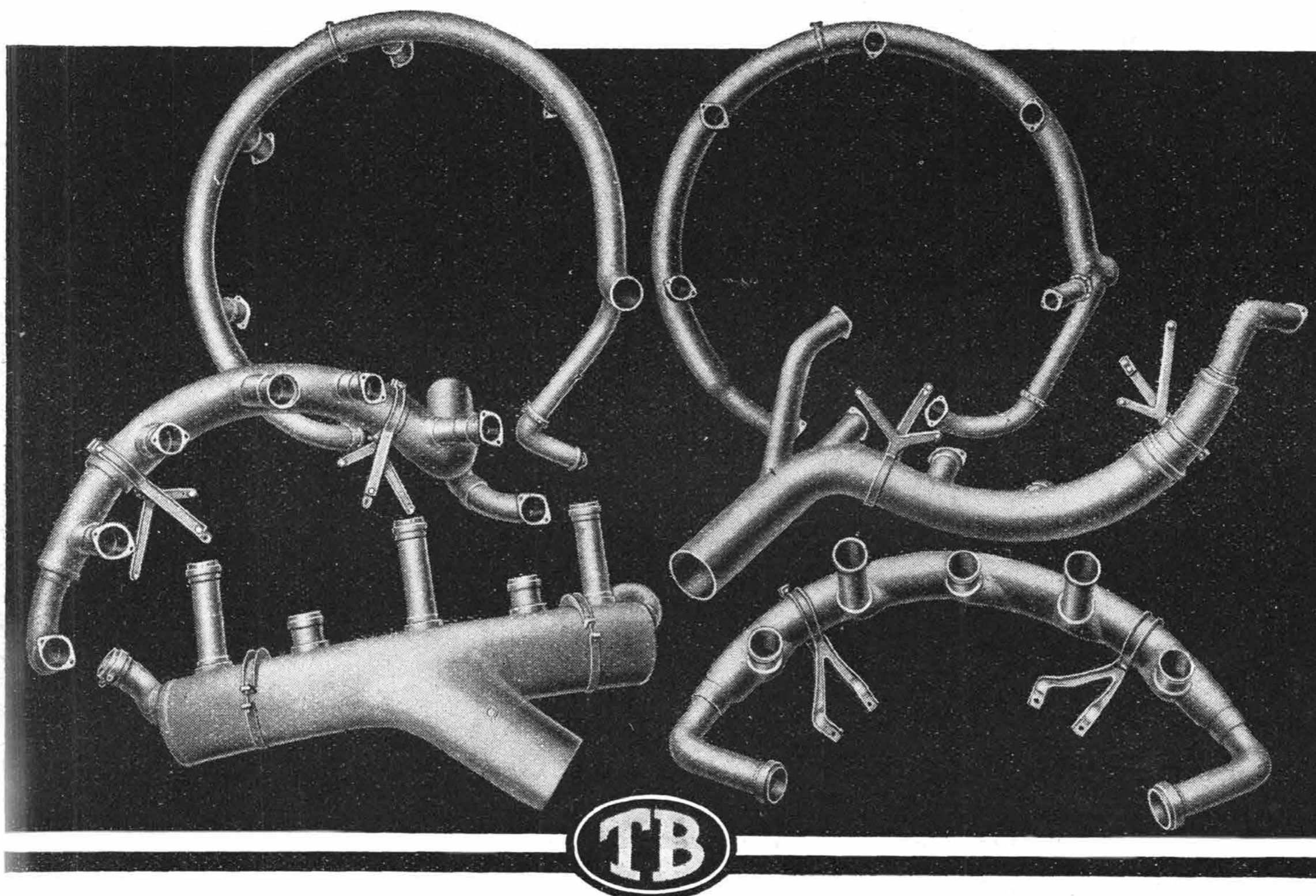
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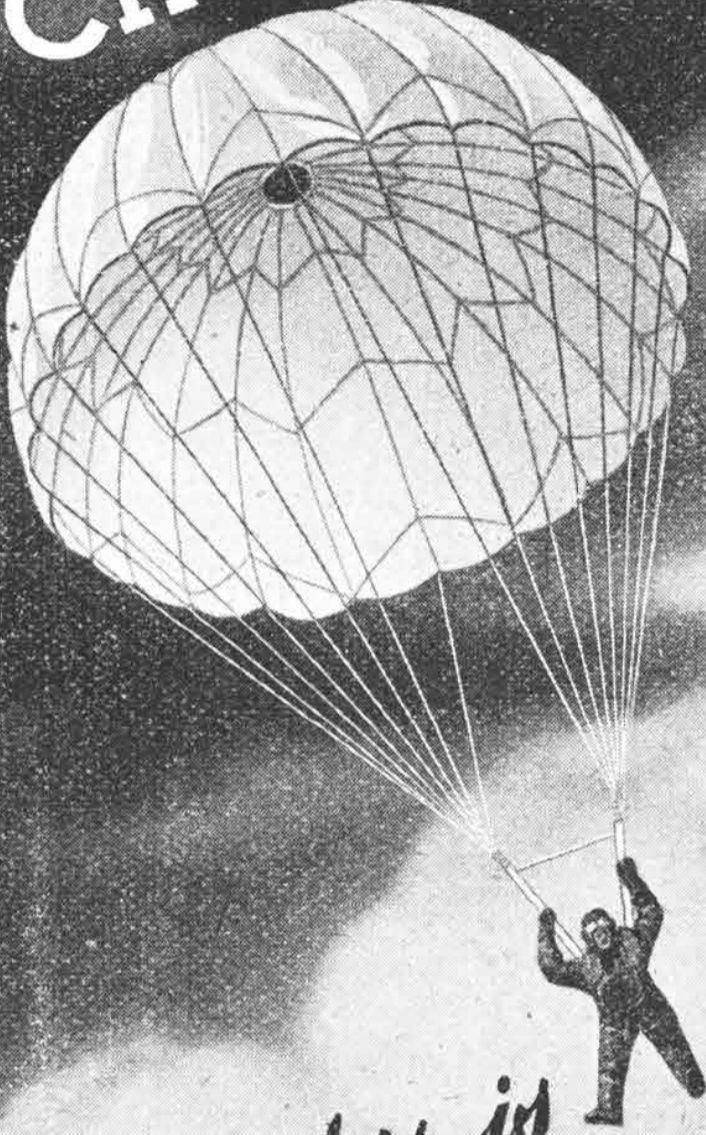
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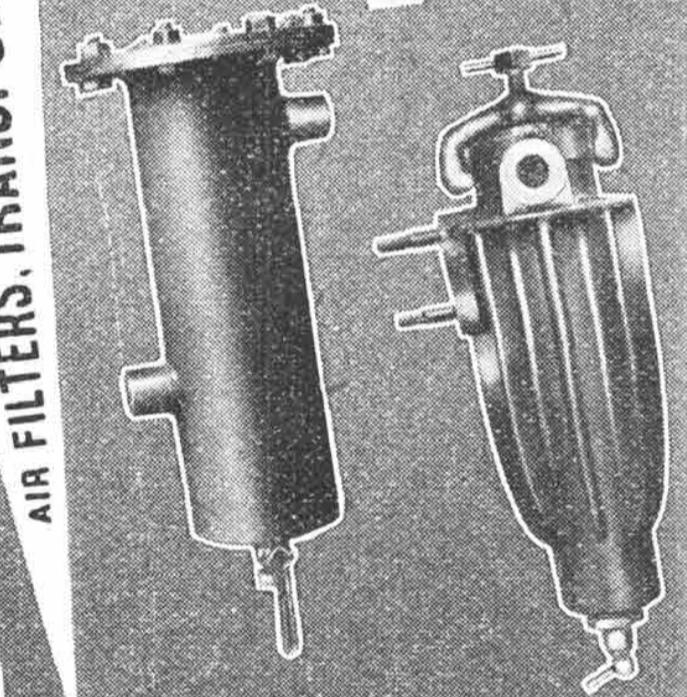
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## MATTERS OF MOMENT

### Successes Without Victory

**CRUSHING WEIGHT** has once more served the Germans well in Russia. As we have long since acknowledged, weight has become the substitute for surprise. The German advance to the Don was not unexpected. At the end of May we remarked: "The Germans will mount other offensives like that in the Crimea and the weight of them will probably carry them forward." The Russians have expected to have to give ground. Their plans in the past six months were all directed to delaying and weakening the blow. Only the Germans can know at this stage what reserve of pressure still remains behind their stroke.

Once before, near the end of a war, the Germans launched a penetrating offensive which wavered, was held, and, within a few months was broken and turned not merely into retreat but into defeat. History rarely repeats itself precisely; yet in the present situation, Germany has confessed some of her difficulties and has shown still more clearly by her actions the need she feels of labour and productive power. By her violent attacks on shipping bound for Russia, she has revealed her fear of the strength which is flowing into Russia. The bully is beginning to cover up where once he relied solely on lashing out. Confidence learns caution when there is no longer a chance to turn back.

#### Loss of Material Pre-eminence

What Germany wanted to do in Russia cannot possibly be done now. Her troops are across the Don. They are swarming southwards in the direction of Stalingrad where the Don and the Volga are only 40 miles apart. Astride that piece of land between the two rivers, the Germans would have cut the Russian armies in two, would have stopped most of the supplies reaching Russia from the South and would have a dominating position from which to descend on the Caucasus. They would also have prepared the way for an enveloping move against Moscow. That would be a hard knock for the Russians, just as, on a smaller scale, the advance of the Germans into Egypt was an awkward reverse for the British; but it would not mean the end of Russian resistance.

Nothing less than the destruction of Russian military power can save the Germans now. The occupation of Russian wheat lands cannot turn the scale. The seizure of Russian oil cannot restore Germany to her condition of material pre-eminence of two years ago. Complete control of the Black Sea cannot get for her enough of the

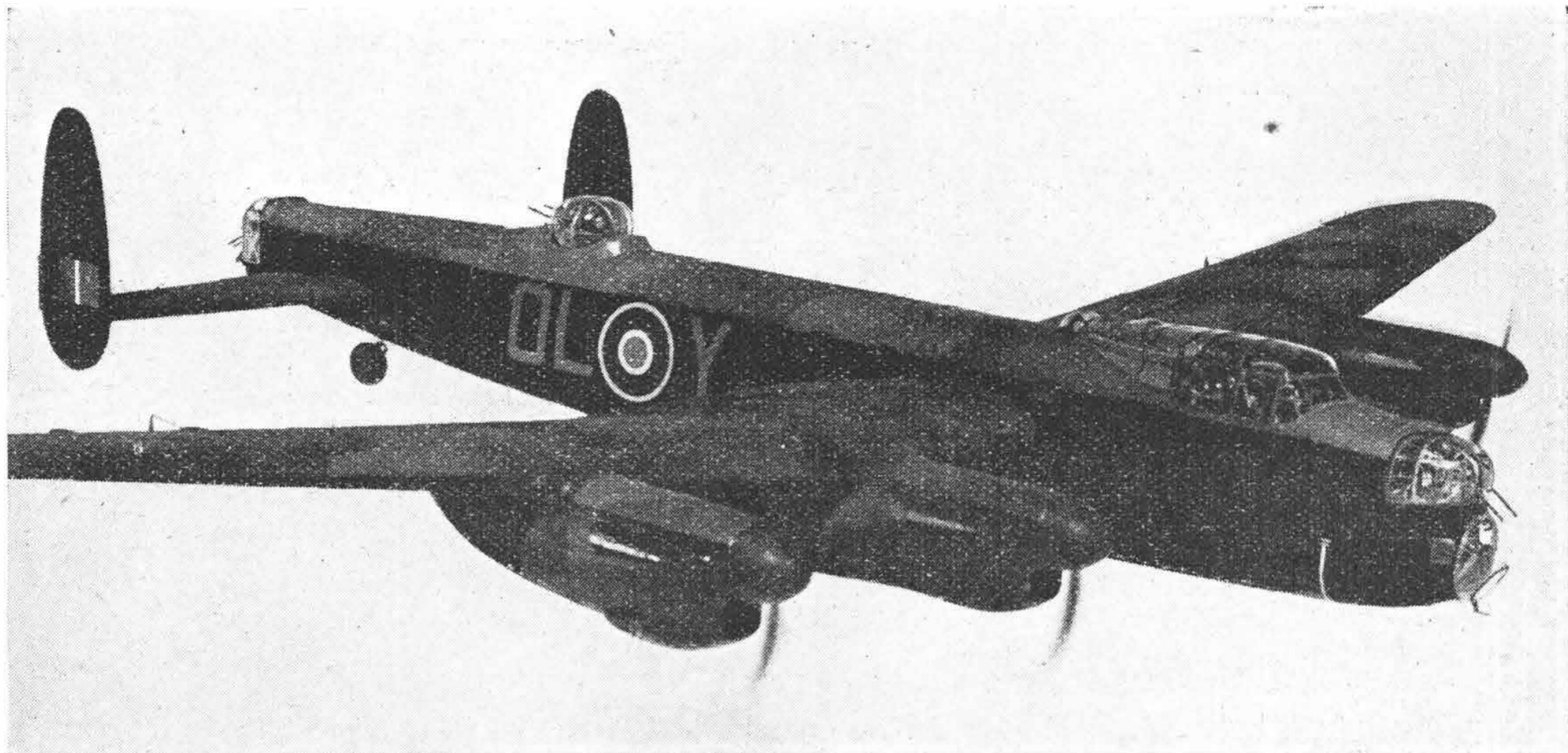
essentials of war to offset the march of her enemies towards superiority in weapon strength. She has shown in her own successes that, valuable as strategic advantages may be, weight is what counts. By the proper exploitation of weight in attack, the strategical blessings may be won. For two years Germany has been applying that principle. If there are any immutable laws in the game, the result should have been victory. Instead, the result is the creation of a greater weight for use against the conqueror.

#### Ultimate Residue of Strength

The answer Germany has evoked compels her to go on applying her formula. The scale of the productive effort in Great Britain, the United States and the Soviet Union has become so big that she must withhold her blows until they can be delivered with the greatest possible strength. One such has lately fallen between Kursk and the Don. It carried her troops a long way. It will probably carry them farther. It makes Russia reel and it imposes fresh demands on a sorely tried nation. It appears likewise to be backed by energetic defensive measures in the Arctic and in the Atlantic. It draws from the Russians a renewed plea for a diversion. The façade of the German offensive is massive and impressive. Its columns and capitols seem unshaken and uncracked by two years of fierce storm.

How much lies behind the front none can tell. The pessimist may point to the reinforcing of Rommel, to the busy submarines in the Caribbean, to the strengthening of defences in France, Belgium and Norway, and to the sea and air raids on shipping in the Arctic. He may insist that a Power capable of so many simultaneous activities cannot have put all she possesses into the shop window. In a sense he is bound to be right. What matters is the residue of strength which Germany will still be able to oppose to her adversaries when her offensive period is succeeded by the grim necessities of defence. Relative strength in the ultimate struggle will determine the affair. Until that struggle is joined, Germany can use her weight in the fields of her choosing with the success that usually accompanies concentrated effort.

The Russians seek to have the Eastern concentration diminished by a diversion in the West. Their cry for an easing of the pressure is natural and is not likely to pass unheeded, but something more than a diversion is needed. The Germans have assembled in the East the



**DAYLIGHT RAIDER.**—Avro Lancasters raided the port of Danzig, 850 miles from their base, in daylight on July 11, thus adding another triumph to the record of this magnificent heavy bomber. The Lancaster has the following dimensions: Span, 102 ft. 0 in., length 69 ft. 6 in., height 19 ft. 7 in.

men and most of the materials for their Summer campaign. The opening of a British and American offensive in the West would not necessarily affect the fighting in Southern Russia until other areas had been drained. On the other hand it would probably shorten the period of the intense offensive in Southern Russia by limiting the flow of fresh troops into it; or it might compel the Germans so to weaken other parts of their line in Russia that the Russians might develop their own diversions. Over a period of two or three months it would disclose, in some measure, the weight that lies behind the heavy punch.

The point which should be decided before the year ends is whether Germany is devoting a sort of nervous strength to her latest offensives or whether her strength proceeds still from large accumulations of power regularly replenished and capable of recuperation after every huge expenditure of energy. The Russians have aimed at exhausting the Germans. The British have prevented them from getting some of the things they urgently need. No oil, except from the Polish and Rumanian wells, can come into Germany. None of the Spoils of the East Indies can reach the Reich while the British hold firm in the Middle East and India. All the substitutes have been tried by now and the Germans can have no illusions about their ability to keep ahead of their enemies or of the growing power of the Allied Nations to turn their methods against them.

A great stroke therefore would have been justified if it could destroy half the Russian resistance and at the same time could bring material help from the Russian grain lands and oilfields. It would set back the time when Allied

strength should become relatively overwhelming. A great effort too would have justified itself if it could limit Allied carrying power on the seas and lessen the flow of arms to the Western Front. A great stroke at high cost would be worth while in Africa if it removed one sphere of material expenditure and one area of strategic uncertainty. The reserves might justly be poured out if there was a chance thereby of putting off the evil day; for while there's life there is still the hope of a twist of fortune from somewhere to save some of the booty.

Germany can still mass machines and drive her legions forward. She can still bring her aeroplanes in hundreds to the battlefield of the moment. She can send out her submarines in packs and, by picking her seas, can get good results. All her successes proceed from possession of the initiative, from high concentrations and from an acceptance of risks; but they are all successes. They do not end in victory. When she loses the initiative they will not even be successes. By her new devotion to defence, Germany is seen to be passing from positive achievement towards the accomplishment of negatives. She is trying to prevent the final campaign by attacking Allied transport, by opposing a strong fighter force to British air attack, by constructing defence zones in the Low Countries and by employing brutality against unrest in occupied lands. She is beginning to stand in awe of a weight of attack even greater than her own. The once predominant Reich is lashing out to ward off blows and her weightiest strokes are falling where she is most closely engaged. The day is too far gone for them to become the strokes of victory.

## Air Triumph in Egypt

THOSE who are accustomed to measure their words may still hesitate to say that the R.A.F. saved the day at El Alamein. The full story will appear in due course and what the aeroplanes did will then be capable of assessment. So far the air effort has only been described. The descriptions have been eloquent enough. Some of the eloquence was probably released by Mr. Churchill's announcement that, since October last, the Army commander has prescribed the targets for air attack. No longer could there be a suspicion in the public mind that the R.A.F. was undertaking tasks which the Army had not thought of.

Relations between Army and Air Force in Africa have been excellent over a long period. We have received ample testimony on that point. The outcome of the close relations reached its highest manifestation in much of last week's fighting in Egypt. As in the Great War, so in Egypt, the aeroplanes have been down in the dust and smoke of the battle. Guns and bombers worked together to smother resistance in the forward areas and there seems to have been mutual satisfaction. One correspondent declares that the combined effect of bombs and shells on some of the targets had the double result of opening the

way and protecting the fighter-bombers from anti-aircraft fire.

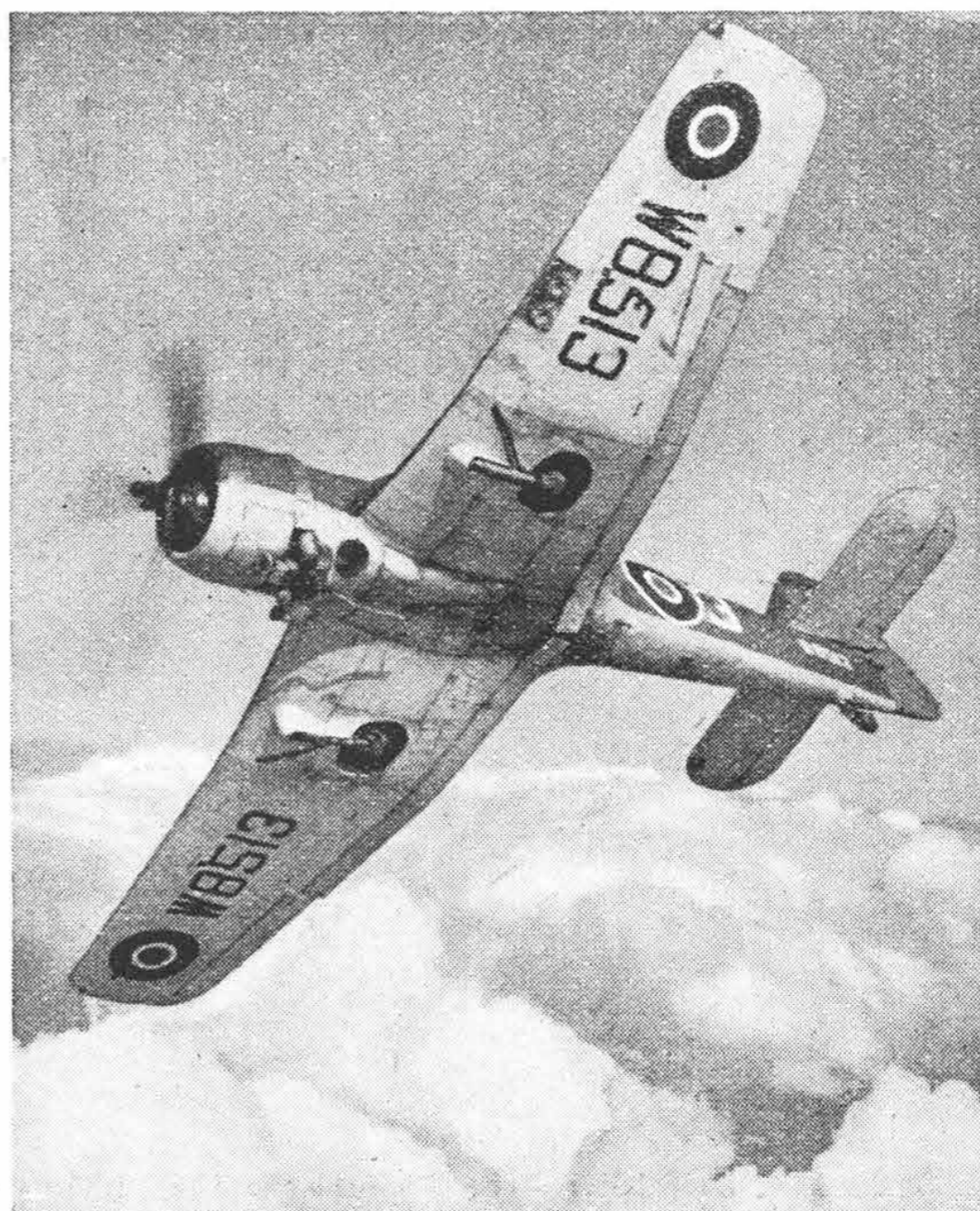
One of the best tributes to the work of the R.A.F. came from "The Times" special correspondent. He wrote:—

"Hitting sometimes so near to our own aerodromes that the armourers could hear the explosions of bombs which they had fitted on only a few minutes before, the R.A.F. have made life intolerable for the enemy and have contributed in the highest degree to the marked decline in his efficiency and fighting spirit. It is not only that the damage has been sufficiently great to cut down the enemy's hitting power by possibly half; the moral effect has been shattering.

"Day after day, night after night, the enemy has not known a moment's respite and has been unable to find the smallest haven in which to shelter from the rain of bombs and bullets. Kept ceaselessly on the move during daylight hours, he has been denied the sleep and rest at night which are vitally necessary.

"On top of all this there has been the well-known psychological effect on the realisation of the impotence of his own air force and its inability to protect him. He has suffered, indeed, something of what our men endured in Greece and Crete; seeing the sky filled with death-dealing hostile aircraft and all but void of his own. We have not lost more than half a dozen bombers through enemy action since our withdrawal from the frontier. For days there was hardly an enemy aeroplane in the sky."

The double job of holding up the umbrella and clearing away the obstructions in the gutters was evidently performed with skill and with the utmost devotion. The Army in this instance knew what it wanted of Air Power. The R.A.F. knew what the Army wanted and understood how to give to the Army precisely that service. Neither an Army air arm nor a force of dive bombers could have done better. We should be surprised if either could have done as much. There was no disorganisation in the R.A.F. during the retreat. It served as part of the rearguard



["Aeroplane" photograph

CLIPPED WINGS.—A Miles Master with the clipped wing-tips which are now a standard modification on all versions of the Master. This is the Master III, with 825 h.p. Pratt and Whitney Twin Wasp Junior motor and a top speed of 230 m.p.h. The new R.A.F. markings on the wings and fuselage are interesting.

without suffering the inconveniences of hastily improvised positions. When the time came for the counter-attack, its bases were nearly in the front line but they were still good bases, efficiently organised by people who have spent their lives in catering for the Air Arm.

## AIR IDENTITIES—X



Air Chief Marshal Sir Philip B. Joubert de la Ferté,  
Air Officer Commanding-in-Chief, Coastal Command.

## The Chief of the U.S. Air Forces in Europe

MAJOR-GENERAL CARL SPAATZ, D.F.C., D.S.C., has been appointed to command the United States Air Forces in the European Theatre of Operations.

Major-General Spaatz is 51 and has been flying since 1916, when he joined the aviation section of the U.S. Signal Corps. He was one of the first American pilots to go overseas in the last war and commanded the largest U.S. flying training school in France. He was in Great Britain as an official observer during the Battle of Britain.

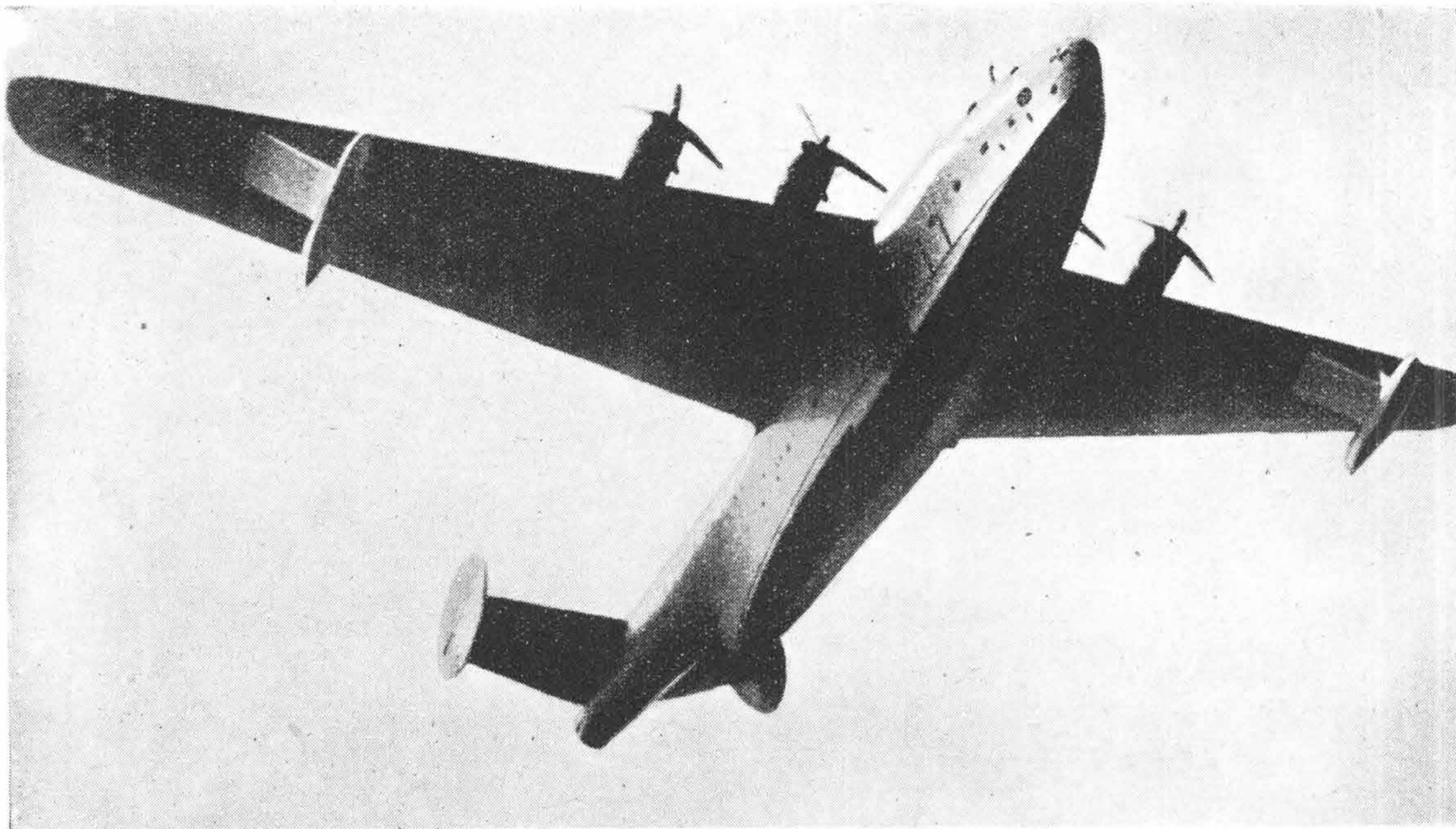
## The Indian Air Force

AN ENSIGN and badge were presented to the Indian Air Force on July 12 by the Duke of Gloucester. The ceremony, which was attended by representatives from all branches of the Indian Air Force, took place at the Risalpur air station. The Duke of Gloucester was accompanied by General Sir Alan Hartley, Deputy Commander-in-Chief, and by Air Commodore T. M. Williams, representing Air Chief Marshal Sir Richard Peirse, A.O. C.-in-C., India, who was unable to attend.

The new ensign resembles the light-blue ensign of the R.A.F., but the red, white and blue roundels are superimposed on the Star of India.

Though it remains under the command of the R.A.F., the Indian Air Force may now be said to have reached independent status. All the squadrons are commanded by Indian officers, and, apart from a few British N.C.O.s, the squadrons are entirely manned by Indians. The officers were trained at Cranwell and with R.A.F. units in Great Britain.

The Indian Air Force has done well since the War began in the Far East and has been greatly expanded. Most of the squadrons are engaged on Army Co-operation work or coastal patrol duties.



THE MARS IN FLIGHT.—The Glenn Martin PB2M-1 Mars, the largest flying-boat in the World, has now taken to the air on its trials. This photograph shows well the enormous wing span of 200 ft.

## Sir Walter Windham

SIR WALTER WINDHAM, the air pioneer, who died in his 75th year on July 5, was the kind of character round whom a reasonably ingenious writer might have hung quite a good book or film. His father was in the Rifle Brigade and his mother was the granddaughter of the 6th Duke of Bedford, so Hollywood would have loved him, only he was 40 years too old.

I first met him in 1909, when he was running an affair called The Aeroplane Club. The Aero Club, not then Royal, was in rather a comatose state, so Windham's club, which had no habitation and only talked, did good by helping to stir it up—and he had persuaded some quite influential people on to the committee.

At that time he ran a workshop down Clapham Junction way, where he took in premium pupils to teach them motor engineering, and the motor bodies they built kept the show going. He had retired from the Royal Indian Marine some time before as a Lieutenant, and as a hobby he was a Captain in the newly formed Motor Volunteer Corps, of which Col. Mark Mayhew, the miller, was O.C., so he was generally described as Captain Windham, R.N.—it was all a trifle confusing.

As soon as aviation became news, he plunged into it with gusto. First came The Aeroplane Club aforementioned. Then he and his lads at Clapham built a monoplane of Bleriot appearance. And with this he appeared at the first flying meeting in Great Britain, that at Doncaster, in October, 1909, at which he had been appointed Controller.

The meeting began three days before a meeting at Blackpool run by The Aero Club, which regarded Doncaster much as the Jockey Club would regard a flapper meeting. But Cody and Leblon and several Frenchmen really flew at Doncaster. Captain Windham's monoplane was wheeled out before a battery of cameras, the Captain climbed in, and as he sat down the fuselage gently wilted in the middle. The resultant photographs were of unusual merit.

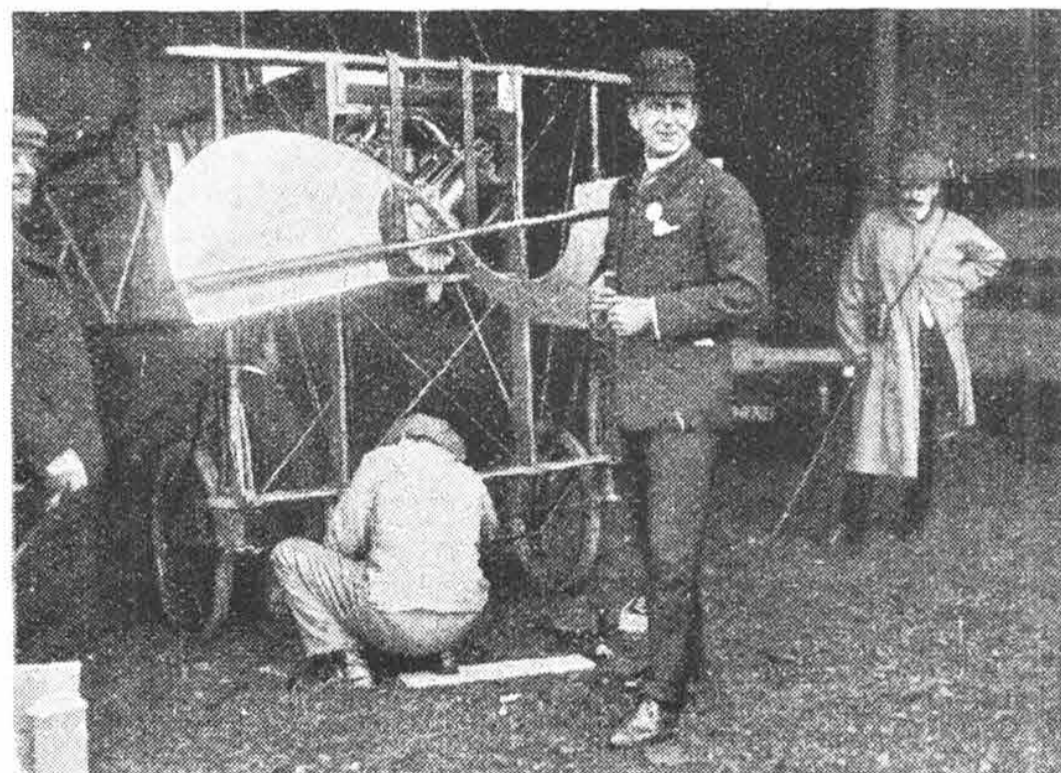
In October, 1910, he, with Mr. Keith Davies as pilot, took two Humber-built Bleriot-type monoplanes to India, for an exhibition at Allahabad. In one of them he became the first air passenger in Asia—and, incidentally, Mr. Davies and Captain George Dawes, later R.F.C. and now, again, R.A.F., became the first and second pilots in Asia. The latter made the first cross-country flight by getting outside the polo ground and alighting on the railway alongside it.

In September, 1911, Captain Windham persuaded Gustav Hamel, Charles Hubert and Clement Gresswell, well-known pilots, to fly and carry letters as and when weather permitted between Hendon and a field near Windsor. This is still held, I believe by philatelists, to have been the first Aerial Post in Great Britain. H.M. Post Office played up by post-marking

the letters. Charles Hubert broke both his thighs in a crash and Captain Windham collected £930 for King Edward's Hospital at Windsor. A busy week. But after that he rather faded out of aviation, and The Aeroplane Club died a natural death.

Windham had plenty of courage and self-confidence, for in his youth he won the silver and bronze medals of the Royal Humane Society and Lloyd's silver medal for life-saving. In 1914 he joined Mr. Churchill's Royal Naval Light Infantry at the Crystal Palace, went to the Continent, and so qualified for the 1914 Star. Before that he was a King's Messenger, and was justly proud of the fact that he had brought the Anglo-Russian pre-war treaty from Petersburg to London.

After the war 1914-18 he married the widowed mother of that well-known sportsman Lt.-Cmdr. Glen Kidston, who was killed with Tony Gladstone when their machine broke in the air over the Drakenberg Mountains in S. Africa. Windham put up as prospective Conservative candidate for Willenhall, Central Hackney, and Great Yarmouth, and actually contested Lewisham, but his eloquence, which persuaded so many people, failed to convince the free and independent, if thick-headed, English electors. He was knighted in 1923, for he certainly was a trier.—C. G. G.



OLD TIMER.—Capt. Walter Windham, one of the pioneers of flying, who has died recently, seen at the Doncaster Flying Meeting with his aeroplane in 1909. The figure in the background is obviously a spy.

### A Flying Club Pioneer

MR. D. G. MARSHALL, M.B.E., the Chairman and founder of Marshalls' Flying School Ltd., at Cambridge, died on July 9 on his way to hospital after an accident while he was out riding.

Since 1929 flying at Cambridge has automatically meant Marshall's, for flying practically began there when Mr. Marshall's son, Arthur Marshall, landed an aeroplane at Fen Ditton in 1928. Since that time father and son have worked for and sponsored flying in the neighbourhood in the face of many difficulties.

Mr. D. G. Marshall bought his first aeroplane in 1919, together with a hangar from the War Disposal Board. He was also interested in motoring and concentrated during the next few years on his motor business, which he had founded in 1909. In 1928 he bought Fen Ditton and established Marshall's Flying School, and held the first air display there in 1929. Between then and 1938 more than 500 pilots were trained by the School.

Mr. Marshall was the Chairman of the Cambridge Aero Club and the University Aero Club, and was also associated with the founding of the Cambridge Squadron of the Air Training Corps. At Cambridge his organisation also trained Reserve, club and Civil Air Guard pilots.

In October, 1938, Fen Ditton, where the Marshalls had been for nine years, was closed and a new aerodrome, developed by Marshall's Flying School, was officially opened by Sir Kingsley Wood, then Secretary of State for Air. Though all private flying training ceased at the beginning of the War, Marshall's Flying School, Ltd., has been contributing to the War effort.

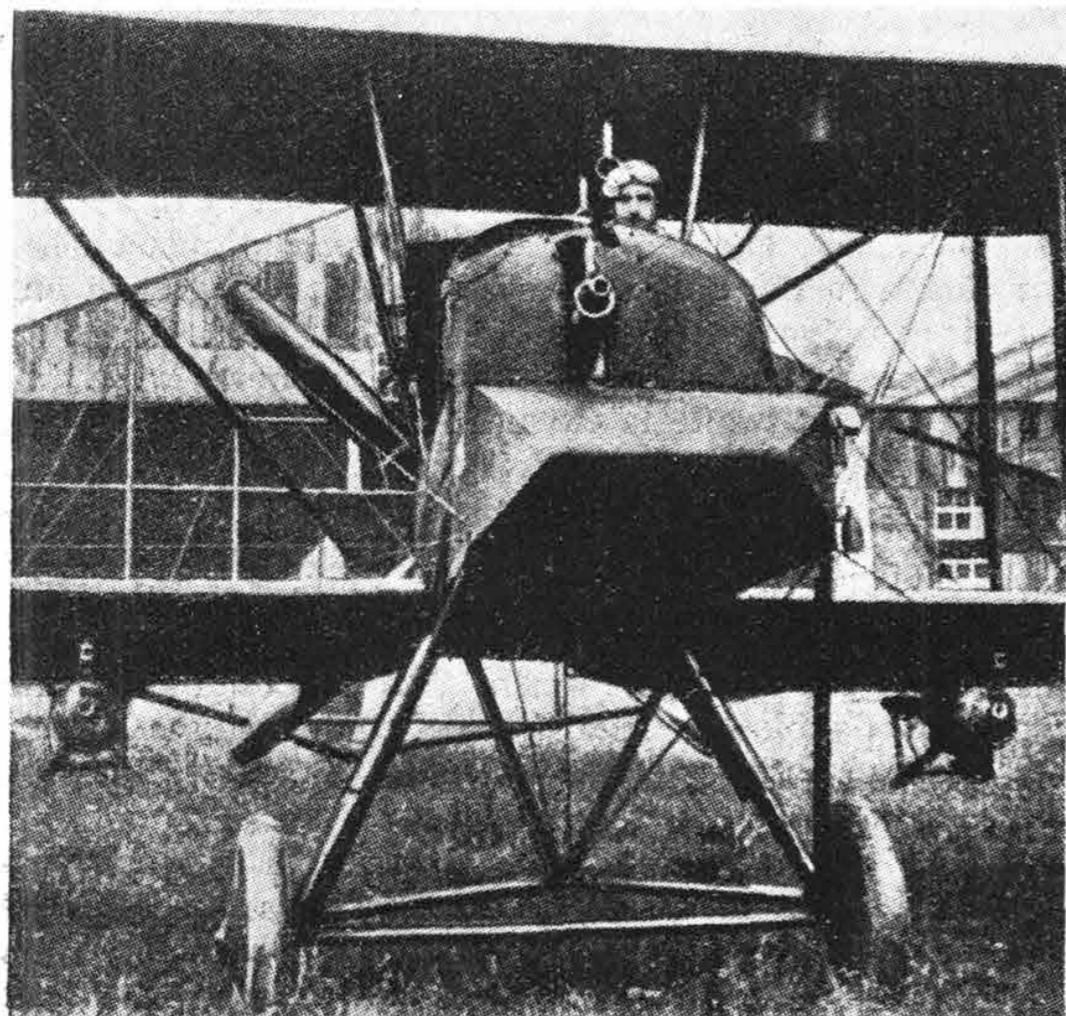
Mr. Marshall's death is a great loss to Cambridge and to civil flying generally. Mr. A. G. G. Marshall will, we hope, carry on his excellent work of flying training after the War, but his father and partner will be missed by all who knew him.

### Captain C. W. F. Wood

HIS MANY friends in this country and Africa will learn with regret of the death of Captain C. W. F. Wood, one of the senior pilots of Olley Air Service, Ltd. He died at Liverpool on July 9 after an operation.

Captain Wood was an experienced pilot with more than 10,000 hours' flying-time to his credit. He was well known in Central Africa where he flew on one of the earliest services to be operated in Tanganyika, and had also made many survey flights for the Persian Oil Company in Persia.

He joined Olley Air Service, Ltd., early in 1937 and had been flying continuously in that Company's service. Since the Associated Airways' Joint Committee, of which Olley Air Service is a member, was formed in 1940 for the internal air services in Great Britain, Captain Wood had been flying on the Liverpool, Dublin, Belfast and Glasgow services operated by the Committee. He was one of Olley Air Service's most valued pilots and the Company's sense of loss is shared by everyone in civil flying.



AN EARLY CANNON.—A modified F.E.2b of No. 100 Squadron R.F.C. in France in 1917 with a Vickers pom-pom mounted in the nose. This combination did excellent work on ground strafing, although stoppages caused trouble.

### ODDENTIFICATION—LXVIII



From Manchester to Lancaster the step is short,  
Their recognition differences soon are taught—  
A little more span, a little more grace,  
Another two engines but the same old face—  
A truly magnificent aeroplane—  
Chadwick and Dobson have done it again.  
If further particulars you require,  
From Willy at Augsburg you'd better enquire.

### Aircraft Armament

SINCE the series of articles on "The Weapons of Air Warfare" began to appear in THE AEROPLANE, we have received a number of interesting letters from correspondents who have had first-hand knowledge of some of the incidents mentioned in the narrative. These have both corrected and amplified certain important historical details.

Thus, one correspondent points out that the experiments made at Le Hameau with an F.E.2b mounting a shell-firing gun were not the only ones of their kind which took place during the Great War. No. 100 Squadron, operating from Trezennes, used a Vickers pom-pom mounted in a modified F.E.2b to attack ground targets at night in the Summer of 1917.

This aeroplane was flown by Major J. Sowrey (now Group Captain Sowrey, R.A.F. (ret.)) and Captain Schweitzer. They found that moving trains made good targets at night, because the steam from their smoke stacks and the glare from their fire-boxes showed up well from the air.

Unfortunately, the gun used for these attacks was not reliable, and its frequent stoppages could not be corrected in the air. Thus, the "shoots" would be brought prematurely to an end, and the F.E. would have to return to its base before all its ammunition had been expended.

A letter from Mr. Camden Pratt, who designed the Short Gun Carrier before the Great War, has been published in a previous issue. As he pointed out, this aeroplane was designed from the outset to take a shell-firing gun and it would, therefore, appear to have been the first seaplane intended specifically for such a purpose to appear in any country.

### Dorniers for Finland

THE FINNISH AIR FORCE is reported to have bought an unspecified number of Dornier Do 22 reconnaissance bombers with 860 h.p. DB 600 motors. They will be used as landplanes and seaplanes.

### Parliament and Bombers

IN the issue of THE AEROPLANE of July 10 a mistake in names led to the confusing of Mr. Garro Jones (Aberdeen North) with another member who suggested, in the course of the House of Commons debate, that heavy bombers should have been flown to Libya at the crucial time. Although Mr. Garro Jones was critical of the Air Ministry as regards its dive-bomber policy, he took the wise view on the subject of sending bombers to Libya. In fact, he expressed the opinion that it was not possible to send such support to Libya because of the equipment that would have to go with it and the special bombs which could not be got to North Africa in time.

*The 149th Week of*

# THE WAR IN THE AIR



A BRISTOL BEAUFORT I OF THE R.A.F. COASTAL COMMAND.

**DAYLIGHT ATTACKS** at long range have been a rarity in this War. Since the slaughter of the Luftwaffe in the Battle of Britain two years ago—a slaughter from which the German Air Force has never fully recovered—the defences on both sides have been judged too strong for any long-range raiding by day.

Now the Avro Lancaster has shown that, given suitable weather, it can carry a load of the heaviest bombs far into enemy territory and launch them with the precision which only daylight bombing can give. On July 11 several squadrons of Lancasters flew 850 miles out from home to bomb the submarine base at Danzig. The loss of not more than three of their number was slight in comparison with the results gained.

The success of the Lancaster in these flights is partly through its moderately high speed of around 300 m.p.h. flat out and some 60 m.p.h. less cruising, partly through its heavy defensive armament and partly through choice of cloud cover in which to fly. Navigation in a large machine such as the Lancaster is less difficult than in the more cramped quarters of a medium bomber and the general comfort of the crew is greater, which is an important factor in adding to their efficiency on a long raid.

As our strength increases in the air so will our power to

strike at long range by day and night. As the enemy's air forces are overcome so the cumulative effect of these raids will increase. The Danzig raid was concentrated on help for Russia in the Baltic—direct aid which at present only the air can give.

Lack of adequate fighter interception shows again how greatly the Luftwaffe is extended to meet all its commitments on many fronts. Once through the hard shell of fighter defence along the coast of France the invading bomber would be unlucky to meet real air opposition right into Germany itself, for, in all probability, few other than night-fighting squadrons and operational training squadrons are maintained within the Reich. The Lancaster's raid may serve the double purpose of inflicting immediate damage and of forcing the enemy to withdraw fighters from other fronts.

Probably most of Germany's air strength in Russia was concentrated on the thrust across the Don around Rossosh—although the report that 6,000 first-line aeroplanes and 12,000 total strength were concentrated there by the Luftwaffe is obvious rubbish. A total of 2,000 first-line German aeroplanes in Russia is more likely to be true. In Africa the Luftwaffe is still inferior in numbers to our Air Forces there. The result is that the enemy troops are being

worn down by constant air attack which in the end may have a remarkable effect on their capacity for sustained fighting.

Unfortunately there is little doubt that Rommel is receiving important reinforcements across the Mediterranean to Tripoli, Benghazi, Tobruk and even to Mersa Matruh. The loss of bases from which we can give air cover to the Navy has meant that the Mediterranean Fleet is more or less bottled up in the Eastern end of that Sea. Never has there been clearer proof of the absolute reliance of a modern powerful fleet on an air umbrella over it in narrow waters and of the impossibility of providing that umbrella except within about 80 miles of the land bases—despite all our concentrated air strength. Sea-borne fighter protection is not adequate to sweep the channel, for the carriers are too vulnerable to expose to enemy air attack from land at close range.

Thus our air effort from Egypt is chiefly confined to tactical support for ground forces at present. How strong that support is was shown by figures quoted last week.

## Five Miles Westward

**T**HE STAND made by the Eighth Army at El Alamein proved to be no mere pause in an Eastward retreat. After dislodging the enemy from a strong point early in the week, General Auchinleck's men struck Westwards again on July 10 and pushed forward five miles along the coast from El Alamein to the Tel El Eisa area, destroying 18 enemy tanks and taking 2,000 prisoners as they advanced. At the same time, the Germans farther south moved into a defensive British position which was of so little importance that it was abandoned without resistance. By this exchange of territory the Eighth Army were able to increase their pressure on the enemy within the bulge South of Alamein.

For two days before the British attack there had been a lull in the fighting on the ground, but the Imperial and U.S. Army Air Forces steadily increased the intensity of their bombing, and the size and frequency of their fighter sweeps, till all their previous efforts were eclipsed.

With their targets concentrated in a comparatively small area, bombers and fighter-bombers, sometimes escorted by fighters, sometimes alone, went into action in wave after wave, and left the roads and tracks in the enemy's territory strewn with smashed and burnt-out transport vehicles, and the enemy's aerodromes littered with the wreckage of his fighters and bombers. Sometimes their targets consisted of 2,000 transports in a single convoy, and on one occasion they destroyed at least 50 vehicles.

A formation of fighter-bombers, raiding the aerodrome at El Daba, arrived as a formation of Stukas, escorted by Messerschmitt Me 109s, was taking-off. The fighter-bombers, still carrying their bombs, attacked the enemy with their guns and shot down two Ju 87s and three Me 109s. They then bombed. Meanwhile, other fighter-bombers had attacked the

More than 5,000 individual sorties were made by fighters and bombers in 10 days up to July 11—most of them in daylight.

In one period of 24 hours the following operations were made:—

130 bombers (probably Marylands, Bostons and Baltimores) escorted by 127 fighters (probably Hurricanes and Kittyhawks) attacked enemy concentrations South-west of El Alamein.

75 Kittyhawks with bombs attacked transports on El Daba aerodrome.

166 Spitfires and Hurricanes made hourly sweeps.

84 Wellingtons, eight Liberators and six Blenheims bombed motor transport at El Daba and shipping off Benghazi at night.

An interesting point is the small fighter protection needed for the day bombers—less than one-tenth of that necessary over France. Obviously the air opposition is small and so much concentration of force at short range is certain to play an important part in the future operations.

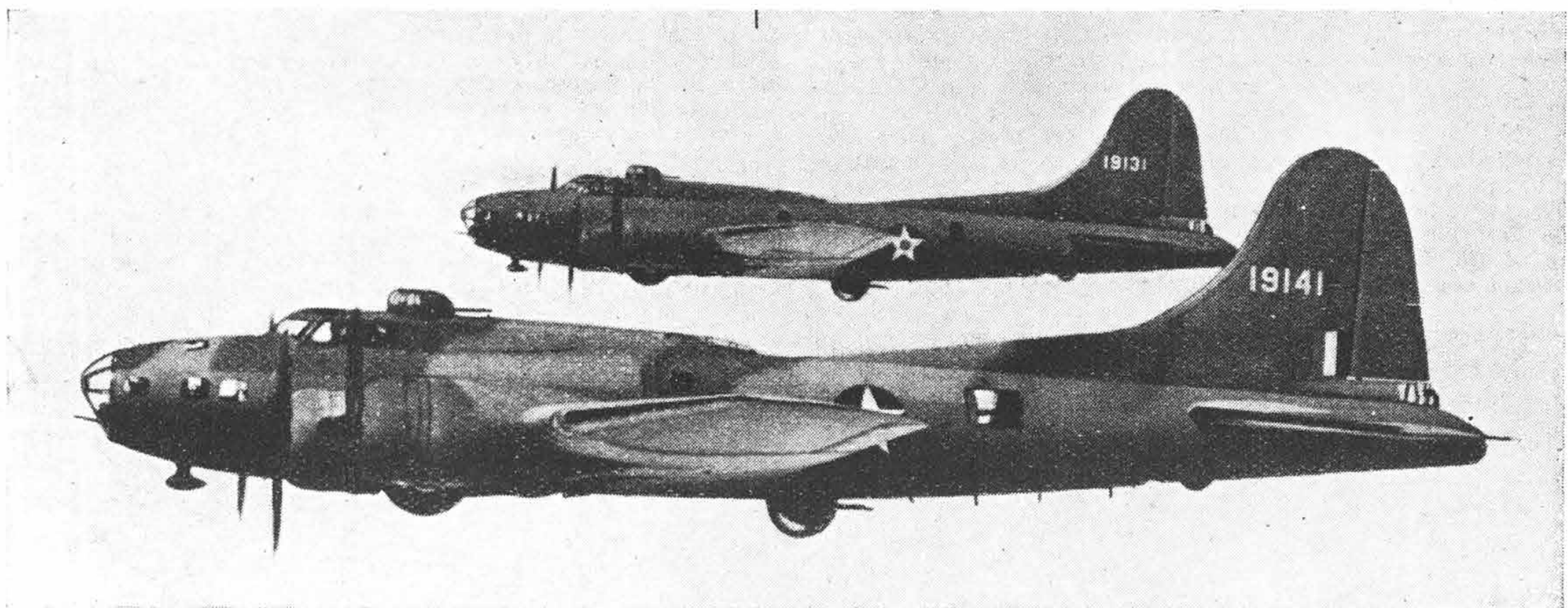
enemy on the ground. One Stuka received a direct hit as it taxied across the aerodrome. Another bomb fell in the midst of 10 Me 109s which were refuelling, and caused a fire that spread from one fighter to another. Few of the 10 could have escaped damage.

So complete was the United Nations' control of the air over North Africa that heavy bombers of the R.A.F. and U.S. Army Air Forces were able to raid Benghazi twice and Mersa Matruh once, in daylight. The first raid on Benghazi was made on July 5, the second on July 11. In the first, a ship was hit and blew up in a series of explosions. Also on July 11 Bristol Beaufighter long-range fighters intercepted a formation of Junkers Ju 52 air transports escorted by Me 110s and Ju 88s. The Junkers instantly turned back but, without loss to themselves, the Beaufighters shot down three and damaged at least nine of them, and gave up the chase only when their ammunition was exhausted and their petrol running short.

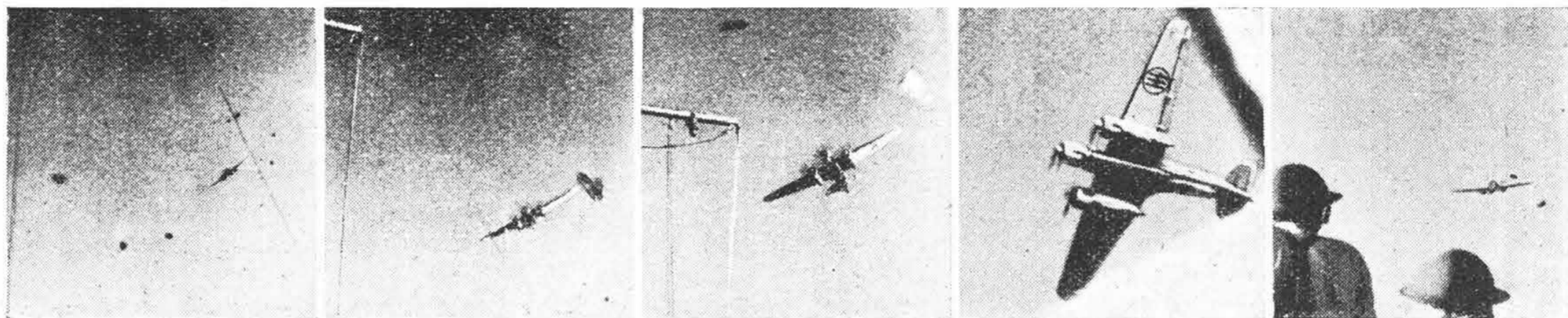
Beaufighters were also extensively used for attacks on enemy lorries between Matruh and Tobruk. On July 6, they had a particularly good day and destroyed at least 13 vehicles, caused confusion in the convoy and killed many enemy troops. They also sought out barges and schooners creeping along the coast between Tobruk and Mersa Matruh.

Heavy and medium bombers made night raids on Tobruk, on Messina and on objectives in Crete. On the night of July 9-10, R.A.F. medium bombers and naval aeroplanes made an attack on enemy shipping in the Mediterranean. Two hits were scored on an Italian destroyer and two on a 5,000-ton merchant vessel. In another operation over the Mediterranean bombers of the U.S. Air Forces shot down two Me 109 fighters which tried to intervene.

Enemy bombers raided positions behind the British lines at



LATEST TYPE.—The Boeing B-17E of the United States Air Forces, now in service with the R.A.F. as the Fortress II. The under-gun turret is worthy of note, as is the odd fact that the nearer machine has American side and British tail markings—presumably for operation from Great Britain.



MARE NOSTRUM I.—Action photographs taken by a cameraman of British Newsreels of a Savoia-Marchetti S.M.79 as it made an attack on a ship of a British convoy in the Mediterranean.

night and two were shot down, one off Alexandria and the other near Cairo. Axis fighters and bombers were spasmodically active over the battle area; a tendency to use more Italian fighters was observed, and among the types shot down were some old C.R. 42 biplane fighters.

Malta endured another week of heavy bombing, but defended itself energetically. Four-cannon Spitfires appear to be operating from the Island in large numbers, and so well do they discharge their duties that even the enemy's expedient of sending disproportionately large fighter escorts with insignificant bomber forces avails him nothing. Twice last week the Spitfires shot down all the bombers—they numbered only three in each formation—and some of the escort as well.

The joint communiqués covering land and air operations in the Middle East, which were instituted on July 1 to present a single comprehensive picture of events in that theatre, tend to be confusing to those who are interested in the different aeroplanes used by the Allies and the Axis. To the compiler of the joint communiqués most aeroplanes are "aircraft," and those who would discover identities must now read lengthy Air Ministry News Service bulletins and newspaper reporters' accounts, and make careful notes and comparisons. But if they attempt to reconcile the different figures given for the same events, they will only make confusion worse confounded. There was little to complain of in the old system, and, judged by the new, much that was praiseworthy.

#### The Drive to the Caucasus

German claims to have reached the Don "on a broad front" during the previous week were followed by a crossing of the river by an infantry division—from 15,000 to 18,000 men—with about 100 tanks, at a point opposite Voronezh. The crossing was not accomplished without heavy losses, but the casualties inflicted did not materially reduce the enemy's strength, and at the week-end the Russians admitted that the situation at Voronezh was "very grave." The Germans claimed to have captured the town.

Earlier, the fall of Rossosh had enabled the Germans to cut direct railway communication between Moscow and Rostov-on-Don, but another link remained open through Stalingrad.

Fierce fighting was also in progress in the neighbourhood of Kantemirovka (45 miles South of Rossosh), and in the direction of Lisichansk, on the South-west bank of the river Donetz, about 60 miles East of Izyum. Kantemirovka was taken on July 11. The German offensive in the South covered a front of some 220 miles.

The enemy also assumed the offensive on the Kalinin front, North of Moscow, where they claimed to have broken through the Russian lines. The Russians stated that their troops were striking back with success. North of Voronezh, the enemy was forced on to the defensive by a Russian thrust. The Germans dug themselves in and relied upon the Luftwaffe to break up the Russian attacks. An unofficial report stated that the Russians had made a three-mile breach in the German positions in this area.

Neither side could claim mastery of the air, but both were able to bring strong air forces to bear in the battle areas. One of the few supplementary communiqués issued by the Russians concerning the activities of the Red Air Fleet stated

that on July 5, on various sectors of the front, Red airmen destroyed or damaged about 70 tanks, more than 80 lorries with troops and war material, and 45 waggons with ammunition, wrecked two railway trains and dispersed one infantry regiment and two cavalry squadrons. In the Voronezh area the Germans were reported to have used one aeroplane for every tank and to have put no fewer than 2,000 machines into the air at this point. This was obviously an exaggeration.

German bombers were reported, on July 8, to be making systematic attacks on railway targets around Moscow. Luftwaffe operations of this kind usually foreshadow large-scale land offensive in the same area.

Air losses reported by the Russians for the week July 5-11 were: German 583, Russian 225.

#### A Japanese Reverse in China

The Chinese scored their first major success for many weeks when, after a three-day battle on the Kiangsi-Chekiang railway in Eastern China, they routed the Japanese and drove them Eastwards towards Linchwan, 65 miles South-west of Nanchang, capital of Kiangsi province. The enemy's operations in this area were part of a plan to open railway communications between Manchuria in the North and Malaya in the South.

Earlier in the week, the Chinese recaptured Nancheng and Ihuang (South-east of Tsungjen), and later took Tsungjen itself.

A communiqué from American headquarters on July 11 stated that on the previous day Allied aeroplanes had bombed the Japanese headquarters at Linchwan. Two of the raiders were lost. On July 9, bombers of the U.S. Army Air Force in China raided an aerodrome at Nanchang and damaged at least 10 Japanese aeroplanes on the ground.

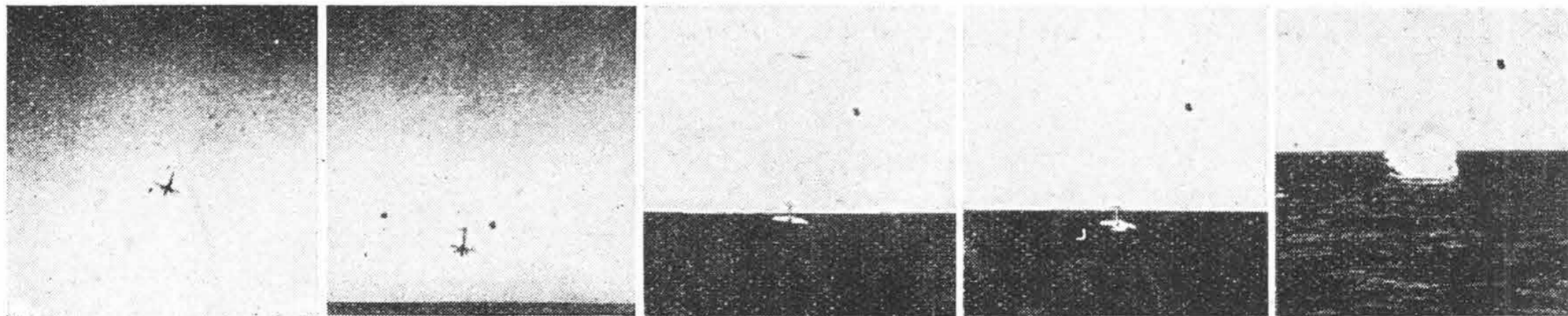
Japanese troops landed at Juian, near Wenchow, a seaport in Chekiang, after half-an-hour's heavy shelling by 30 warships.

Four raids were made by Bristol Blenheims of the Royal Air Force operating from India, on troop concentrations at Kalembo, in Northern Burma, during the week. While the last raid was in progress another formation successfully attacked Paletwa on the Kaladan River, North of Akyab. Bombers of the U.S. Army Air Forces in India made several raids on objectives in Burma.

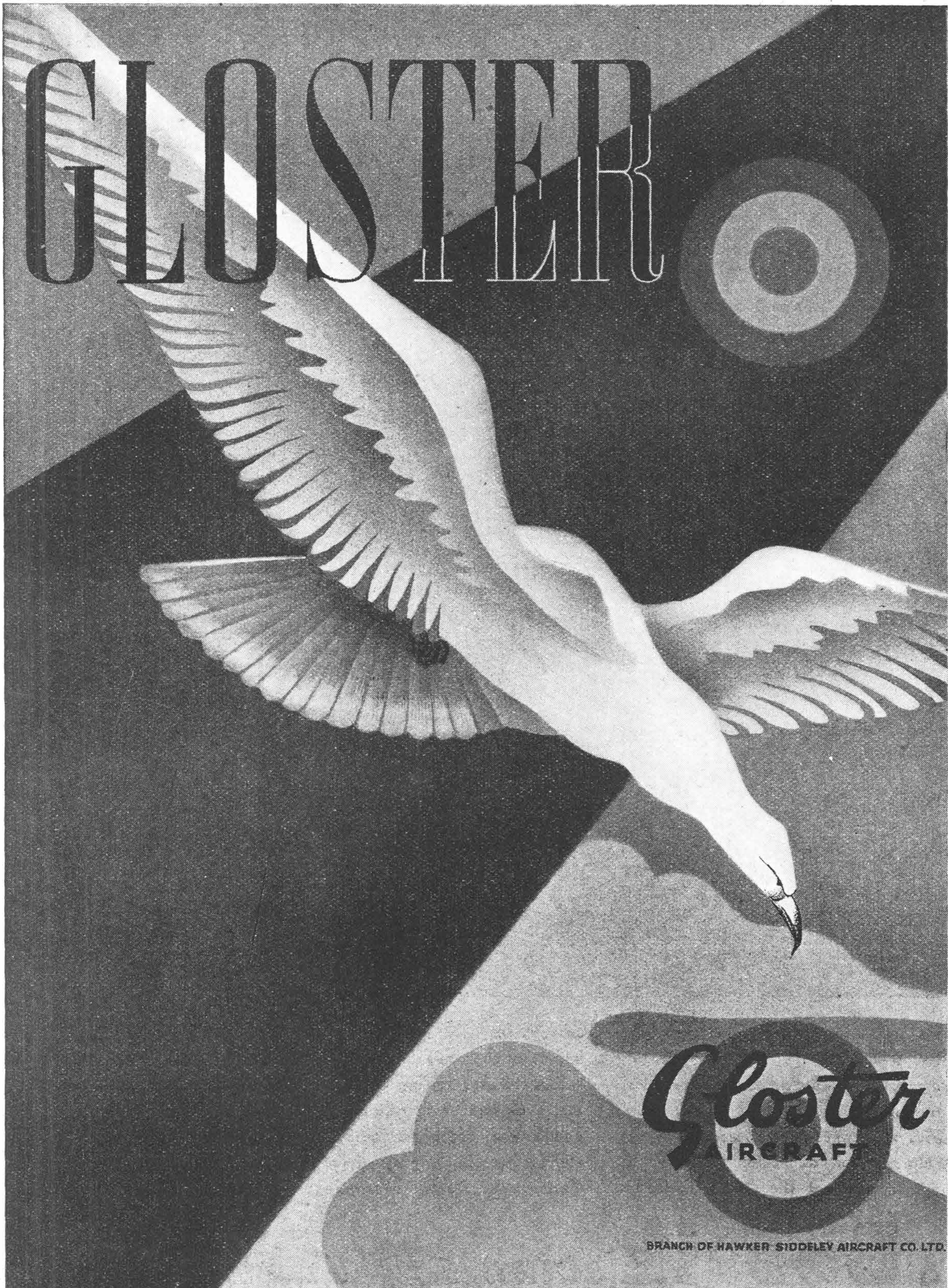
Allied bombers raided Lae and Salamaua (New Guinea), Haleta (in the Solomon Islands), Tulagi (Solomons) and Dilli (Portuguese Timor). The Japanese made a number of raids on Port Moresby but caused little damage. All the raids were intercepted. Japanese raiders also did only slight damage when they raided an aerodrome on Horn Island, which lies off the Cape York Peninsula, the most northerly tip of Queensland. Anti-aircraft guns brought down two enemy raiders at Port Moresby on July 10, and Allied fighters shot down three more on the following day, for the loss of two fighters. Two Japanese fighters were also shot down at a point in New Guinea 110 miles North-east of Port Moresby on July 11.

#### Four Thousand Pounds

Bombs weighing 4,000 lb. were dropped by the R.A.F. in a raid on the important naval base of Wilhelmshaven. This was the first official disclosure that bombs of this size were being used by Bomber Command.



MARE NOSTRUM II.—The S.M.79 falls into the sea.



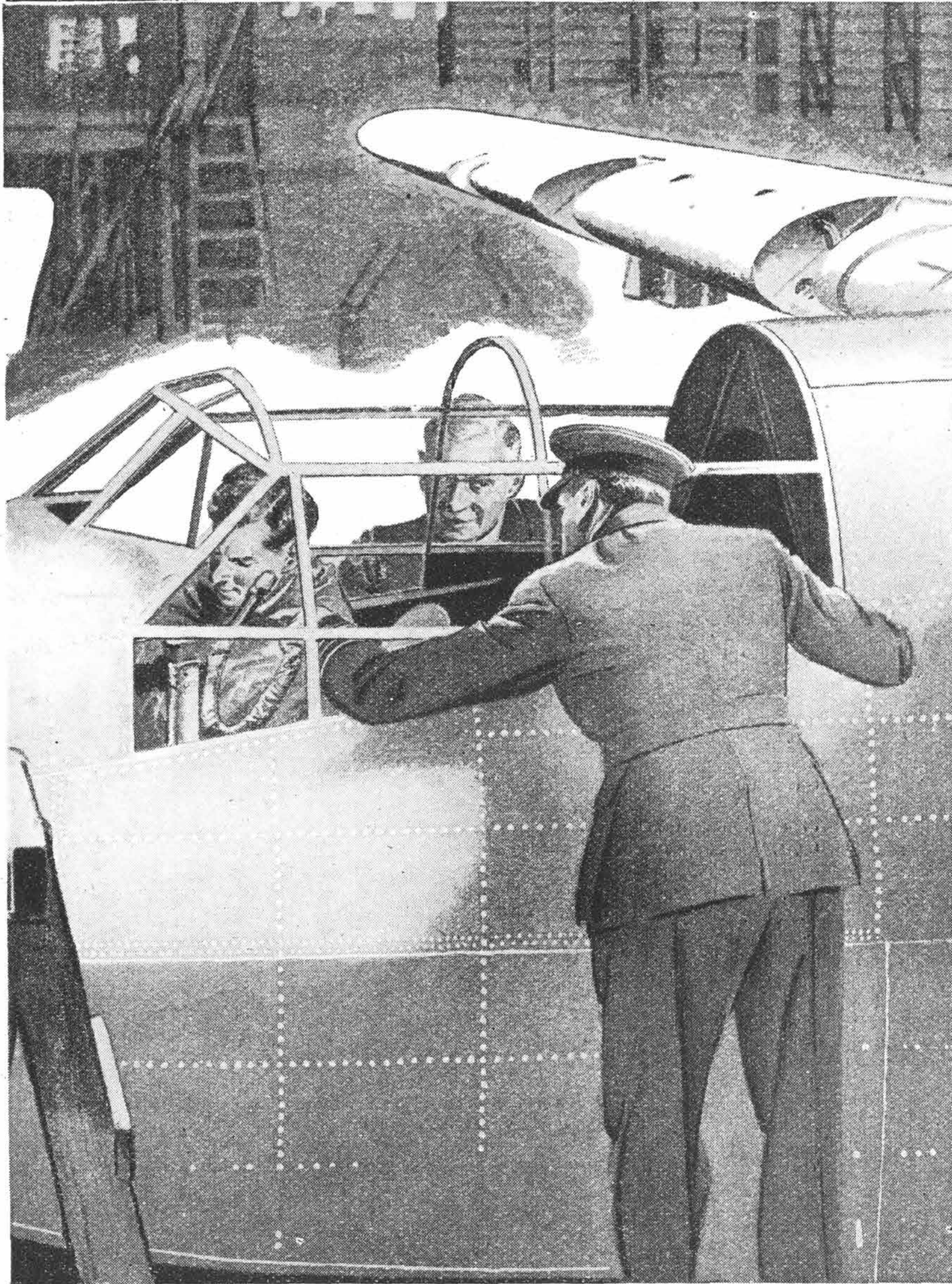
# GLOSTER

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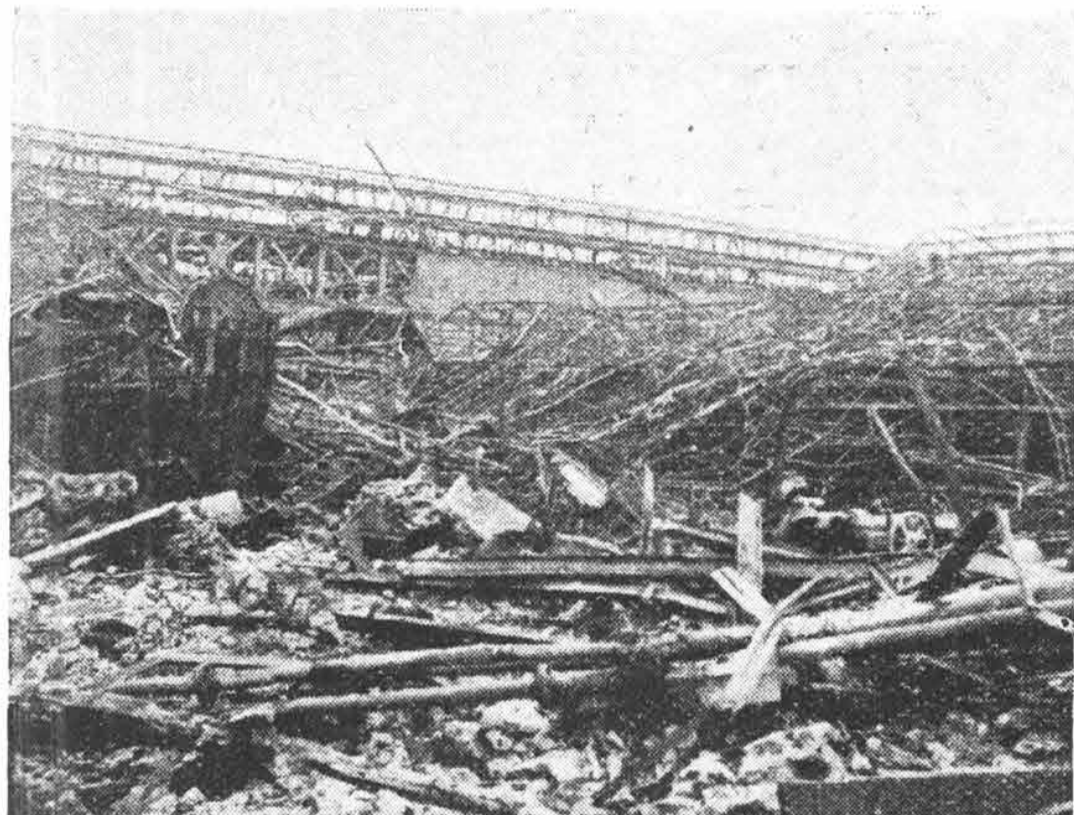
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**IRREFUTABLE PROOF.**—Air photographs taken by R.A.F. reconnaissance pilots had indicated the extent of the damage caused by the R.A.F.'s attack on the famous Renault works near Paris on March 3, this year: this photograph, one of several smuggled to England, confirms how thoroughly the R.A.F. did its job, and gives the lie direct to the German allegations that working-class quarters and residential districts received the major part of the bombs.

The Wilhelmshaven raid was the only large-scale night operation made from Great Britain during the week; widespread electrical storms appeared to be responsible for the curtailment. The weather also interfered with daylight operations of the Home Commands, but on July 11 several squadrons of Avro Lancaster four-motor bombers raided the submarine building yards at Danzig, in daylight, while other bombers made another daylight raid on the shipyards at Flensburg in Schleswig-Holstein. Both attacks were made from low levels. The flight to Danzig and back covered more than 1,700 miles, and the Lancasters now hold the record for the longest daylight raid ever made from Great Britain.

The raiders encountered difficult conditions during their long journey. They set off in formation, but dense clouds and severe thunderstorms forced them to break company at intervals. Icing conditions were prevalent, and violent winds tested the skill of the navigators. A few of the raiders were defeated by the weather and had to return, but the rest got through to deliver what was probably the heaviest blow ever dealt Danzig from the air. The Lancasters bombed from varying heights, but the majority came low. One pilot saw shells passing over his wings and hitting houses on the other side.

Raids on Great Britain by the Luftwaffe were again light, and confined largely to coastal districts. During one, a single squadron of night fighters shot down four raiders. This is the first time for more than a year that the Air Ministry has named the means of destruction of all the bombers shot down during a night's raiding.

A summary of the offensive operations of the Fighter, Coastal and Bomber Commands of the Royal Air Force appears below.

## Diary of the Week

### Offensive Operations of the Fighter, Coastal and Bomber Commands of the R.A.F. From July 5 to 11, 1942.

**Sunday, July 5**

Offensive operations cancelled.

**Monday, July 6**

NIGHT .. Aeroplanes of Bomber Command laid mines in enemy waters. One German night fighter shot down by a bomber. Another destroyed over occupied France by night intruder of Fighter Command. Two R.A.F. bombers lost. One enemy bomber destroyed over Great Britain.

**Tuesday, July 7**

NIGHT .. Mines laid in enemy waters by Bomber Command. Shipping off the Dutch Coast attacked by Coastal Command. Four enemy bombers destroyed over Great Britain by a single night fighter squadron.

**Wednesday, July 8**

NIGHT .. Main target: Wilhelmshaven. Intruder fighters shot down two enemy bombers over their bases. Four R.A.F. bombers lost.

**Thursday, July 9**

DAY .. Two aeroplanes of Coastal Command lost from patrol. NIGHT .. Mines laid in enemy waters. One bomber lost.

**Friday, July 10**

Offensive operations cancelled.

**Saturday, July 11**

DAY .. Several squadrons of Avro Lancasters bombed submarine works at Danzig, in the Baltic. Other bombers made raid on shipyards at Flensburg, Schleswig-Holstein. Three bombers lost.

NIGHT .. Mines laid in enemy waters. Two bombers lost. One enemy raider destroyed over Great Britain.

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
5-7-42	—	—	6	17	—	—	6	8
6-7-42	3	12	10	30	2	13	4	4
7-7-42	4	18	15	18	—	—	9	6
8-7-42	2	10	15	32	4	26	9	10
9-7-42	—	—	7	16	3	15	3	2
10-7-42	—	—	27	34	—	—	13	18
11-7-42	1	5	11	27	5	33	3	3
Totals	10	45	91	183	14	87	47	51*

\* Excludes 13 pilots saved.

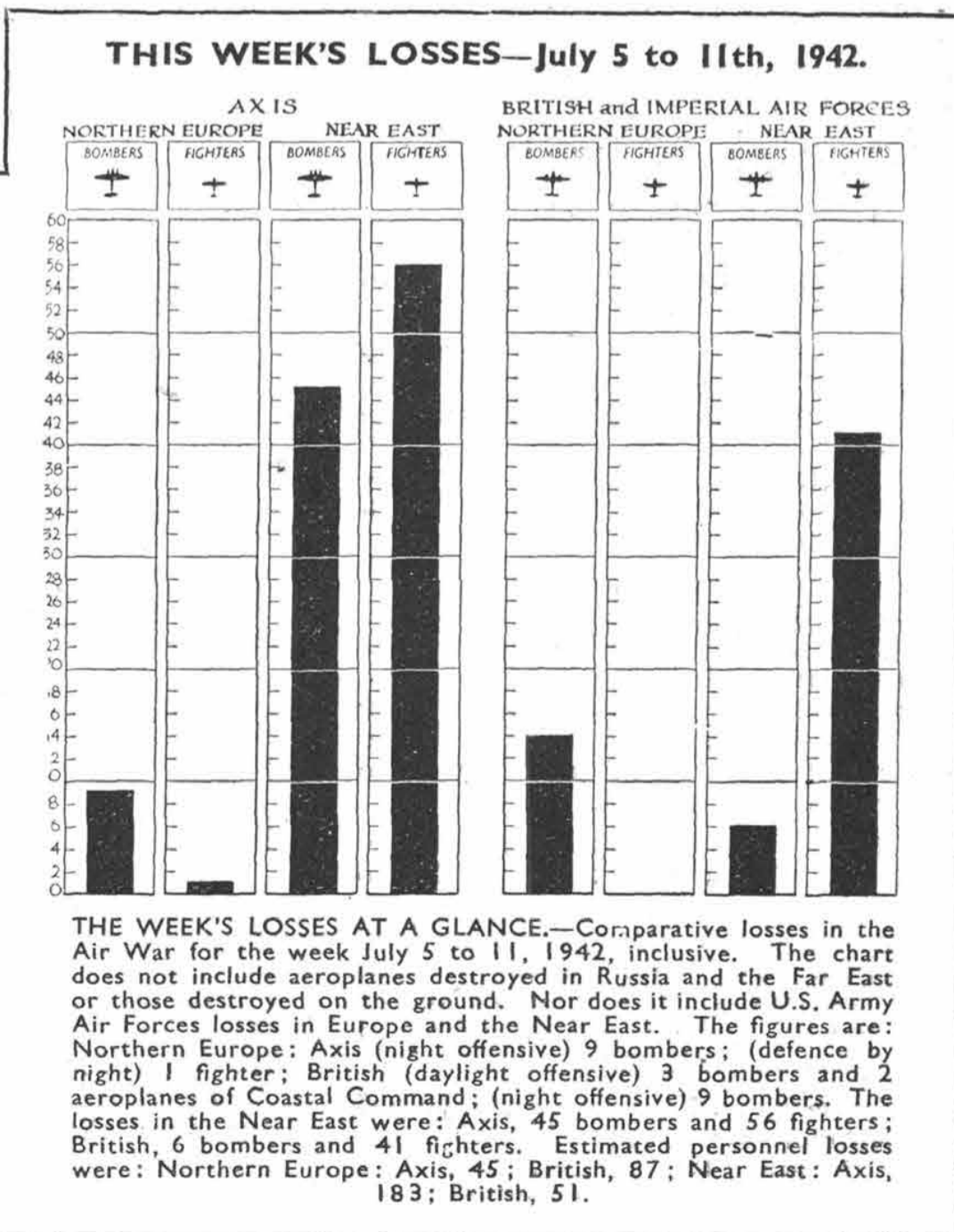
**TOTAL LOSSES IN THE AIR WAR\* (To dawn, July 12).**

	Axis Air Forces	Imperial Air Forces
Machines destroyed in combat or by A.A. gunfire .. .	9,171	5,707
Personnel .. .	24,479	16,568

\* Excluding Russia and the Far East, and U.S. losses in the Far East and other theatres.

**ADDITIONAL AXIS LOSSES**

Two more Ju 87 dive bombers and an Me 109 fighter were destroyed on July 4 in Near East operations.



# NEWS OF THE WEEK

**MR. CHURCHILL** stated in the House of Commons on July 7 that on Oct. 7, 1941, he gave a ruling that when the Military Commander-in-Chief announced that a battle was in prospect the Air Officer C.-in-C. would give all possible help, irrespective of other targets, however attractive. The Army C.-in-C. would specify the targets and tasks he required to be performed, both in the preparations for the attack and on the rearward installations of the enemy, and for the air action during the progress of the battle. The A.O.C.-in-C. would use his maximum force for those objects. This ruling applied not only to those squadrons assigned to the Army but to the whole of the Air Force available.

Mr. Churchill also announced that the joint training of the Army and Air Force was being extended continuously and that the Army Co-operation Command was being expanded and was solely occupied with this training. In addition, squadrons of Bomber and Fighter Command were regularly used for that purpose.

**Lancaster bombers** of the R.A.F. made a daylight attack on Danzig on July 11. This is the longest daylight operational flight—1,700 miles—so far made by the R.A.F. A smaller force of bombers also raided the Baltic port of Flensburg. The Lancasters flew through thunderstorms and thick cloud. Only three machines were lost in the two operations.

**Mayotte**, a French island in the Mozambique Channel, was officially announced on July 9 to have been occupied by British forces on July 2.

**Bombs weighing 4,000 lb.** were dropped by the R.A.F. on Wilhelmshaven on July 8. This was the first official disclosure that bombs of this size are being used by the R.A.F.

**China** entered its sixth year of war with Japan on July 7.

**Malta** had its 2,700th air raid alert on July 8. During the preceding 24 hours 21 Axis aeroplanes were destroyed over the island.

**Parachute** troops were used in operations for the first time in India on July 9 as part of the punitive expedition against the Hurs of Sind. A strong detachment drawn from an Indian parachute unit, and led by a British officer, was dropped.

**On July 10** figures of Axis losses in the Middle East for the past six weeks were given as 284 aeroplanes destroyed and many more damaged. Of the total of confirmed losses 134 were shot down in air combats, 50 were destroyed by anti-aircraft fire and at least 100 were destroyed on the ground.

**In 1941** Great Britain sent nearly 10,000 aeroplanes and 3,000 tanks to overseas battlegrounds, according to Lt.-General G. N. Macready, head of the British Army Staff in the U.S.A., in an address at the opening of an exhibition of British war weapons at Washington on July 6.

**In the House of Commons** on July 2 Mr. Churchill stated that in two years Great Britain, the Empire and the U.S.A. had sent 6,000 aeroplanes and 4,500 tanks to the Middle East.



**U.S. AIR CHIEF IN LONDON.**—Major-General Carl Spaatz, D.F.C., D.S.C., who is in command of the units of U.S. Army Air Forces in Europe, is now in London. He is 51.

**Brigadier-General Ira C. Eaker** has been appointed to command the bomber squadrons of the U.S. Army Air Forces in Europe. He took up his duties on July 11.

**Major-General Dwight Eisenhower**, Commander of the U.S. Forces in the European theatre, is to be promoted to the rank of Lieutenant-General.

**Changes** are to be made in the location and capacity of many of the air training schools operating under the British Commonwealth Air Training Plan in Canada. The changes are to increase the output of trained observers and navigators whose numbers are to be approximately doubled. The capacity of existing air observers schools is to be enlarged, which will increase the air traffic at the schools. Because several observers schools are close to elementary flying training schools the new plans call for several E.F.T.S. to be disbanded. To compensate for this arrangement the size of the remaining E.F.T. Schools will be increased.

**Two new French seaplanes**, prototypes of a new design, have been built at Toulouse, according to the Vichy Radio. The seaplanes were built under



**ON THE WASP.**—P/O S. A. Smith (centre) receiving the congratulations of Cmdr. Dickey (left), Executive Officer of the U.S. Aircraft Carrier Wasp, and Flight Lieut. Sly, of the R.A.F. (right), aboard the Wasp in the Mediterranean, for his spectacular landing on the deck of the Wasp with a Spitfire after engine trouble forced him to return to the aircraft carrier after taking off.

the Air and Naval Reconstruction programme which was decided upon after the collapse of France. The seaplanes are to be tested at Marignane, where other aeroplanes are said to have been sent for assembly and testing.

**Moscow radio** announced on July 5 that a new town with several factories for making aeroplanes was built on the bare steppes of Russia during the past Winter. The town has been named Avigrad.

**A memorial** is to be unveiled at St. John's, Newfoundland, in August to mark the site from which Alcock and Brown took off on the first direct crossing of the North Atlantic by air in 1919.

**U.S. pilots** are ferrying heavy and medium bombers direct from American territory to Australia, according to an announcement from an operational base in Australia on July 1. Also, men, materials and mails are flown by transport aeroplanes to outposts of the U.S. Army.

**A rocket apparatus** used by defensively armed British merchant ships for use against attacking enemy aeroplanes was mentioned on July 7. It shoots into the air long wires to which are attached a parachute so that they remain in the air for some time. The rocket if well directed compels the enemy bomber to swerve from its course or become entangled in the wires and crash.

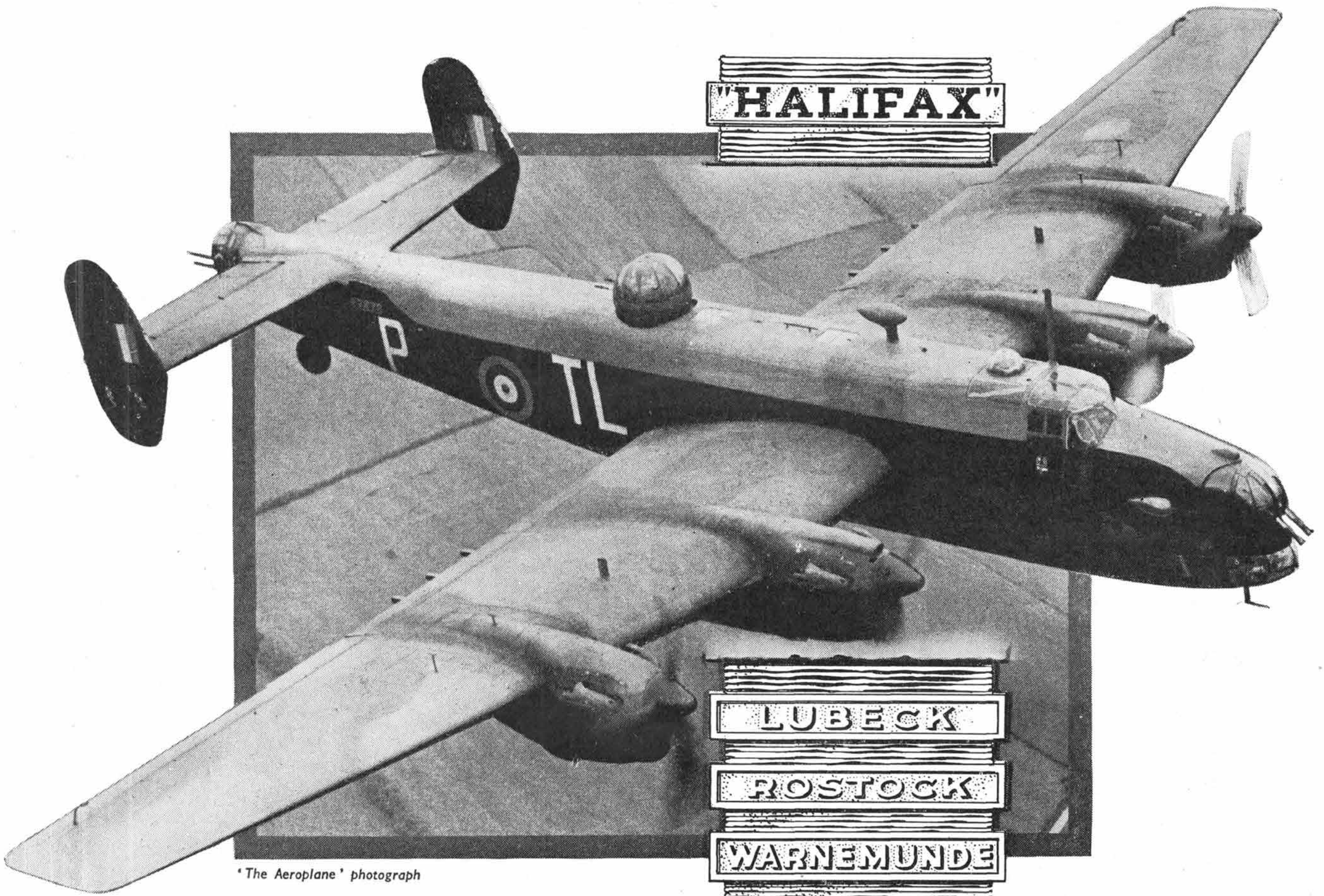
**A civilian crew** of the R.A.F. Ferry Command was stated on July 11 to have flown the Atlantic five times in nine days in the same Liberator on the Montreal-Great Britain route. The flights were to supplement the Return Ferry Service. After 72 hours' rest for routine overhaul of the Liberator, the crew flew back to Montreal, their sixth crossing in less than two weeks. The crew is normally engaged in ferrying American-built heavy and medium bombers to Great Britain and has to its credit more than 500 hours of trans-ocean flying in the past 90 days. Their flights took them over both the Atlantic and the Pacific and included eight journeys to and from Australia.

## Service

**AIR CHIEF MARSHAL SIR CHARLES BURNETT**, who recently returned from Australia after relinquishing his post as Chief of the Air Staff, R.A.A.F., has been placed on the retired list.

**As from July 13** the work hitherto done by the headquarters of the Air Training Corps has been transferred to the Air Ministry. Under the reorganisation Air Commodore J. A. Chamier, Commandant of the A.T.C., has been appointed to the newly created post of Inspector of the Air Training Corps, on the staff of the Air Member for Training at the Air Ministry. A Regional Commandant for London has been appointed and Air Chief Marshal Sir William Mitchell, K.C.B., C.B.E., D.S.O., M.C., A.F.C. (ret.) has accepted the post.

**The first all-Czecho-Slovak** fighter squadron of the R.A.F. celebrated its second birthday on July 12. On its formation the squadron was equipped with Hurricanes, but has since been re-equipped with Spitfires. The squadron has destroyed 43 enemy aeroplanes.

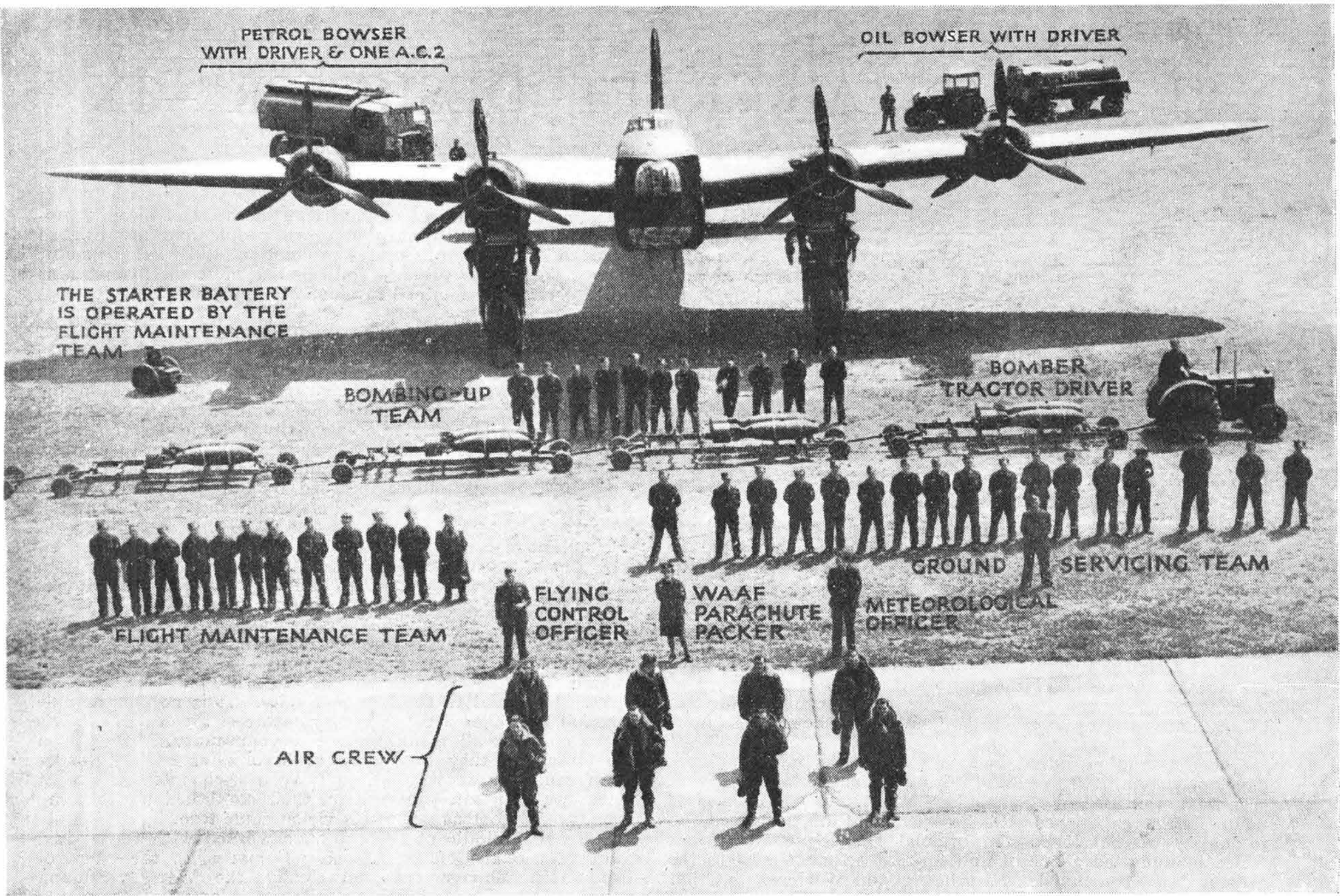


'The Aeroplane' photograph

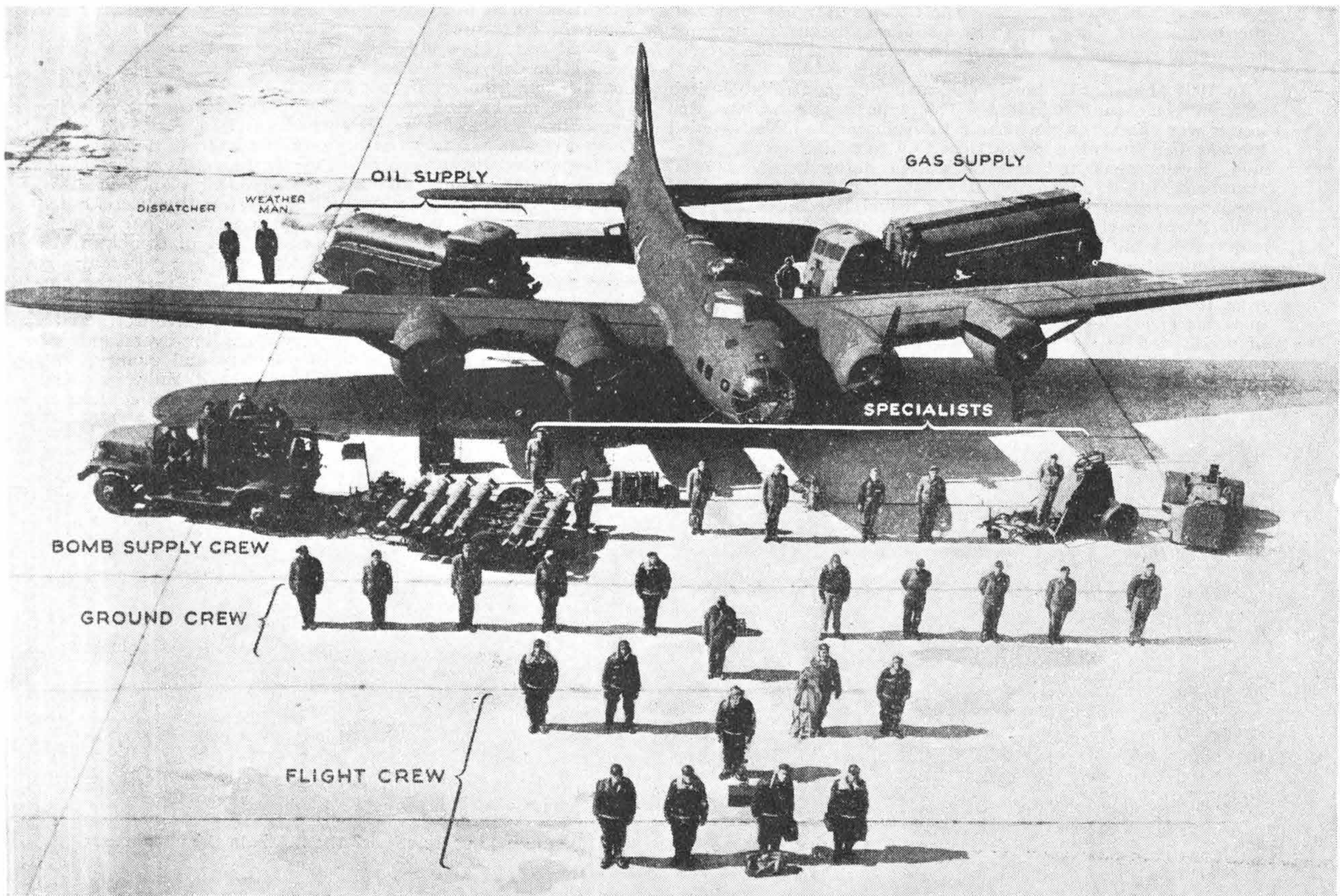
H A N D L E Y - P A G E L I M I T E D L O N D O N



THE BRITISH POWER BOAT COMPANY LTD.



THE MONSTERS AND THEIR KEEPERS.—The amount of equipment and stowage necessary and possible in modern heavy bombers is not generally realised. These photographs of the Stirling (above) and the Fortress II (below) give an idea of the number of air crew, ground crews, fuel and oil suppliers and bomb loads needed to operate one machine on one sortie. The comparison is not strictly correct as not all the essential personnel are shown in the lower photograph.



# "I AM AN AIRCRAFT DESIGNER"—IX

By T. P. Wright, Vice-President, Engineering, Curtiss-Wright Corporation.

*A Talk given in the Forces Programme of the B.B.C. on Monday, June 29, 1942.*



Mr. T. P. Wright.

LET ME FIRST EXPRESS my appreciation of the honour of having been selected to speak to you as a representative of American aircraft designers. War changes the lives of all of us. My own entry into Aviation was occasioned by the last War, when, just after completing my education as an architectural engineer, I joined the United States Naval Reserve Forces in 1917 in aviation. Engineering courses completed in school were supplemented by an intensive course in the Navy, dealing with aeronautical

subjects. Inspection duty, to which I was assigned, gave me considerable shop experience.

I was fortunate, soon after the War, to have the assignment of inspecting the N.C. flying-boats, and assisting in their preparation for the first trans-Atlantic flight, completed in May, 1919, by the N.C.4. The Curtiss Aeroplane and Motor Company employed me in 1921 as an executive engineer, and in 1925, made me Chief Engineer of the Aeroplane Division.

Mentioning some of the aircraft designs that we developed, I want to make clear the point, that no aircraft from the standpoint of design is the creation of any one man. Great designs are usually the result of the combined efforts of a number of men working harmoniously together, each contributing his bit. I share with my associates any credit for the success of our design.

Our outstanding initial successes were the racing 'planes developed from 1921 to 1927, during which period they won successive Pulitzer and Schneider Trophy races. From this racing-design experience, this improvement of the breed, so to speak, we developed the original Hawk pursuit 'plane, which inaugurated a line of fighters that has continued to the present day—Tomahawks, Kittyhawks and Warhawks. Other types include the Tanager, prize-winning design in the Guggenheim safe aeroplane competition in 1930; the Curtiss Robin, a civil type widely used in America; the Helldiver, one of the first dive bombers; the Condor, the first twin-engined 'plane to fly successfully on one engine, and which in its commercial version first carried bunks and was used regularly fitted as a sleeper 'plane on trans-Continental service. A more recent development is the Condor III, now renamed the Commando, a large twin-engined cargo 'plane, just getting into production, that will play its part in the present War.

In 1927, I initiated the development of a controllable-pitch airscrew electrically actuated. This type is now widely used in our war effort. Other technical developments have included the so-called smooth wing surfaces to attain high speed, extensive development and use of slotted aerofoils and special arrangements of supercharged cabins for high flying, and numerous structural innovations for reducing weight. In 1931, while I was employed by the Curtiss-Wright Corporation, the emphasis of my interests shifted somewhat from design and engineering to production. Trips to Europe, involving visits of inspection to factories in England, France, Germany and Italy, from 1934 to 1938, showed the need for considering production in terms greatly expanded from previous concepts. The scale of production in Germany at that time was so much greater than existed in France, England or America, as to warrant an alarm difficult to instil in those who had not seen it.

My production studies, particularly in America, resulted in an address in November, 1938, before the Royal Aeronautical

Society on the subject of American methods of aircraft production. I tried to warn my own people and my English friends of the scale of German production, and what, to me, it clearly portended. But in spite of this more recent emphasis on production, I retained my love of engineering and development.

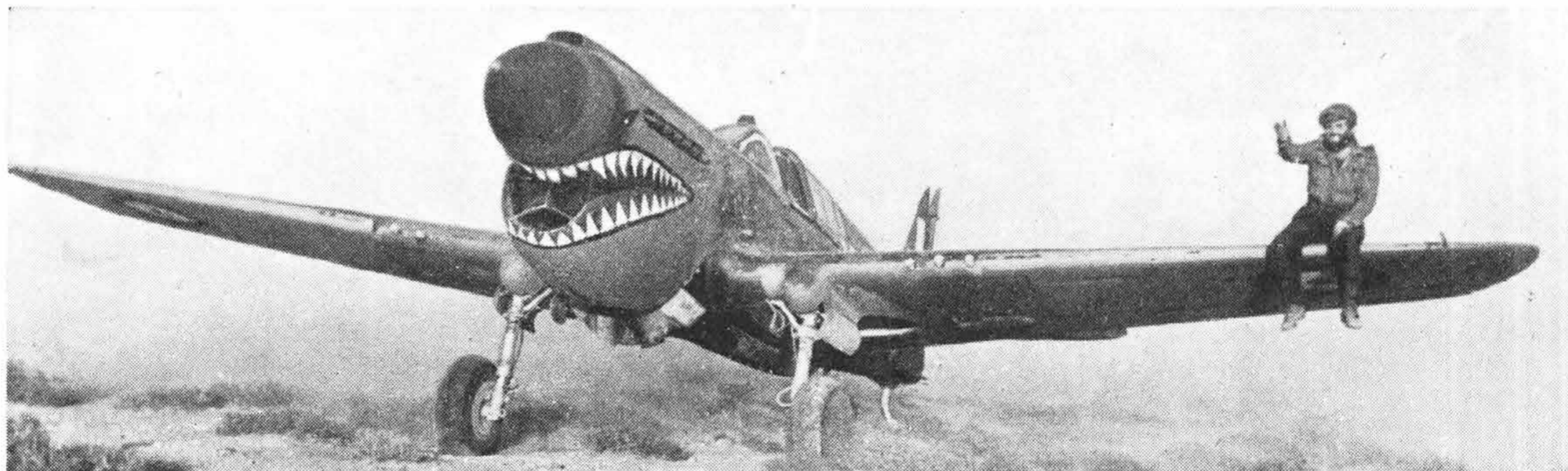
An opportunity to keep abreast of scientific advance has been afforded by meeting with committees of the United States National Advisory Committee for Aeronautics, involved in studies of aeronautical problems and tests conducted in the great research laboratories of the Committee. In scientific research work, it is well occasionally to consider the social implications of science. We should insist on a scientific approach to science itself. We must make sure that civilisation is advanced and not retarded by our scientific progress. Eventually the aeroplane must be a tool of peace, not a weapon of war.

Here, let me quote from an Englishman, William S. Henson, who almost exactly 100 years ago, invented an "Aerial Steam Carriage," remarkable for the close approximation in many of its details to modern aircraft. Here is how he envisaged the effect of his invention: "The changes which must follow the first aerial voyage of 100 miles in length must be great—may be astounding to our present notions—may be dashed as all human advances are with subtractive evils, but they must be largely beneficial to the human family. It is no considerable omen of future good that the very nature of the design compels us to consider all mankind as one community. When men are strangers, they are ready to become enemies. Render them mutually acquainted, and when their interests are at stake, we may safely reckon on their continued and abiding friendship." Let us make this vision come true.

Since the middle of 1940, I have worked with the United States National Defence Advisory Commission, the Office of Production Management and finally the War Production Board. Here I would like to call particular attention to the co-operative nature of our work with the British Air Commission in America, where, for more than a year and a half, representatives of that body have sat with representatives of our Air Forces, Navy Bureau of Aeronautics and War Production Board at weekly meetings of a Joint Aircraft Committee to discuss and render decisions on common problems involving allocation of deliveries, and standardisation of design of American-built aircraft. This is of vital importance in fighting a global war. How I wish I were permitted to divulge actual production delivery figures! They would, I assure you, greatly comfort our friends and dismay our enemies.

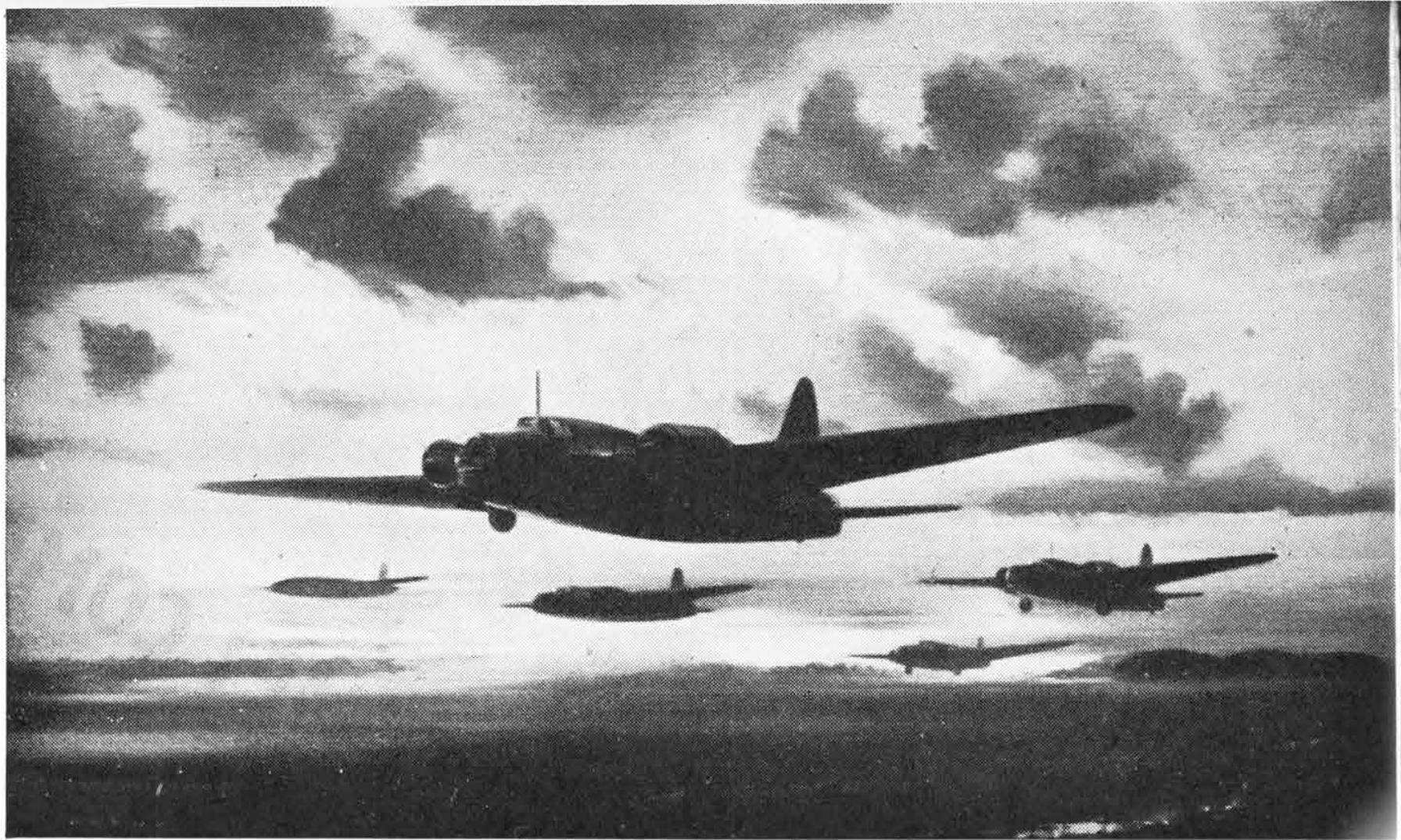
In the mechanised warfare we are experiencing, surely the foundation of victory is production, and in that, we excel. Our success in meeting our programmes has warranted raising our targets to delivery figures set by the President of the United States, 60,000 planes in 1942, and 125,000 planes in 1943. Certainly, the rate of output of aircraft by the United Nations is now substantially greater than that of our enemies. A year hence, in rate of delivery and size of combined Air Forces, we will predominate by two to one.

We are going to win this civil war of humanity—this revolution of the common people, as the Vice-President of the United States puts it, or again, this fight between a slave world and a free world. We are going to win by obtaining overshadowing superiority in Air Power in both quantity and quality. We will have many more Colognes, Essens, and Midways. Our moral is high. Our United Peoples have the confidence, courage and zeal to accomplish the necessary task.



DESERT CHAMPION.—A Curtiss P-40D Kittyhawk (One Allison V-1710-F motor) in service with the R.A.F. in the Middle East.

FINE ART PRINTS IN  
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**SERVICE  
AIRCRAFT**



**I**N response to many requests the Aircrew Division of The de Havilland Aircraft Co., Ltd., has arranged for the production of a limited edition of fine art prints in the artist's true colourings of a series of six oil paintings by Frank Wootton which now hang at the Headquarters of Fighter, Bomber and Coastal Commands. These prints are to be sold for the sole benefit of the R.A.F. Benevolent Fund, and the series comprises :

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.

*Each print measures approximately 17 ins. x 12 ins.*

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Single copies of any subject	...	...	£2 2s. 0d. post free
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*NOTE—50% of the purchase price is given immediately to the R.A.F. Benevolent Fund and of the remainder, after actual cost of printing and distribution has been recovered, the balance will, in addition, be handed over to the Fund.*

These prints will be eagerly sought for the decoration of R.A.F. messes; they make ideal gifts to members of the flying forces and will be much appreciated by all concerned with aviation.

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**The Royal  
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## ARADO DESIGNS



The Arado Ar 80.



The Arado Ar 81v3 (with single fin and rudder).



The Arado Ar 81v2 (with twin fins and rudders).

### The Arado Ar 80

THE ARADO Ar 80 is an obsolete single-seat fighter now used for advanced training in the Luftwaffe. It was built in 1934 and was originally powered with a Rolls-Royce Kestrel motor. It is now flying with a Jumo 210-C motor of 610 h.p. The Arado 80 has a fixed cantilever spatted undercarriage and gull-type wing.

DIMENSIONS.—Span, 39 ft. 2 ins.; length, 33 ft. 7 ins.; height, 8 ft. 9 ins.; wing area, 245 sq. ft.

WEIGHTS.—Empty, 3,620 lb.; loaded, 4,630 lb.

PERFORMANCE.—Maximum speed, 264 m.p.h. at 13,100 ft.

### The Arado Ar 81 Dive Bomber

THE Ar 81 two-seat all-metal dive bomber was developed and built in 1935-36. There were three prototypes: the V 1 and V 2 with twin-rudders and raised cockpit, and the V 3 with single rudder and unbroken fuselage lines. It is an N-strutted, wire-braced biplane with positively staggered wings. Its motor is the 610 h.p. Jumo 210-C.

DIMENSIONS.—Span, 36 ft. 9 ins.; length, 38 ft. 6 ins.; height, 11 ft. 9½ ins.; wing area, 383 sq. ft.

WEIGHTS.—Empty, 4,235 lb.; loaded, 6,754 lb.

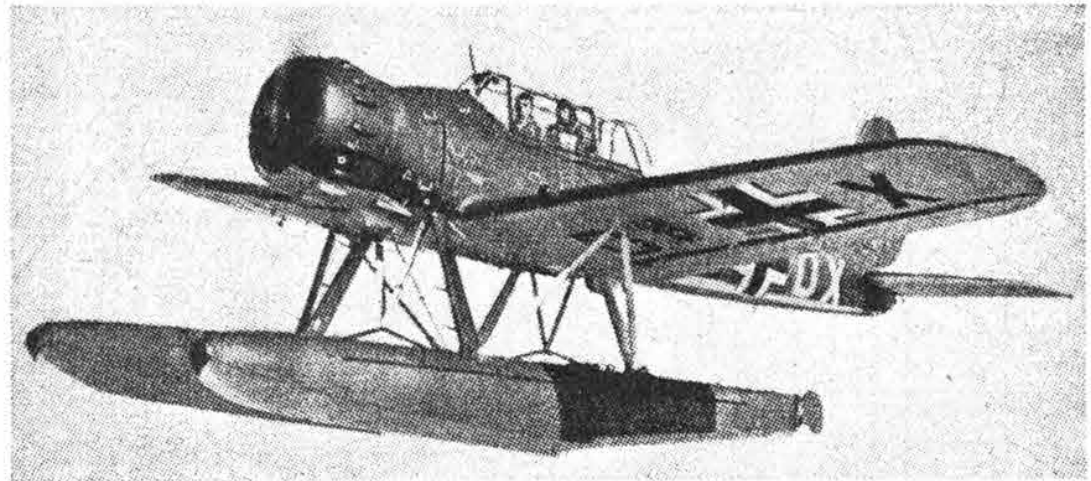
PERFORMANCE.—Max. speed, at sea level 186 m.p.h.; at 13,120 ft. 214 m.p.h.; landing speed, 60 m.p.h.; maximum diving speed, 372 m.p.h.; climb to 13,120 ft., 11½ mins.; ceiling, 25,260 ft.; range, 430 miles at 171 m.p.h.

### The Arado Ar 196

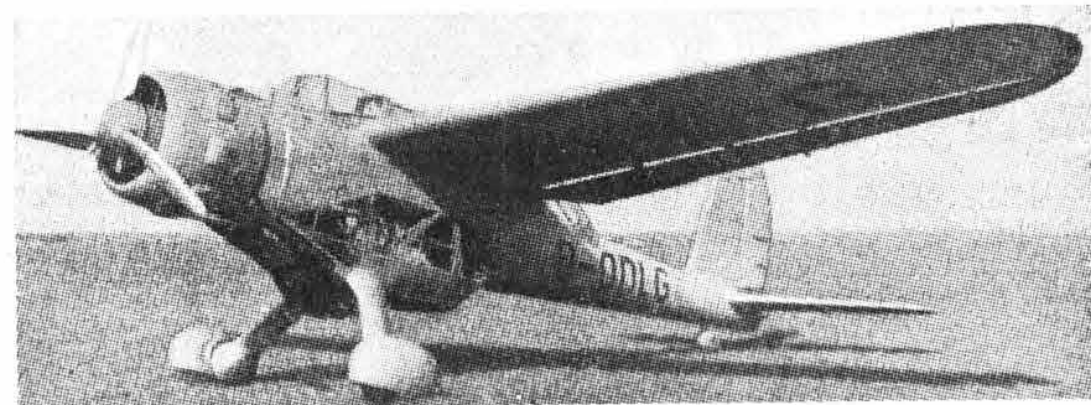
THE Ar 196 is a two-seat, all-metal, cantilever, multi-purpose floatplane which can also be used as a ship-borne catapult reconnaissance-bomber. The wings have rounded tips and fold backwards. The front part of the fuselage, which is circular, is covered with stressed metal skin; the rear part, which is of oval section, is fabric covered. The structure is of welded tubing. The tail unit is also cantilever. The fins are metal-covered; rudder and elevator are covered with fabric. The interchangeable twin floats are strut-braced to the fuselage.

The following are the main particulars:—

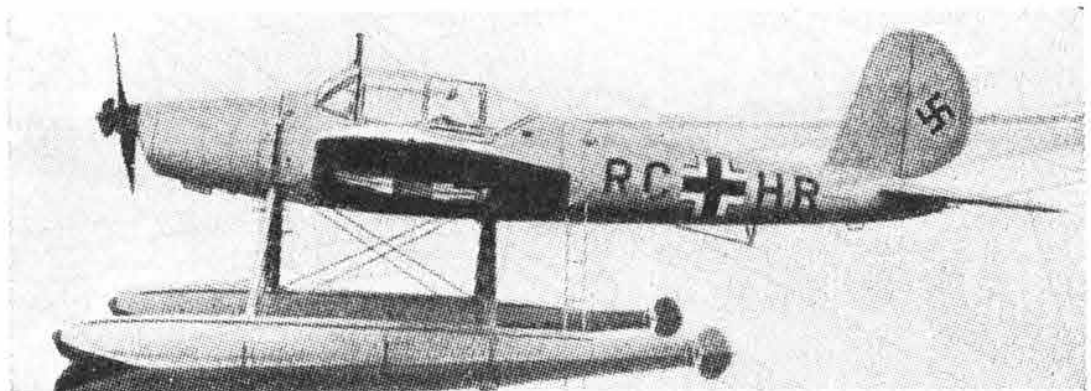
MOTOR.—900 h.p. BMW 132K, with supercharger and fuel-



The Arado Ar 196.



The Arado Ar 198.



The Arado Ar 199.

injection pump, driving three-bladed variable-pitch airscrew with wooden blades. N.A.C.A. motor cowling.

ARMAMENT.—Machine-guns and cannon; bomb racks under the wings.

DIMENSIONS.—Span, 40 ft. 10½ ins. (with wings folded, 15 ft. 9 ins.); length, 36 ft. 1 in.; height, 14 ft. 6 ins.; wing area, 306 sq. ft.

WEIGHT.—Empty, 4,545 lb.

### The Arado Ar 198

THE Ar 198, a tactical and battle reconnaissance aeroplane, was developed and built in 1938. It is a cantilever shoulder-wing monoplane. The front part of the fuselage is of welded metal tube, the rear being all-metal monocoque. For photographic reconnaissance a small or medium-sized camera can be installed. The windscreen and side panels are made of splinter-proof glass; all the other panels are of Plexi glass.

MOTOR.—830 h.p. Bramo 322-A.

DIMENSIONS.—Span, 48 ft. 10 ins.; length, 38 ft. 8½ ins.; height, 14 ft. 9 ins.; wing area, 378 sq. ft.

### The Arado Ar 199

THE Ar 199 is a two-to-three-seat cantilever, low-wing, all-metal catapult floatplane and is mainly used by the Luftwaffe for the initial training of seaplane crews. The front part of the fuselage is of metal tube, the rear part of monocoque construction, and both parts can easily be detached for repairs.

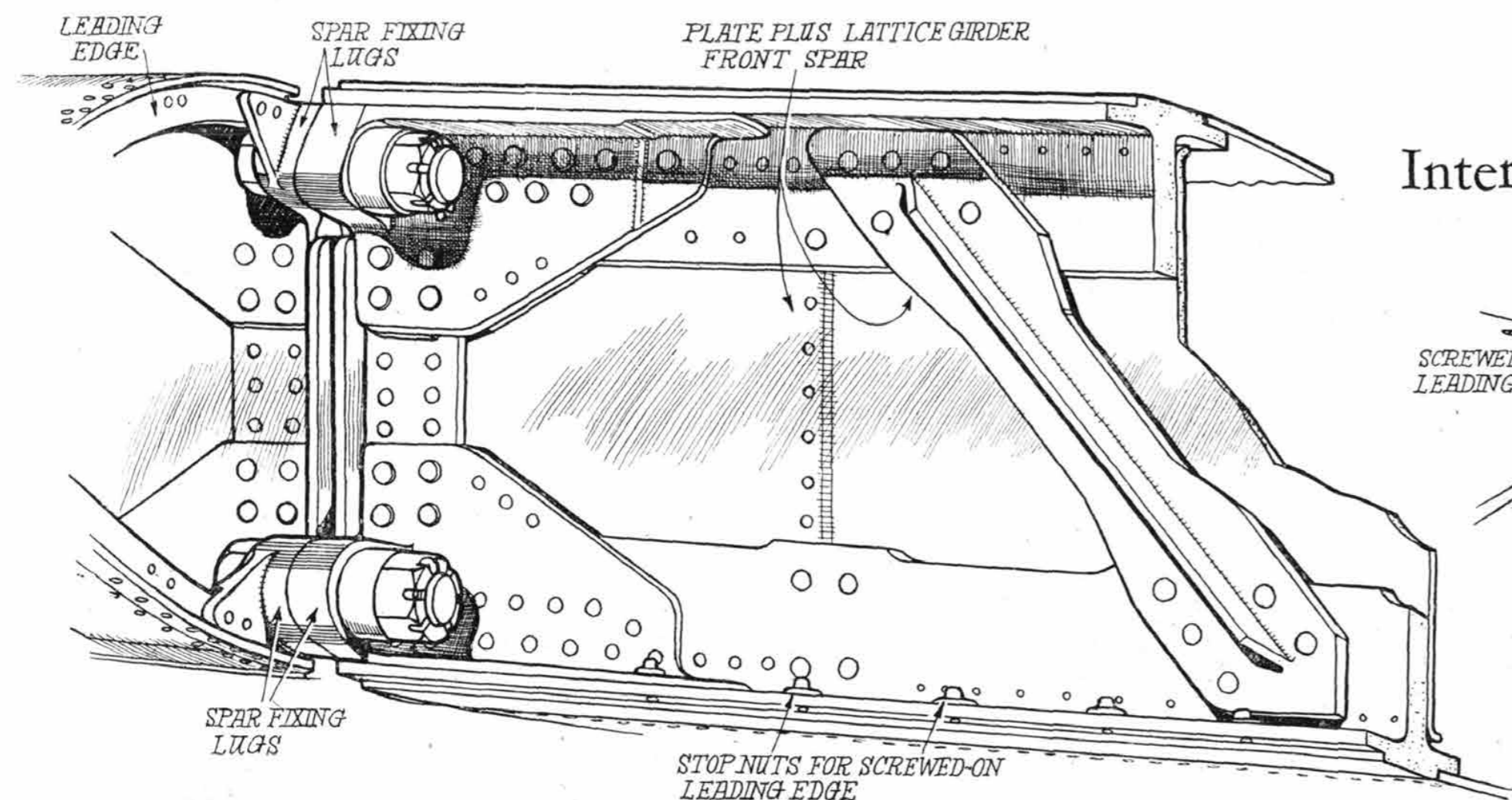
MOTOR.—450 h.p. Argus As 410-C.

DIMENSIONS.—Span, 41 ft. 6½ ins.; length, 34 ft. 6½ ins.; height, 14 ft. 4 ins.; wing area, 327 sq. ft.

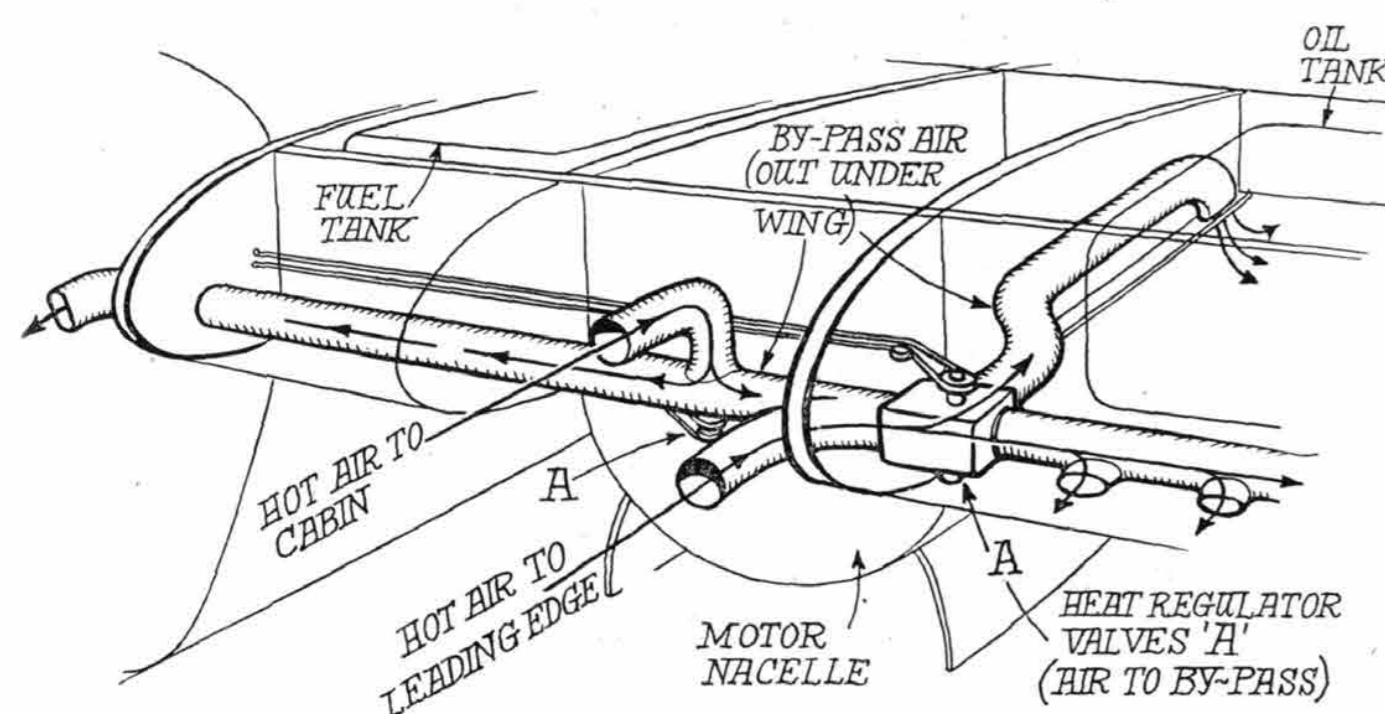
PERFORMANCE.—Max. speed, 141 m.p.h. at sea level; 217 m.p.h. at 9,840 ft.; landing speed, 50 m.p.h.; climb to 9,840 ft. in 11 mins.; ceiling, 21,720 ft.

# DORNIER DETAILS

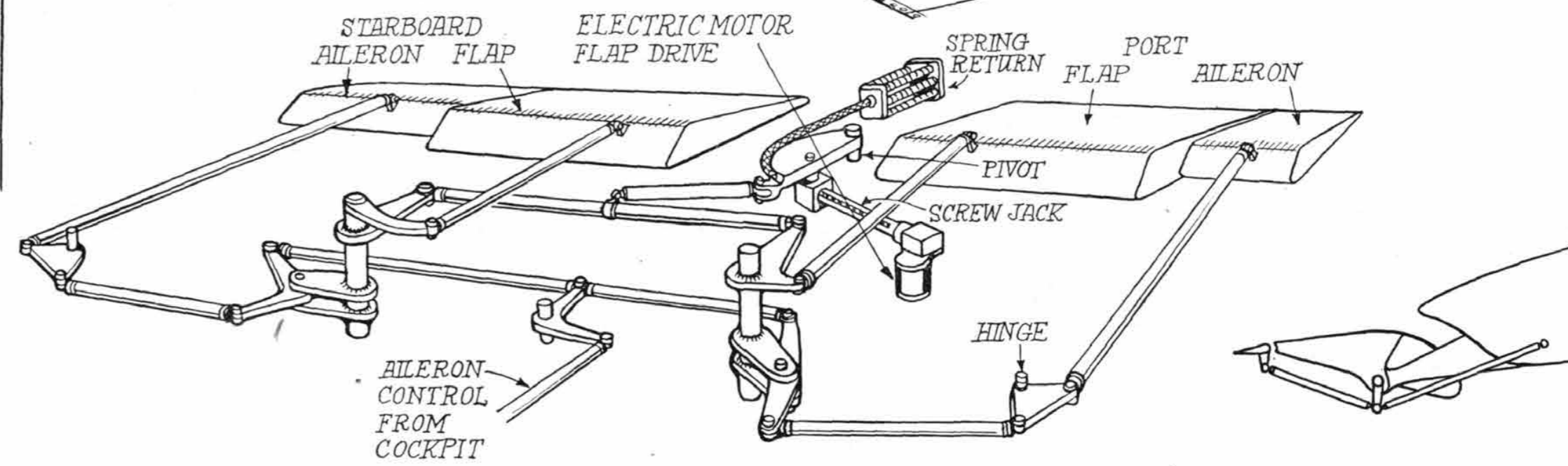
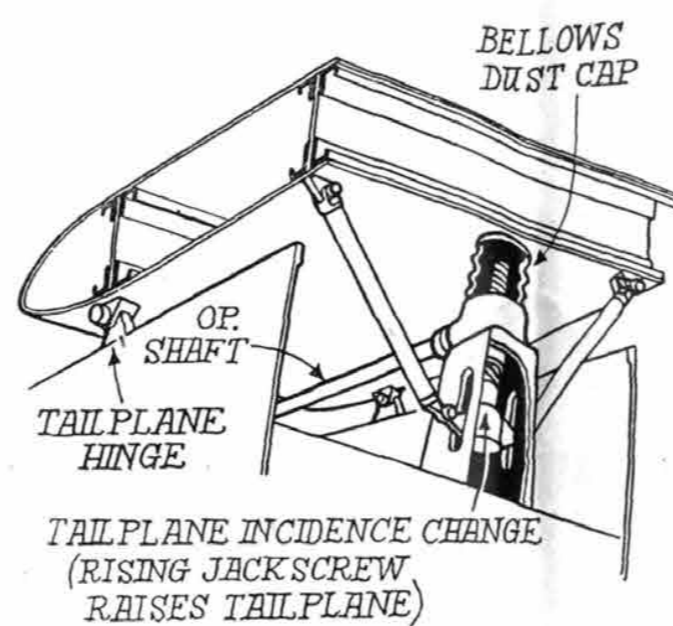
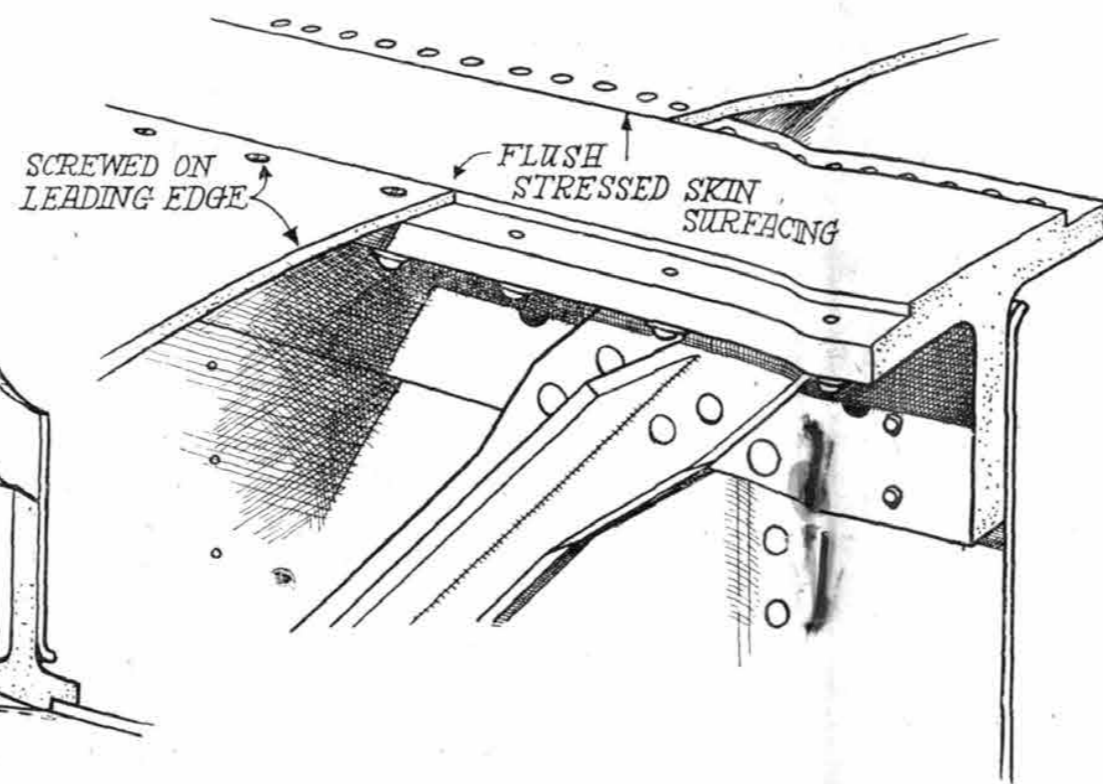
Interesting Structural Details of the Dornier Do 217E



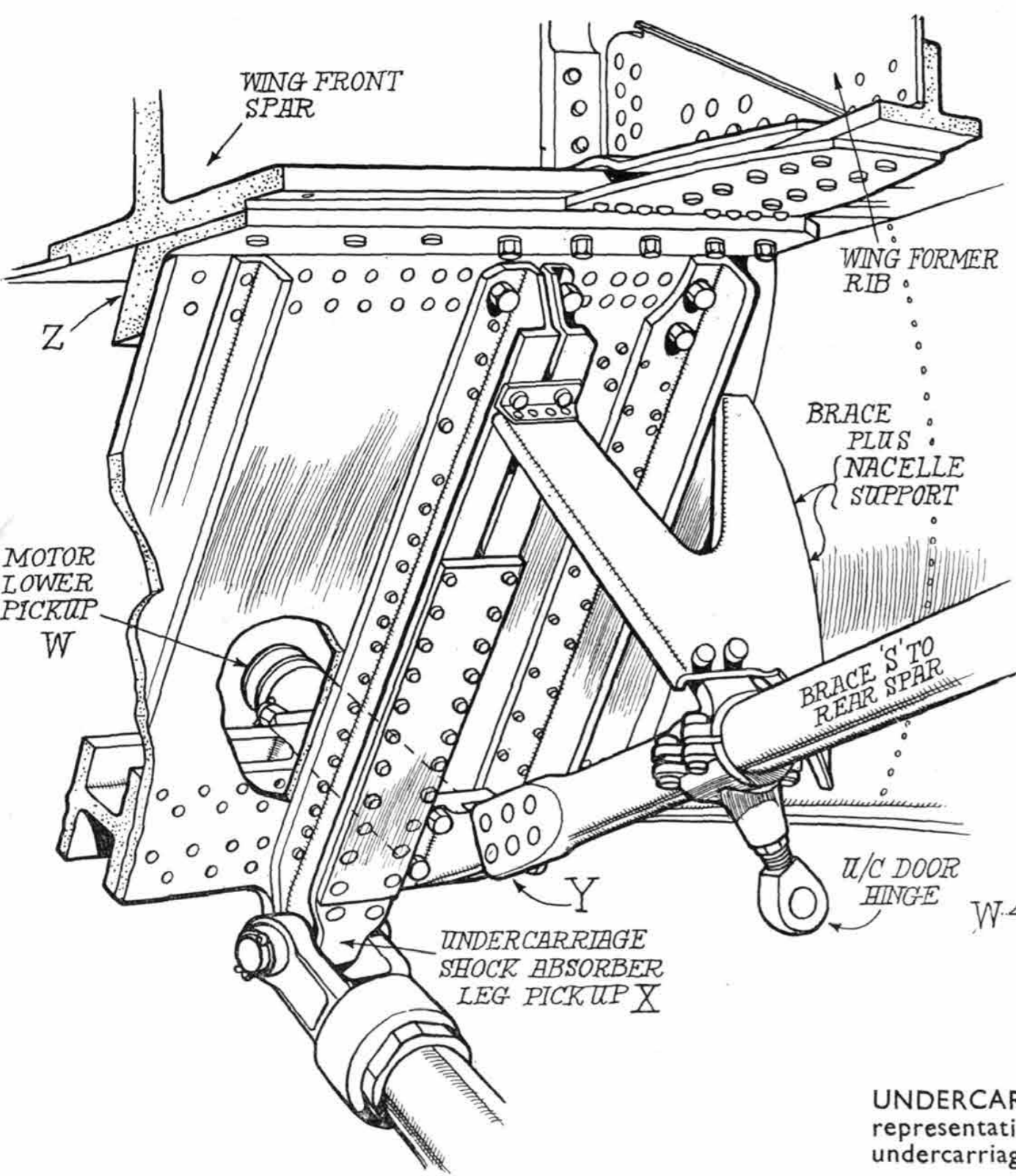
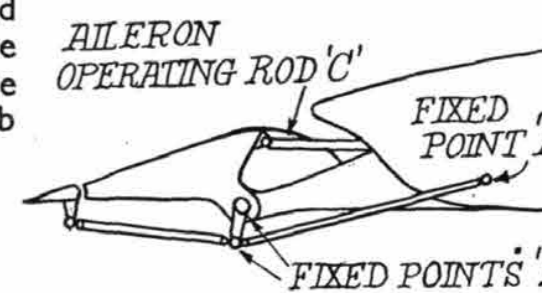
WING CONSTRUCTION.—(Top left) Details of the front centre-section spar and pick-up on outer wing. (Top right) How the flange of the spar is arranged flush with the wing surface to give the greatest depth of web.



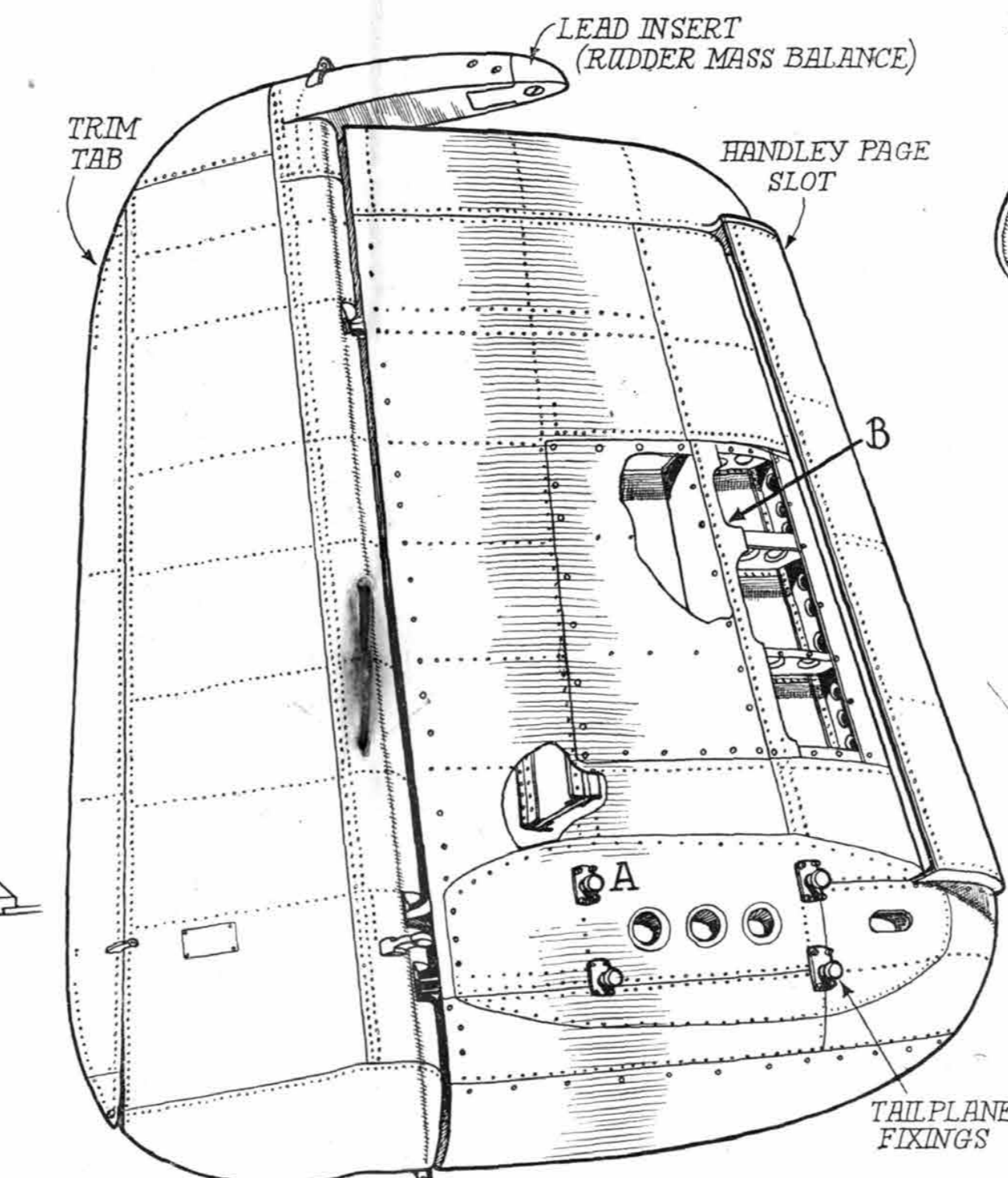
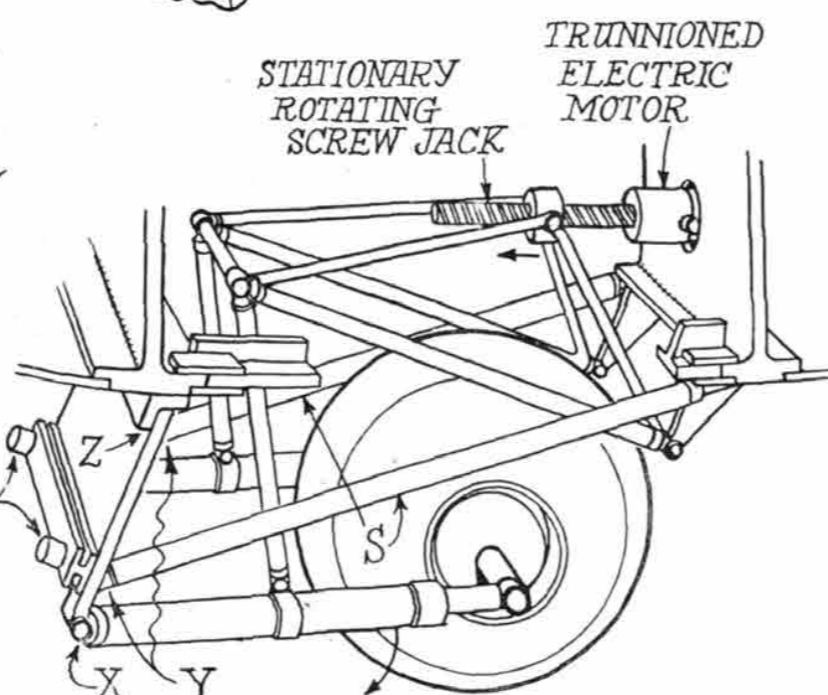
THE HEATING SYSTEM.—(Left) A diagrammatic sketch to show how the hot air from the exhaust muffs is taken to warm the cabin and leading-edge de-icers.



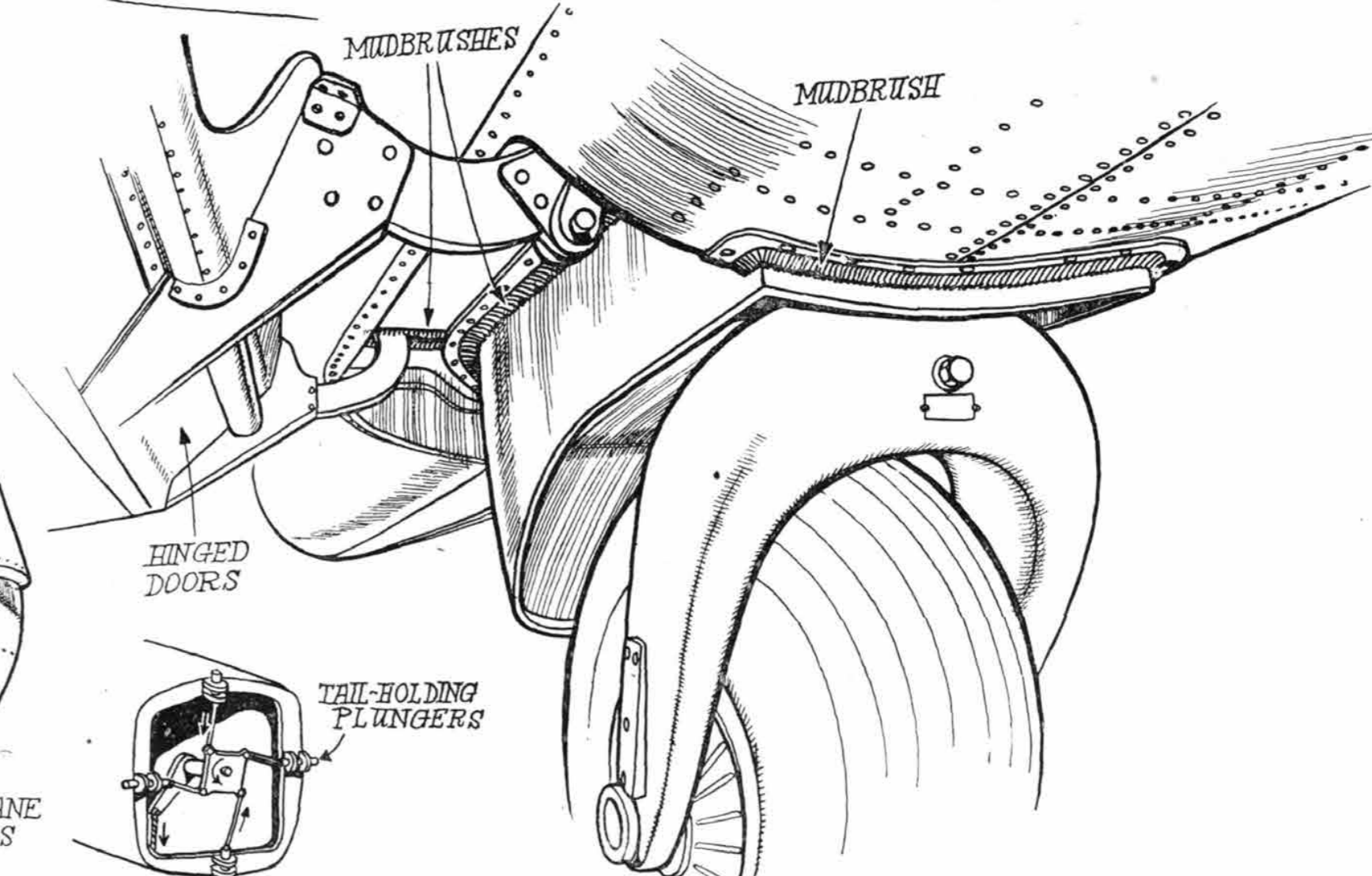
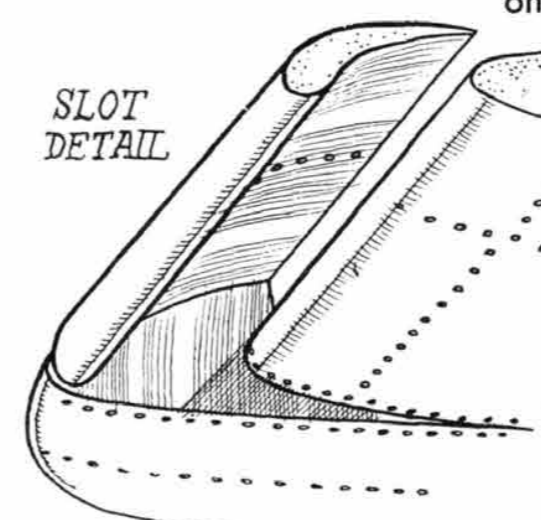
CONTROL GEAR.—(Top right) A drawing of the slotted aileron which is arranged to droop for take-off. (Above) The linkage through which flaps and ailerons are operated and the ailerons drooped. (Right) The operation of the balance tab on the ailerons.



UNDERCARRIAGE DETAILS.—(Above) A diagrammatic representation of the method of retraction of the main undercarriage wheels of the Do 217E1. (Left) The attachment to the front spar.



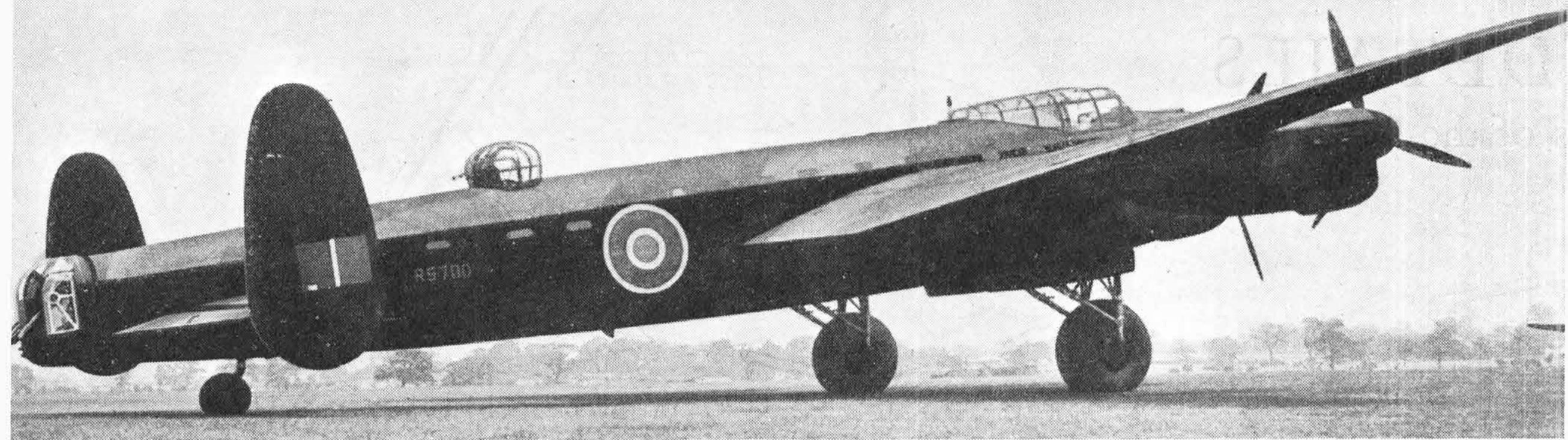
THE TAIL UNIT.—(Above) A drawing of the port fin and rudder of the Do 217E1. The fixed slot on the leading edge is shown in greater detail (above right), and a tailplane fixing nut "A," and spar detail "B" (above left). The tailplane incidence gear is shown on top.



REAR PORTIONS.—(Right) The retractable tail wheel of the Do 217E1. Mudbrushes are provided. (Above) the automatic slipping device which releases the tail cone to expose the dive brake.

Drawings by J. H. Clark,  
Copyright THE AEROPLANE.

# THE ROYAL AIR FORCE



The Avro Lancaster

## ROYAL AIR FORCE AWARDS

**HIS MAJESTY THE KING** has approved the following awards for skill, leadership and gallantry in operational flights over enemy territory, over the North Sea, over the sea off the West Coast of France, and in the Middle East. They include a D.F.C. to Flight Lieutenant D. H. F. Horner, who has completed 92 operational flights despite the fact that he has a spinal injury which prevents him from sitting in his pilot's seat for longer than two hours at a time.

### Distinguished Service Order

Wing Commander A. F. Hards—No. 206 Squadron.  
Wing Commander J. H. T. Simpson—No. 70 Squadron.  
Act. Squadron Leader C. F. Carrant, D.F.C.—No. 501 Squadron.

### Bar to Distinguished Flying Cross

Squadron Leader R. P. M. Gibbs, D.F.C.—No. 39 Squadron.  
Act. Squadron Leader E. H. McHardy, D.F.C.—No. 404 Squadron.

### Distinguished Flying Cross

Wing Commander A. J. Mason—No. 39 Squadron.  
Squadron Leader T. R. Thomas—No. 70 Squadron.  
Act. Squadron Leader D. L. Cartridge—No. 248 Squadron.  
Act. Squadron Leader J. A. Coates, R.A.F.V.R.—No. 203 Squadron.  
Act. Squadron Leader C. N. Crook—No. 206 Squadron.  
Flight Lieutenant A. H. Draper—No. 207 Squadron.  
Flight Lieutenant T. P. Panter—No. 70 Squadron.  
Flight Lieutenant S. N. Pearce, R.A.F.V.R.  
Flight Lieutenant F. A. Robinson.  
Flight Lieutenant C. S. G. Stanbury—No. 70 Squadron.  
Flight Lieutenant D. H. F. Horner—No. 203 Squadron.  
Flight Lieutenant J. W. Stewart, R.A.F.V.R.—No. 208 Squadron.  
Flight Lieutenant E. Cotton—No. 502 Squadron.  
Flight Lieutenant H. G. Pockley, R.A.A.F.—No. 10 Squadron.

Act. Flight Lieutenant J. M. Lander, R.A.F.V.R.—No. 22 Squadron.  
Act. Flight Lieutenant P. J. Stanbury, R.A.F.V.R.—No. 501 Squadron.  
Flying Officer J. G. Grey, R.N.Z.A.F.—No. 104 Squadron.  
Flying Officer C. P. T. Halliwell, R.A.F.V.R.—No. 37 Squadron.  
Flying Officer R. West, R.A.F.V.R.—No. 249 Squadron.  
Flying Officer I. A. Slaughter—No. 203 Squadron.  
Pilot Officer M. G. Hornby, R.A.F.V.R.—No. 203 Squadron.  
Pilot Officer P. A. Huggins, R.A.F.V.R.—No. 104 Squadron.  
Pilot Officer J. E. Swinger, R.C.A.F.—No. 38 Squadron.  
Pilot Officer J. Hurst, R.A.F.V.R.—No. 603 Squadron.  
Pilot Officer S. J. Jordan—No. 489 Squadron.  
Pilot Officer J. A. T. Meridith, R.A.F.V.R.

### Distinguished Flying Medal

Flight Sergeant S. S. L. Beamont—No. 209 Squadron.  
Flight Sergeant G. Butterfield—No. 203 Squadron.  
Flight Sergeant R. J. Couchman, R.A.F.V.R.—No. 59 Squadron.  
Flight Sergeant (now Pilot Officer) A. M. Crow, R.A.F.V.R.—No. 235 Squadron.  
Flight Sergeant B. G. Kemp—No. 230 Squadron.  
Flight Sergeant B. H. Knights—No. 104 Squadron.  
Flight Sergeant G. P. Rylands—No. 14 Squadron.  
Flight Sergeant G. Whitfield, R.A.F.V.R.—No. 206 Squadron.  
Flight Sergeant M. L. Swanson, R.C.A.F.—No. 419 (R.C.A.C.) Squadron.  
Flight Sergeant K. E. Crosby, R.C.A.F.—No. 419 (R.C.A.C.) Squadron.  
Sergeant K. D. Boyce, R.A.F.V.R.—No. 104 Squadron.  
Sergeant M. R. Fearn, R.N.Z.A.F.—No. 14 Squadron.  
Sergeant A. R. Hutchinson—No. 148 Squadron.  
Sergeant E. Lomas—No. 70 Squadron.

## ROYAL AIR FORCE PROMOTIONS

**THE** following promotions are made with effect from July 1:—

### ROYAL AIR FORCE

#### GENERAL DUTIES BRANCH

*Air Mshls. to be Air Ch. Mshls. (temp.):*—Sir Richard E. C. Peirse, K.C.B., D.S.O., A.F.C.; Sir W. Sholto Douglas, K.C.B., M.C., D.F.C.; Sir Arthur W. Tedder, K.C.B.

The folg. promotions are made with effect from June 1:—

#### GENERAL DUTIES BRANCH

*Gp. Cpts. to be Air Cdr. (temp.):*—S. F. Vincent, D.F.C., A.F.C., G. S. Oddie, D.F.C., A.F.C., H. S. P. Walmsley, O.B.E., M.C., D.F.C., D. V. Carnegie, A.F.C., A. L. Paxton, D.F.C., T. A. Langford-Sainsbury, O.B.E., D.F.C., A.F.C., A. B. Ellwood, D.S.C., J. W. Jones, C.B., A. Macgregor, M.B.E., D.F.C., H. T. Lydford, A.F.C.

*Wg. Cdrs. to be Gp. Cpts. (temp.):*—R. J. Divers, M.B.E., E. A. Beulah, W. F. Dry, C. H. Tighe, D.F.C., S. H. V. Harris, R. J. A. Ford, J. C. C. Slater, A. C. Evans-Evans, S. H. C. Gray, O.B.E., R. C. Wilson, J. F. Griffiths, D.F.C., T. C. Dickens, I. J. Fitch, H. F. G. Southey, E. L. S. Ward, D.F.C., J. E. W. Bowles, D.F.C., D. N. Roberts, O.B.E., A.F.C., G. H. Huxham, H. L. Patch, C.B.E., W. H. Merton, O.B.E., A. P. Bett, A. V. Hammond, J. Norwood, B. C. Yarde, W. G. Cheshire, E. S. Finch, J. H. McC. Reynolds, J. R. Whitley, A.F.C., J. B. M. Wallis, O.B.E., J. H. Edwardes-Jones, D.F.C., A.F.C., T. J. Arbuthnot, A. H. Owen, M.C., L. R. Stokes, D.F.C., J. G. Elton, D.F.C., A.F.C., H. Broadhurst, D.S.O., D.F.C., A.F.C., L. S. Snaith, A.F.C., H. A. Constantine, C. E. Chilton, C. W. Dicken, R. F. Gandy, R. F. Shenton, T. H. Carr, D.F.C., A.F.C., N. C. Pleasance, L. T. Keens, O.B.E., E. C. Lewis, G. Francis, D.S.O., D.F.C., H. Waring, M. Lowe, P. W. M. Wright, D.F.C., C. McK. Grierson, M. G. Philpott, H. G. Wheeler, J. R. Hallings-Pott, D.S.O., A.F.C., G. I. L. Saye, O.B.E., A.F.C., J. C. A. Johnson, R. C. Field, R. K. Hamblin, A. R. Combe, R. W. K. Stevens, J. H. T. Simpson, T. M. Abraham, D.F.C., K. S. Brake, W. K. Beisiegel, A. W. Hunt, P. D. Cracroft, A.F.C., J. Marsden.

*Sqn. Ldrs. to be Wg. Cdrs. (temp.):*—K. E. Cornabe, N. M. Bayliss, R. E. Baxter, J. B. Joyce, F. S. D. Burgis, F. L. Newall, J. A. Chorlton, L. Mathias, C. F. King, R. N. Cook, C. G. Isacke, J. A. O'Neill, D.F.C., A. E. Rogenhagen (ret.), G. F. Watson-Smyth (Capt. D.C.L.I.), C. R. Oats, C. E. Slee, A.F.C., L. Maxwell-Muller, C. M. M. Grece, D.F.C., W. M. Bisdee, J. R. Davenport (Capt. R.A.), H. B. Johnson, R. J. P. Prichard, A.F.C., C. H. Simpson, A. M. Taylor, D. A. Kerr, D.S.O., W. I. C. Inness, V. C. Darling, G. Burges, D.F.C., A. M. Bentley, W. P. Shand, W. H. Ingle, R. P. R. Powell, D.F.C., P. M. Astley, J. H. Humphris, J. B. Tait, D.S.O., D.F.C., O. Godfrey, R. J. M. Bangay, O. J. M. Barron, D.F.C., H. R. Goodman, M. G. F. Pedley, G. Lowe, D.F.C., W. A. L. Davis, J. H. Greswell, C. E. Drapper, K. Slater, J. R. I. Bell, J. N. W. Farmer, D.F.C., P. A. Tipping, D. J. McGlinn, R. K. Wildey, D.F.C., J. Butterworth, B. G. D. Nathan, E. M. Ware, D.F.C., F. E. Rosier, D.S.O., B. J. Sandeman, P. R. Walker, D.F.C., T. F. D. Morgan, D.F.C.

Flt. Lt. E. J. McLoughlin (ret.) to be Sqn. Ldr. (temp.). Mar. 1, 1942.

The folg. promotions are made with effect from June 1:—

*Flt. Lts. to be Sqn. Ldrs. (temp.):*—W. E. Knowlden (ret.), B. H. Godfrey (ret.), P. J. Carpenter, G. B. B. Doudney, E. H. Thompson, R. T. Hunn, P. A. Nicholas, V. J. Fenwick, D. L. Wolfe, G. A. Edney, P. H. Cribb, R. F. Finch, P. E. Barnes, J. A. H. Cooper, P. C. Lambert, C. W. S. Thomas, R. D. Max, D.F.C., M. A. Poulton, L. H. Trent, D.F.C., D. A. Willis, D.F.C., L. E. Sextone, D. A. Reddick, A.F.C., W. F. Wallington, J. N. Ogle, A.F.M., L. S. M. Bailey, A.F.C., C. W. Francis, L. H. Folkard, E. M. Goodale (Capt., Northants Regt.), R. R. P. Fisher, W. D. K. Franklin, D. M. Brass, S. A. D. Pike, R. E. C. J. Beeny, E. Coton, H. H. B. Mould, W. B. Hodgson, R. M. Cox, T. R. Turnbull, H. G. Fletcher, D.F.C., A. H. Hewitt, L. H. Carey.

#### TECHNICAL BRANCH

Wg. Cdr. F. W. H. Hall to be Gp. Capt. (temp.). June 1, 1942 (Sen. Mar. 1).

The folg. promotions are made with effect from June 1:—

*Wg. Cdrs. to be Gp. Cpts. (temp.):*—W. A. Opie, P. Slocombe, P. S. Blockey, J. H. Powle, G. A. R. Muschamp, G. B. M. Rhind, A. E. Paish, E. G. C. Stokes, B. G. Farrow, O.B.E., B. D. Nicholas, J. D. Baker-Carr, E. S. D. Drury, A.F.C.

*Sqn. Ldrs. to be Wg. Cdrs. (temp.):*—A. Clifton, O.B.E., C. H. Wilson, A. K. Hunter, T. E. J. Fitton, W. Webster, M.B.E., F. J. A. Willis, H. Cadman, A.F.M., W. Squires, A. E. Clayton, A. E. Pearce, M. F. G. Mill, D.F.M., D. J. Day, P. H. Scoley, F. A. Kirk, W. McCarthy, H. E. Brushwood, R. Herrick, P. G. C. Begrie, W. J. Scrivener, W. R. Frost, J. Bradshaw, G. H. Harrison, R. L. Bell, F. H. Catton, F. F. S. Mattingley, H. L. Millyard, M.B.E., W. J. S. Barnard, O.B.E., B. A. Vautier, R. D. Gough, L. Davey, M. W. Moore, A. Marks, A. G. Williams, F. Stevens, W. Moore, M. Dawnay, R. J. Kemsley, H. H. Laurie, J. H. Styles, W. E. Wendon, J. Lindsay, M.B.E., H. J. Macted, D. McLaren.

*Flt. Lts. to be Sqn. Ldrs. (temp.):*—L. H. Rose, E. H. McDonald, M.B.E., F. Evans, D.F.M., F. Kerchey, F. Wicks, M.B.E., T. L. Mann, T. V. Nelson, F. C. Freemantle, C. G. Johnson, J. C. Green, M. J. Grennan, F. H. Morton, H. Stanway, B. J. Abraham, E. A. Sillitoe, A. J. Shimmons, F. C. Lewis, T. Clare, F. C. H. Kirby, M.B.E., H. V. Hughes, M.B.E., A.F.M., W. G. Womersley, B. E. Gilder, J. A. C. Robinson, H. C. Witts, C. C. Howes, E. W. Allen, W. A. H. Cullum, W. Wolfenden, R. H. Thomas, C. M. Williams, A. C. Mansbridge, L. Avery, H. P. Johnston, R. W. King, W. E. Dunn, A. J. Whiting, J. A. MacRae, W. H. G. Hampshire, M.B.E., E. W. Walker, W. G. B. Marsh, T. J. A. Cresswell, R. Hazelwood, W. J. Ralphs.

#### BALLOON BRANCH

Ftg. Off. E. Owen to be Flt. Lt. (temp.).

#### ADMINISTRATIVE AND SPECIAL DUTIES BRANCH

Ftg. Off. R. W. Flegg to be Flt. Lt. (temp.). Dec. 1, 1941.

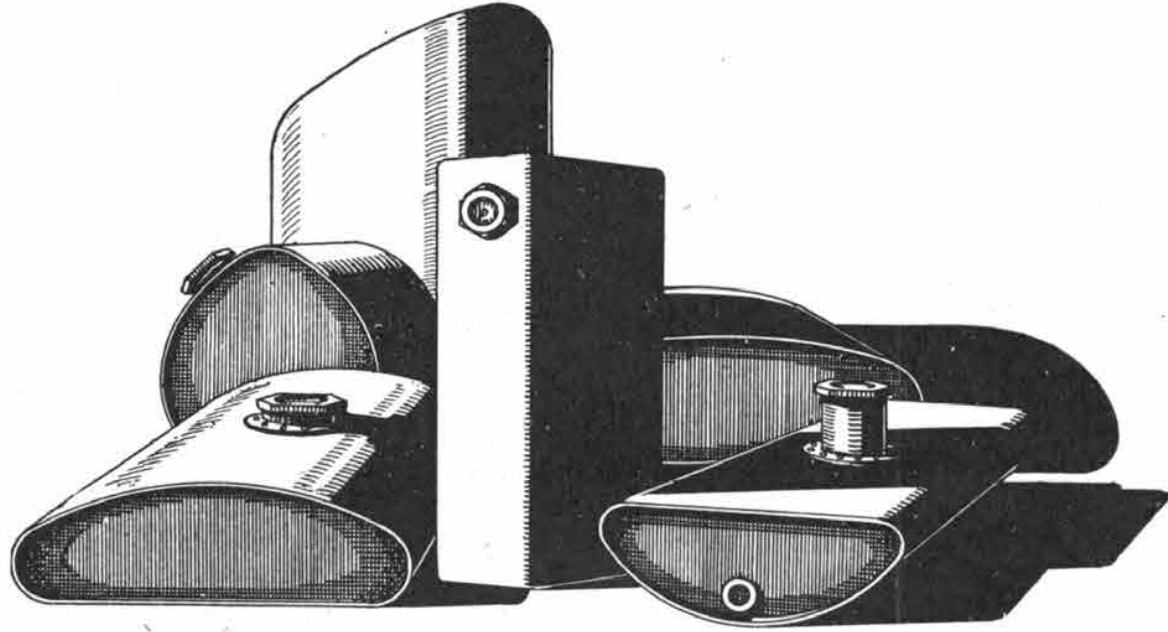
The folg. promotions are made with effect from June 1:—

*Ftg. Offs. to be Flt. Lts. (temp.):*—S. J. Jury, A. E. Bibb, R. Taylor, J. W.



# CUNLIFFE-OWEN AIRCRAFT LIMITED

CONTRACTORS TO H.M. GOVERNMENT ENGLAND

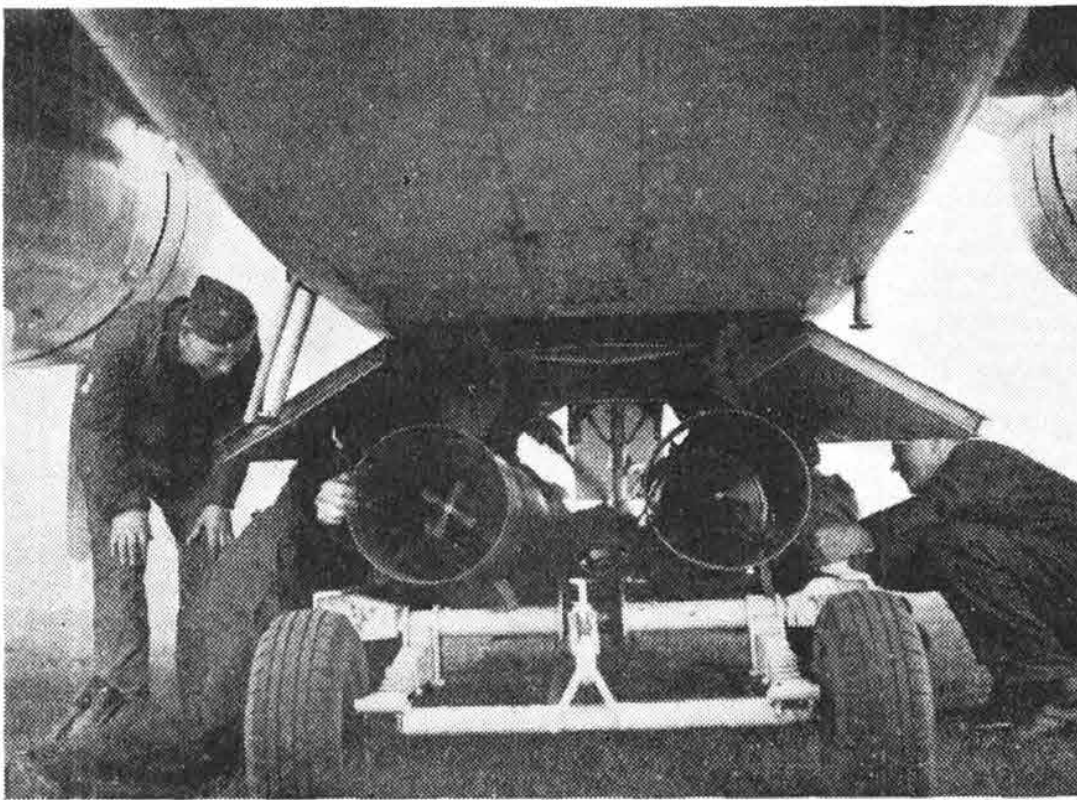


## many tanks...

and many shapes. Some pretty odd ones too. In fact, there seem to be more peculiar shapes in the tank world than exist in millinery. We do not claim to have special knowledge of the latter art, neither is it our business to design tanks which are simplest and quickest to construct. We understand the foibles of tanks and are well aware of the dual (and more often *duel*) factors of 'limitations of space' and 'capacities demanded.' No, my masters, our business so far as tanks are concerned is to produce the most wayward specimens in a skilful, direct, and most expeditious manner—we are even using high-frequency electric soldering—and because our production methods are successful we get many tanks.

# METALAIR

HEAD OFFICE TELEPHONE: WOKINGHAM 819 and 754



**TUCKING THEM UP.**—Bombing up a Douglas Boston III bomber. Two bombs being slung inside the belly.

Taylor, C. H. Beeton, J. T. W. Parnell, A. Cane, W. E. Nightingale, F. G. Jaffrey, J. H. Barlow, G. W. Sawkins, G. McKenna, H. S. Clarke, H. Filkins, S. A. Bennett, F. J. Crane, C. E. Upton, P. Duxfield, A. H. Howse, A. E. Ubee, J. W. Burley, H. Whalley, F. T. Solis, S. Compton, L. Lewington, T. A. H. Vaughan, P. P. Fryse, F. T. Bishop, D. A. Upton, G. W. Jordan, F. J. Davy, A. E. Baldock, R. W. Salmon, D. R. Sexton, A. H. L. Pearce, H. L. Wade, A. Leedham, L. G. Putt, G. E. Penwell, A. J. Richardson, A. G. Webb, G. H. Bennions, D.F.C., W. C. Alders, M. Dougan, R. Martin, H. L. Lloyd, W. H. Saxby, J. H. Bradbury, T. D. Atkinson, M.C., A. Mc. P. Cameron, G. Davidson, F. W. Dowling, S. Findlay, R. James, A. H. C. Plunkett, W. C. Putt, W. H. Scorer, J. A. Sykes, R. S. F. Williams, F. W. D. Grayson, S. L. Reeve, W. H. J. Daw, R. St. C. Lawrence, C. F. Glenn, A. G. Hammond, S. C. Baker, P. A. Lloyd-Fitt, M.M., H. Wright, S. J. Eales, M.B.E., C. H. Leese, C. S. Bray, A. E. Robinson, J. A. Haggerty, F. A. Winsor, C. Adams, S. J. Baker, L. J. Richardson, V. Howard, S. J. Hargrave, N. Scott, G. W. Brisbane, C. K. Buggy, L. Simm.

**EQUIPMENT BRANCH**

*Wg. Cdrs. to be Gp. Cpts. (temp.)*—J. H. P. Clarke, F. H. Bedford, O.B.E., M.C., M.M., O. G. Ridley, M.C., B. E. Essex.  
*Sqn. Ldrs. to be Wg. Cdrs. (temp.)*—W. F. Bryant (ret.), T. A. G. Hawley (ret.), G. A. Curtis (ret.), J. Hobbs (ret.), F. J. B. Powell, M.B.E. (ret.), A. T. Shaw (ret.), L. A. K. Butt (ret.), C. J. Polden (ret.), J. R. Gardiner (ret.), L. N. Sargent (ret.), R. W. Stewart (ret.), F. W. Todd (ret.), R. G. Sims (ret.), L. T. Sanderson, D.S.M. (ret.), A. E. F. McCreary (ret.), J. G. Smithson (ret.), P. H. Stibbs, R. F. Folley, D. H. M. Graham, J. E. Garwood, F. G. Metcalf, H. F. Levell, R. W. Ware, J. E. Hatfield, J. W. Lamb.  
*Flt. Lts. to be Sqn. Ldrs. (temp.)*—G. P. Howell, J. B. Conolly, H. C. D. Blasbery, W. D. Symes, A. McL. Peacock, J. W. Noble, E. A. Pacello, N. B. Silk, D. Stuart, E. Towers, R. W. Clark, J. B. Quarrington, D. H. Wood, J. Hamilton, R. W. Head, P. P. Butler, J. M. Howard, A. P. B. Moore, A. L. Cornford, J. J. Dutton, E. D. Bradfield, M. Collinson, H. R. E. Rumsey, D. C. Walker, R. S. Burles, C. Murray, T. J. Heath, G. W. Northcombe, W. J. A. Pritchett, H. B. Scully, G. P. S. Thomas, A. H. Knowles, G. L. Lister, S. R. W. Amor, E. M. Sopwith, A. P. H. Slogrove.  
*Flg. Offs. to be Flt. Lts. (temp.)*—W. Hore, J. D. Blackford, W. J. Waugh, C. S. Campbell, T. J. Goggin, D. K. Petty, H. G. Everest, H. J. C. Whitmee, J. L. Newton, M.M., C. Herrington, W. M. Nowell, G. Leitch, C. I. Reeder, W. E. Little, H. W. Taylor, A. R. G. Wolff, R. E. J. Blanche, F. G. Smith, M.M., S. Green, M. McLeod, H. W. Ford, E. F. Hales, T. E. Ekins, D. Masters, C. J. Michelle, E. V. Blaze.

**ACCOUNTANT BRANCH**

*Sqn. Ldrs. to be Wg. Cdrs. (temp.)*—N. Wallett, G. H. White, R. L. M. Hall  
*Flt. Lts. to be Sqn. Ldrs. (temp.)*—S. R. Brown, G. B. Howard, M.M., H. W. Seear, R. W. Marson, H. Murray, R. G. Plumb, H. W. C. Hannaford, W. A. Covill, C. P. Weeks, R. H. Harris, E. A. Winter, F. D. Holmes, S. P. Austin, R. D. I. Scott, R. J. Sharples, R. R. Jack, S. C. Tapley, D. H. Mortimore, F. E. Crossland, P. Raby, J. H. C. Russell, J. A. Bryden, R. D. White, W. B. H. Vidgeon, J. A. T. Plummer, R. B. Thomas, J. R. Cox, J. B. Bennett.

The folg. promotions are made with effect from Dec. 1, 1941:—  
*Flg. Offs. to be Flt. Lts. (temp.)*—F. C. Harvey, L. W. Alford.  
 The folg. promotions are made with effect from June 1, 1942:—  
*Flg. Offs. to be Flt. Lts. (temp.)*—C. H. Sparks, E. Biddle, E. H. Stamp, J. T. Marshall, G. R. Buley, S. Willcox, B. L. Green, W. A. Crampton, R. Locke, J. Makepeace, A. A. Mackinnon, A. E. Hammond.

**MEDICAL BRANCH**

Air Vice-Mshl. (temp. Air Mshl.) Sir Harold E. Whittingham, K.B.E., M.B., Ch.B., F.R.C.P. (Lon.), F.R.C.P. (E), F.R.F.P.S., D.P.H., D.T.M. & H., K.H.P., to be Air Mshl. Mar. 1, 1941.  
 The folg. promotions are made with effect from June 1, 1942:—  
 Gp. Capt. H. L. Burton, M.B., B.S., D.P.M., K.H.P., to be Air Cdre.  
 Gp. Capt. D'A. Power, M.C., M.R.C.S., L.R.C.P., to be Air Cdre. (temp.)  
 Sqn. Ldr. S. B. S. Smith, L.M.S.S.A., D.T.M. & H., to be Wg. Cdr. (temp.).

**RESERVE OF AIR FORCE OFFICERS**

**GENERAL DUTIES BRANCH**

The folg. promotions are made with effect from June 1, 1942, and with seny. of Mar. 1:—  
*Sqn. Ldrs. to be Wg. Cdrs. (temp.)*—F. J. O. Lasbrey, G. H. Sheehan  
 The folg. promotions are made with effect from June 1, 1942:—  
*Sqn. Ldrs. to be Wg. Cdrs. (temp.)*—P. H. Maxwell, G. J. C. Mahony, N. R. Harben, D.F.C., Lord M. A. Douglas-Hamilton, J. A. Field, A.F.C., A. C. Rabagliati, D.F.C., W. G. Moseby, M. W. B. Knight, D.F.C., A. D. Annand, A. N. Kingwell, A.F.C., G. M. Cox, M.C., A.F.C., G. D. Middleton, R. L. Burnett, G. H. W. Selby-Lowndes, A.F.C., L. H. Snelling, A.F.C., W. E. Hooper, A.F.C., S. J. H. Carr, D.F.C., H. R. Black, A.F.C., G. F. P. O'Farrell, F. S. Homersham, A.F.C., D.C.M., M.M., C. L. Gomm, D.F.C., A. F. M. Sisley, E. J. Brooks, D.F.C., E. G. Jones, D.S.O., D.F.C., J. B. Burnett, P. A. Gilchrist, D.F.C., G. D. Jones, D.F.C., H. J. Garlick, D.F.C., W. H. Biddell, D.F.C., P. Hadfield, W. Riley, D.F.C., B. E. Dobb, R. B. Brown, P. W. Johnson, A.F.C., G. F. K. Donaldson, A.F.C., E. P. F. Gibbs, D.F.C., G. P. Seymour-Price, A. L. T. Naish, R. P. Garnons-Williams, A.F.C., A. E. Clouston, A.F.C.  
 The folg. promotions are made with effect from June 1, 1942, and with seny. of Dec. 1, 1941:—  
*Flt. Lts. to be Sqn. Ldrs. (temp.)*—W. J. D'A. Stacey, W. L. Woodward, A.F.C.  
*Flt. Lt. A. B. Mitchell* to be Sqn. Ldr. (temp.) June 1, with seny. of Mar. 1.  
 The folg. promotions are made with effect from June 1:—  
*Flt. Lts. to be Sqn. Ldrs. (temp.)*—P. D'A. Lister, S. J. Monroe, D.F.C.,

H. R. A. De Belleruche, H. M. Robertson, D.F.C., R. S. Crawford, D. H. Lowe, I. G. O. Fenton, D.F.C., E. Q. Moody, J. A. H. Sargeant, R. G. L. Baxter, W. H. Flint, W. H. George, D.F.C., A. L. McDowell, R. G. Maddox, A.F.C., I. Macleod-Selkirk, G. O. Ross, B. R. Ker, C. D. Beaumont, W. A. Blake, R. C. Kierstead, S. G. Hall, C. G. Clegg, R. Hawkins, M.C., E. G. B. Reid, K. C. Roberts, A.F.C., A. W. Nelson, T. N. Silk, F. N. Brinsden, J. H. Player, G. C. Banning-Lover, A.F.C., C. P. Barber, S. T. Cooper, T. H. V. Pheloung, I. J. Spencer, D.F.C., E. F. P. Wheeler, P. R. Burton-Gyles, D.S.O., D.F.C., C. N. McVeigh, R. A. Nicholson, W. H. Hankin, R. S. May, W. J. Ditto, P. J. Dundee, T. O. Prickett, F. C. Willis, R. F. Hatton, W. G. Thompson, G. J. H. Chrystal, P. B. Powell, B. T. Aikman, D.F.C., J. R. Grant, H. P. F. Patten, A. S. Halls, K. G. Davis, J. D. Warne, D.F.C., D. T. Macpherson, D. F. W. Darling, D.F.C., K. H. P. Beauchamp, D.F.C., W. D. Beckingham, A. H. C. Roberts, P. D. S. Bennett, D.F.C., I. B. Westmacott, A. E. Slocombe, J. J. McKay, D.F.C., R. Anderson, D.F.C., A. R. Skinner, P. E. Dodson, D.F.C., J. R. C. Young, A.F.C., W. M. Morris, D.F.C.

**ADMINISTRATIVE AND SPECIAL DUTIES BRANCH**

*Sqn. Ldrs. to be Wg. Cdrs. (temp.)*—H. L. Nunn, D.S.C., D.F.C., R. N. Riddell, R. C. Whittle.  
*Flt. Lts. to be Sqn. Ldrs. (temp.)*—A. F. Marlowe, A. E. B. Bateman, K. M. McGrudden, M. M. Kaye, D. V. G. Mawhood.  
*Flg. Off. R. E. M. Blakeway* to be Flt. Lt. (temp.), Mar. 1.  
*Flg. Off. J. L. Kemp* to be Flt. Lt. (temp.), June 1, 1942.

**EQUIPMENT BRANCH**

The folg. promotions are made with effect from June 1, 1942:—  
*Sqn. Ldrs. to be Wg. Cdrs. (temp.)*—D. W. King, A. J. Roberts, J. H. Bentham, E. H. Broad.

**MEDICAL BRANCH**

*Sqn. Ldr. to be Wg. Cdr. (temp.)*—F. I. G. Tweedie, M.B., B.Ch., M.R.C.S., L.R.C.P.  
*Flt. Lts. to be Sqn. Ldrs. (temp.)*—E. A. Mayston, M.R.C.S., L.R.C.P.; J. H. L. Newnham, M.B., B.S., M.R.C.S., L.R.C.P.

**ROYAL AIR FORCE VOLUNTEER RESERVE**

**GENERAL DUTIES BRANCH**

*Flt. Lt. P. B. N. Davis* to be Sqn. Ldr. (temp.) with effect from June 1, 1942, and seny. of Mar. 1, 1942.  
 The folg. promotions are made with effect from June 1, 1942:—  
*Flt. Lts. to be Sqn. Ldrs. (temp.)*—K. H. Salusbury-Hughes, J. F. Inkster, C. M. Howell, C. N. Foxley-Norris, C. H. Hartley, E. D. Parker, G.C., D.F.C., M. E. Blackstone, H. M. Young, D.F.C., A. D. Mc. N. Boyd, D.F.C., I. R. Stephenson, C. M. Miller, D.F.C., A. J. Douch, H. A. S. Disney, F. T. Gardiner, P. R. Crompton, D.F.C.

**TECHNICAL BRANCH**

*Flt. Lt. H. Buxton* to be Sqn. Ldr. (temp.) with effect from June 1, 1942, and seny. of Mar. 1, 1941.  
*Flt. Lt. H. R. A. Wood* to be Sqn. Ldr. with effect from June 1, 1942, and seny. of Sept. 1, 1941.  
*Flt. Lt. E. W. T. Crouch* to be Sqn. Ldr. (temp.), June 1, 1942.

**BALLOON BRANCH**

The folg. promotions are made with effect from June 1, 1942:—  
*Wg. Cdrs. to be Gp. Cpts. (temp.)*—C. J. R. Turner, J. G. Murray.  
*Sqn. Ldr. to be Wg. Cdr. (temp.)*—R. O. Skinner.  
*Flt. Lt. to be Sqn. Ldr. (temp.)*—L. J. Woollam.  
*Flg. Offs. to be Flt. Lts. (temp.)*—Mar. 1, N. S. Durant, June 1, 1942, G. P. Dealtry, G. N. Joye, J. A. Forgie, W. S. Brown, F. A. Blackmon, F. G. W. Jackson, L. W. Killeen, T. R. H. Kane, N. W. E. Codd, E. H. Wood, A. W. Fowles, W. S. Loxton, L. C. Carter, F. L. Darke, E. F. Pressland, J. A. Crossley, E. W. Joseph, T. H. Morgan, G. F. Nutt, I. S. Macdonald, C. Waynes, R. W. Buck, F. S. James, W. T. Forde, C. G. Cerry, D. L. David, W. F. R. Dickinson, J. W. Pritchard, A. G. L. Young, G. R. Taylor, M. S. Ashby.

**ADMINISTRATIVE AND SPECIAL DUTIES BRANCH**

*Sqn. Ldrs. to be Wg. Cdrs. (temp.)*—H. A. Anson, J. E. Buckland, E. S. C. Grune, G. I. C. Peacock, J. G. Argles, J. H. Harris, W. H. Day, F. V. Gauntlett, A. J. Nightingale, J. C. Mitchell, O. C. Cassels, D.F.C., J. H. Page, B. B. Dowling, H. E. F. Saunders, W. R. Castings, M.B.E., E. A. Sullock, A.F.C., G. A. Wells, M.C., W. H. G. Heath, D. E. Ward, L. T. Kerry, M.C., N. Wood.  
*Flt. Lt. J. D. McEwen* to be Sqn. Ldr. (temp.), Dec. 1, 1941.  
 The folg. promotions are made with effect from June 1, 1942:—  
*Flt. Lts. to be Sqn. Ldrs. (temp.)*—R. V. De Halpert, W. D. Porter, H. Sanders, R. W. Scoles, H. E. Storey, C. E. Stuart, H. Thrower, J. K. Watson, A. J. S. Doble, J. C. Farrer, A. C. S. Buist, M.C., Sir A. R. W. Curtis, K.C., V.O., C.M.G., M.C., D. V. D. Marshall, W. Man, D.F.C., H. de V. Leigh, D.F.C., C. W. Usher, J. S. Smith, E. T. Mitchell, H. B. Dakin, M.B.E., C. A. Shute, C.M.G., C.B.E., N. Harper, A. C. Lyell, M.C., H. J. Spencer, F. L. Clark, W. M. Ackery, D.F.C., F. R. Bailey, C. M. Davis, J. B. Newman, M.B.E., G. Milner, F. C. Faulkner, O. R. Orchard, A. C. Kermod, T. G. Whitlock, H. A. Buss, O.B.E., D.S.C., J. A. Stedman, P. H. Tremlett, J. D. Piper, M.C., H. J. D. Arkell, E. R. Bullimore, H. B. Dawes, M.C., E. R. Playford, J. J. B. Rutter, A. T. Hughes, L. M.

**THE ARMOURER'S PIPE CLEANER.**—Last minute pull through of the Hispano cannons of a Hurricane IIc night fighter.



Woolveridge, W. E. N. Clarke, H. J. Tanburn, T. K. Burton, F. J. Powell, M.C., J. B. Mackie, J. R. Pattison, L. W. D. Peacock, G. G. Braithwaite. *Flt. Offs. to be Flt. Lts. (temp.):*—N. W. Wickham, W. N. Cronshaw, P. A. A. Boss, S. V. Cowell, A.F.C., R. A. Wyatt, G. F. Woolf, R. C. Hedger, S. E. Grand, T. G. W. Gardiner-Robinson, S. G. M. Bowman, J. G. E. Horne, G. E. Tennant, B. F. S. Irwin, I. McL. C. Power, W. E. Guinness, L. A. Evans, W. D. Hall, M.C., J. R. S. Borman, S. L. Hooper, L. W. Terry, C. W. Waitt, M.M., R. Foster, L. W. Snagge, E. A. Eames, H. A. Pound, M.B.E., M.C., H. B. Browning, R. H. Walsh, D.S.O., O.B.E., M.C., V. R. Ronald, E. R. Pennell, D.F.C., J. D. G. Kellock, I. H. Bowhill, W. J. Warner, T. Harris, S. C. Weir-Rhodes, N. N. McKinnon, C. J. Millward, E. B. M. A. Dunipace, J. P. Armitage, E. I. Treasure, D. C. Maurice, T. A. H. Beddington, C. D. De Bosdari, H. L. Archibald, S. W. Slaughter, S. Beeby, R. T. Newton, R. C. Cole, R. E. Casalis De Pury, J. Duncan, T. G. Skinner, A. C. Torry, A. J. Ford, E. W. Armstrong, J. F. B. Ewen, T. V. Craig, R. B. Snagge, L. S. Smith, D. E. Norman, G. N. Sellers, D.F.C., J. H. W. Wilcox, J. G. MacAndrew, G. L. Godden, O.B.E., J. C. Thompson, A. H. Greatrex, J. Whattam, R. M. C. Day, C. H. Coates, W. A. Sime, T. F. G. Strubell, A. C. McKechnie, W. F. Conway, E. J. T. Jungius, M.C., E. Michelmores, M.C., C. B. Marshall, P. B. H. Home, A. H. W. Wall, A. H. Williams, E. R. Legh-Jones, O. K. Owen, J. D. K. Lloyd, C. O. R. Mosse, M.C., H. J. Thomas, W. J. C. Tonge, C. F. Cox, J. W. Hogben, F. M. L. Olsen, B. I. Ward, C. E. St. J. Evers, R. A. Mitchell, C. Higham, S. D. Antill, L. Miller, J. J. St. L. Martin, V. E. A. Isherwood, V. P. Brooks, P. K. Robertson, H. L. Seligman, K. B. Harbord, C. W. B. Urnston, J. T. Histed, C. R. Acton, J. L. E. Rees, C. Middleton, E. S. Carter, C. H. W. Frost, W. L. Douglas, M.C., O. H. Brown, H. Faulk, W. C. Hart, J. L. Hall, C. A. Taylor, E. C. S. Weale, A. J. Graham-Wigan, M.B.E., L. E. Provis, A. H. Rose, M. M. Elrington, P. C. Thornton, J. H. L. B. Davies, J. Town, D.F.C., J. N. K. Le Fleming Shepherd, M. J. P. Lacy, H. R. Spencer, A. E. Thompson, J. M. R. Jayakar, S. A. Hargrove, W. W. Marks, Sir Richard W. Board, C. D. Wilson, M. H. Bradshaw-Jones, W. E. Parnell, O.B.E., L. G. Blomfield, L. Lockhart, H. O. Gregory, The Hon. G. R. Bellew, M.V.O. K. C. Smith, G. C. Hicks, F. A. Wray, P. G. Child, N. B. Sherwell, P. C. Carter, I. J. Pitman, J. Burr, H. S. Hurrell, R. C. Udall, I. F. E. Thoday, W. J. A. Osburn, C. P. L. Firth, Earl of Tankerville, D. K. Graham, S. N. King, G. C. Ross-Mumky, H. H. Rose, H. N. Witting, C. S. Watkinson, E. G. Sharvill, J. F. A. H. Lindsay, D.C.M., M.M., R. E. Cuff, A. C. Colebrook, G. Cruikshank, E. A. Latter, B. W. S. Smith, H. D. Curry, C. S. Laven, R. G. Warden, H. D. Wright, J. M. S. Roberts, S. Bosworth-Martin, E. E. Jones, W. A. Naylor, J. H. Weaver, C. H. Bell, O.B.E., J. G. Parkin, H. Parker, K. O. G. Huntley, B. Stewart-Sandeman, R. J. S. Lund, H. C. Mathew, M.C., T. R. H. Nelson, T. D. Cole, J. E. Bembaron, W. E. Bryan, D.F.C., P. B. Townsend, A. L. Hiscock, O. G. E. McWilliam, A. R. May, J. E. Helfield, B. B. Hick, D. N. Kendall, J. E. Dunning, R. I. Jones, A. G. C. Colquhoun, M. McGougan, F. J. W. Williams, O. L. Beater, D.F.C., J. Whittaker, S. A. Sinner, N. H. de V. Heathcote, H. J. Smith, R. J. Weaver, J. H. Wortley, A. S. Owen, F. Wood, R. W. Judge, D. F. Meredith, W. G. Pearson, F. W. Turpin, B. F. Savage, L. E. G. Ames, W. J. Breen, C. F. M. Burry, R. J. Debenham, L. M. Dunn, J. D. Frame, H. A. Grass, A. F. J. H. Keep, L. G. W. Mallows, L. Monnickendam, E. W. Moses, E. G. Rhodes, B. L. Salmon, I. I. Simons, H. Thomas, J. R. Wearmouth, K. L. Bodenham, S. J. Jordain, M.C., J. T. Hunter, T. C. Clayton, D. O. Lloyd-James, R. G. Wilsdon, G. S. Charlesworth, E. H. Row, C. E. Tripple, Lord Dundas, I. R. Millar, R. J. McKay, M. C. Rawlence, N. P. Anson, A. H. Watters, D.F.C., J. T. D. Boyd, Sir W. L. Stampe, P. D. Finn, D. E. Smith, J. H. Tylee, J. F. Taylor, J. Sharp, R. H. Pilcher, F. Farmer, F. Fairhurst, W. S. S. Harper, H. R. Whately, F. H. Maynard, C.B., D.S.O., M.C., E. G. C. Quilter, E. J. Robinson, R. A. Walmisley, H. H. B. Newbury, J. E. M. Stubbings, R. D. H. Osborne, The Rt. Hon. Lord Wellesley, M.C., H. M. Allen, C. R. Lawrence, A. G. Powell, F. C. Whitten, P. R. Magrath, W. A. Vickers, F. E. LeFevre, M.C., E. F. S. Halliday, M. H. C. Slaytor, S. H. Cooper, P. E. Lawrie, C. H. H. Holland, D. C. S. Bland, E. Pralle, A.F.C., E. Lister, J. O. Barclay, E. A. Gorton, B. M. Davison, G. E. Browne, H. D. Downman, F. A. Holmes, D. C. Thompson, H. Hillier, D.F.C., G. W. Parker, G. E. M. Bennett, E. Cockburn, M.C., G. D. Jenkins, R. Leycester, M.C., E. M. Edlin, W. L. Wood, H. L. Chadwick, W. G. Giles, A. J. Jewell, G. W. Murray, C. Ralph, C. V. L. Hooman, W. M. Browne, A. B. Thompson, D. W. Bridge, A. J. Plummer, G. E. L. Woodhouse, T. J. Mordecai, J. V. Bowring, E. Hosey, A. H. Curtis, L. H. Graham, J. H. Hudson, R. H. N. Saunders, G. E. Evington, J. H. Bolt, I. Mac. N. Parsons, B. K. O. Mathews, J. Stratton-Ferrier, H. Sainsbury, H. S. Rowland, S. A. Scott, E. J. Brice, J. A. C. Baker Harber, J. S. Cooper, L. A. Lloyd, E. J. L. Ross, C. G. Reid-Walker, R. J. Aitken, J. U. McKinnon, J. A. O'Callaghan, W. A. G. O'Brien, L. M. Page, R. F. Pearson, M.C., R. F. Walker, J. C. Murray, J. M. Stables, J. Morris, E. D. Syson, L. A. Combes, W. J. H. W. Shewry, A. G. F. Wickenden, C. Zerrenner, N. C. K. Dibble, S. B. Johnson, H. W. Smith, G. Davis, G. H. Harley, R. G. Burns, C. R. P. Cullum, E. L. Elic, W. A. J. Gribble, G. Hampson, F. A. Leggard, C. T. Mansell, E. S. Michael, D.C.M., H. S. Murdock, H. M. Pezzani, G. H. E. Roxburgh, M. W. P. Nell, M. E. Shields, A. R. Weyer, G. M. B. Pearson, E. Bromley-Davenport, W. J. Daniel, A. H. Partner, S. Seed, W. G. Melville, R. P. Butten, C. B. Burdock, C. C. Castle, L. C. Cesek, H. R. Gray, J. H. Lewis, R. E. R. Lloyd, J. G. L. Pommerol, J. R. A. Savidge, W. P. Wilson, R. D. Clinch, J. L. Curd, R. H. R. Davies, D. Maskell, J. W. Whitmarsh, P. A. X. Gaugain, R. H. S. Lyall, J. S. Greening, A. B. Tingey, W. F. Booth, J. C. Vickery, G. S. Blacker, H. W. Featherstonehaugh, B. H. Wood, K. L. Barber, R. G. Swaffield, P. N. L. Nicholson, J. L. S. Fry, F. W. Jelpke, R. C. Green, L. E. Russell, S. K. Dunford, J. S. Olliff, G. R. Bowes-Cavanagh, E. N. Lohmeyer, D.F.C., P. E. Sowerby, I. C. D. Clowes, R. F. Freeman, E. Bentley, E. W. Stewart, J. H. Thomas, G. P. S. Pollard, F. J. K. Mason, M. E. Corfe, R. G. E. Diamant, J. I. Eadie, C. D. Gray, W. F. Lowe, E. C. Nock, W. R. Pearson, J. B. Birkhead, H. G. G. Joynson, W. N. Charnley, R. Mawdesley, E. H. Chambers, J. B. Isaacs, R. C. Thring, W. T. Eccles, J. E. Storey, J. Mayhew, J. Walters, T. A. Wiese, R. E. Bland, E. A. C. Bushell, S. M. Krusin, D. Meinertzhagen, R. F. M. Wilkinson, R. L. Mathews, S. Crawford-Marks, H. Davenport, T. E. Jones, R. E. Spray, H. K. Knight, G. S. Marshall, G. W. Ball, J. A. H. Parker, R. A. Birch, R. C. Blow, E. F. Clennell, E. A. Evenden, S. Hathaway, J. Holland, E. R. Holmes, A. R. Jones, S. Jackson, W. R. Lush, R. F. S. Patchin, B. A. Sayers, A. H. R. Sellar, J. E. B. Simeon, R. C. Swayne, W. Taylor, N. Vincent, J. H. D. Young, R. A. Taylor, B. Lowe, H. F. W. Cousins, G. H. Simms, W. Gatward, H. F. G. Wood, L. J. Cooke, A. F. H. Gee, P. P. Grey, G. A. J. Malcolm, A. W. Wood, P. A. Welman, M.C., B. E. D. Cuddon, A. N. Banks, G. R. Belt, P. S. Davies, E. C. Eggleton, Lord Innes-Ker, H. W. McGowan, F. L. Rees, P. J. Rolt, A. D. Waldron, S. T. Tipper, D. F. Whitehead, A. G. Dunton, H. G. Evers, F. L. Fletcher, C. H. M. Gould, C. J. E. H. Tozer, W. M. Brims, J. A. Campbell, S. W. J. Tanner, J. Wicks, L. G. Williams, R. S. Davies, G. B. Anderson, M.C., C. P. Bennett, L. F. H. Bird, Q. C. Craig, E. M. Hornby, G. W. Traylor, J. R. Budd, L. E. Archer, R. C. H. Horne, H. S. Linthwaite, E. H. Tyson, M. C. Badcock, G. L. Bateman, T. A. Carr, J. H. E. Craster, R. S. Geach, D. M. Goodbody, J. R. Hatchett, G. Henry, W. E. Lloyd, F. R. Lovell, J. M. McBain, G. W. McNaught, H. L. Marshall, S. D. Merrick, E. M. Mitchell, A. Nuttall, D. L. H. Price, S. P. St. C. Raymond, H. Rhodes, H. D. Roiffey, J. B. Sanderson, E. Steward-Anderson, J. D. Syme, W. W. Tolman, G. G. Cooper, S. T. Whitmore, D. A. W. Batchelor, J. N. Roberts, A. S. Bremner, A. F. Crouch, C. V. Knight, A. R. Wills, C. F. De Hamel, A. G. Morkill, G. R. Mallinson, E. Dancy, C. H. Denny, R. W. Dickinson, E. R. H. Hill, E. A. Tilling, K. G. Brabner, H. W. Hardwick, C. Lucas, H. J. Wise, S. Kesley, H. J. Ashley, H. E. Blyth, M. G. Burnand, R. H. Francis, R. A. Frost, N. Gatey, G. Krikorian, T. P. Lloyd, R. W. Nicolson, D. J. Passadoro, G. T. S. Shapley, E. C. Hodges, W. A. Johnson, A. Pearlman, A. D. P. Thomas, H. I. Browning, F. H. L. Campion, R. V. S. D'Arcy Hildyard, T. J. Rogers, A. B. Swift, F. A. W. Warne.

EQUIPMENT BRANCH

The folg. promotions are made with effect from Mar. 1:—  
*Flt. Lts. to be Sqn. Ldrs. (temp.):*—H. A. Jordan, A. Jones, J. B. Stewart.  
 The folg. promotions are made with effect from June 1:—  
*Flt. Lts. to be Sqn. Ldrs. (temp.):*—D. McArthur, H. G. Howard, T. W. C.

Robinson, E. Huntley, M. J. Aldrick, C. R. Clark, L. N. White A. J. Fairclough, R. H. Berry, A. W. Pim, H. L. E. Julyan, F. A. H. Smail, E. Taylor, W. P. Beddow, A. H. Seymour, E. F. Clear, G. H. Grasty, F. W. Hamblin, N. C. Kirkham, W. R. B. Phipps, R. W. Tyler, G. S. Sawtell, D. F. Williams, F. J. Smith, A. G. Dettmer, H. F. R. Temple, A. R. Grutchfield, H. A. J. Bolwell.

*Flt. Offs. to be Flt. Lts. (temp.):*—C. J. Newton, J. B. Dixon, F. J. W. Knowles, C. B. Lockerbie, I. G. H. Drummond, D. Mitchell, H. S. Jones, L. T. Jones, J. Fearne, I. O. Fuller, R. Crittenden, A. J. Palmer, R. T. Chapman, A. R. Markham, G. W. Orrock, H. B. Sissmore, C. B. R. J. B. Curtis, R. A. Heppenstall, F. G. Bullimore, E. T. W. Lander, K. R. Laing, J. Whitwell, E. G. Boshell, W. S. Baddeley, H. J. H. Andrew, S. L. Baker, E. C. Bolton, H. Bowman, S. J. T. Bryer, J. D. Carmichael, A. McN. Chassels, J. W. Clegg, D. Crabtree, B. A. C. Dunca, S. Goatcher, H. H. Godecaux, A. H. P. Hollis, G. T. Honniball, J. H. Lea, W. M. Lloyd, I. Macfarlane, B. E. J. McSweeney, E. J. Milner, R. A. Milsom, E. J. Morris, C. B. Skipper, J. P. Usher, J. G. Bewley, E. H. Isaacs, K. A. Afford, J. B. Barnes, A. L. Bieber, K. B. Boys, E. W. Piggott, D. C. Clark, T. D. Connochie, J. Elliott-Smith, H. J. G. Cooper, H. E. Courtney, F. C. Darley, E. V. Dunn, R. E. Cooke, J. R. Crook, I. R. Draper.

ACCOUNTANT BRANCH

*Flt. Lts. to be Sqn. Ldrs. (temp.):*—E. C. R. Hudson, W. J. Tuite.  
*Flt. Offs. to be Flt. Lts. (temp.):*—E. E. Wilding, H. R. Saunders, J. P. Cordery, C. O. Bartley.

MEDICAL BRANCH

*Sqn. Ldr. to be Wg. Cdr. (temp.):*—J. Wingate, M.B., Ch.B.  
*Flt. Lts. to be Sqn. Ldrs. (temp.):*—K. F. Caird, M.B., Ch.B., F.R.C.S.; W. A. S. Falla, M.B., B.S., D.P.M.; H. A. Tracey, M.R.C.S., L.R.C.P.; R. G. H. Cunningham, M.B., Ch.B.; W. Hargrave-Wilson, M.R.C.S., L.R.C.P.; C. R. Jenkins, M.R.C.S., L.R.C.P., D.A.; E. B. Rayner, M.B., Ch.B.; G. P. Arden, M.B., B.S., F.R.C.S., L.R.C.P.; J. C. McBrowne, M.R.C.S., L.R.C.P.; W. H. Gossip, M.B., Ch.B.; L. S. Henry, M.B., B.S., F.R.C.S.(E.); J. C. McGregor, M.B., Ch.B.; D. M. Wallace, M.R.C.S., L.R.C.P.; C. R. Mayou, M.R.C.S., L.R.C.P., D.P.H.; I. B. K. MacGregor, M.B., Ch.B.; W. Simpson, M.B., Ch.B.; R. E. Angel, M.B., B.S., M.R.C.S., L.R.C.P.; D. M. Brown, M.B., Ch.B.; R. H. Craig, M.B., Ch.B.; C. Hotson, M.B., Ch.B., F.R.C.S.(E); T. S. B. Kelly, M.B., Ch.B., L.R.C.P. and S., L.R.F.P. and S.; J. B. Maurice, M.R.C.S., L.R.C.P.; G. MacK. Gibson, M.B., Ch.B.; B. J. E. Anson, M.R.C.S., L.R.C.P.; H. S. Atkinson, B.M., B.Ch., M.R.C.S., L.R.C.P.; P. R. Kemp, M.B., Ch.B.; H. S. H. O'Connor, M.B., Ch.B.; R. W. Stewart, M.B., Ch.B.; M. L. Maley, M.B., B.S., M.R.C.S., L.R.C.P.; H. E. Pooler, M.B., Ch.B.; B. S. Robertson, M.B., Ch.B.; K. W. Bruce, L.M.S.S.A.; D. G. Evans, M.B., Ch.B., M.B., B.S.; G. B. Graving, M.R.C.S., L.R.C.P.; F. G. Mundell, M.B., B.S.; J. H. Hall, M.B., B.Ch., M.R.C.S., L.R.C.P.; H. J. Davies, M.B., B.S., M.R.C.S., L.R.C.P.; D. M. Hannah, M.B., Ch.B.; R. Hill, M.B., Ch.B.; A. Wilson, M.B., Ch.B.; H. J. H. Hendley, M.B., B.Ch., M.R.C.S., L.R.C.P.; J. B. Methven, M.B., Ch.B.; F. R. Neubert, M.B., B.Ch., M.R.C.S., L.R.C.P., L.M.S.S.A.; J. D. Ramsay, M.B., Ch.B., M.R.C.P.; D. Skinner, M.B., Ch.B.; T. C. Wilson, M.B., Ch.B.; J. Courtney, L.R.C.P. and S., L.R.F.P. and S., D.M.R.E.; L. G. Anderson, M.D., Ch.B., D.P.H.

AUXILIARY AIR FORCE

GENERAL DUTIES BRANCH

*Wg. Cdrs. to be Gp. Cpts (temp.):*—A. V. Harvey, C.B.E., L. R. Briggs.  
*Sqn. Ldrs. to be Wg. Cdrs. (temp.):*—M. F. Anderson, D.F.C., B. A. Hewett, R. G. Grant-Ferris, S. H. Skinner, Sir A. P. Hope, D.F.C., R. A. Clay, G. O. Budd, D.F.C., S. G. Beaumont, J. Cunningham, D.S.O., D.F.C., C. D. Griffiths, D.F.C., G. G. Stockdale, P. K. Stead.  
*Flt. Lt. B. H. Bowring to be Sqn. Ldr. (temp.)*, Mar. 1.

BALLOON BRANCH

The folg. promotions are made with effect from June 1:—  
*Sqn. Ldrs. to be Wg. Cdrs. (temp.):*—N. J. Hulbert, J. McLaren.  
*Flt. Off. J. Bailey to be Flt. Lt. (temp.)* Mar. 1.  
 The folg. promotions are made with effect from June 1:—  
*Flt. Offs. to be Flt. Lts. (temp.):*—G. V. Wright, S. T. Carrier, W. D. Brochie, F. S. Buchanan, C. B. North.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH

*Sqn. Ldr. to be Wg. Cdr. (temp.):*—W. C. Titheradge.  
*Flt. Lts. to be Sqn. Ldrs. (temp.):*—J. M. W. Omand, H. J. Williams, E. S. Williams.  
*Flt. Offs. to be Flt. Lts. (temp.):*—H. D. Thompson, V. C. Humfrey, J. R. Lloyd, J. G. Considine.

ACCOUNTANT BRANCH

*Flt. Lts. to be Sqn. Ldrs. (temp.):*—P. S. Potter, J. Macaldowie.

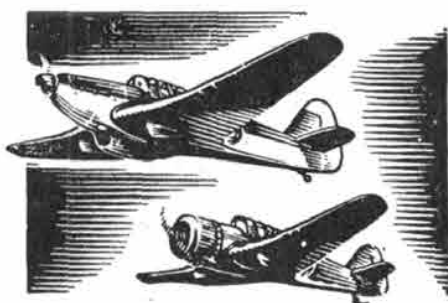
AUXILIARY AIR FORCE RESERVE OF OFFICERS

GENERAL DUTIES

*Wg. Cdr. to be Gp. Capt. (temp.):*—H. N. St. V. Norman.  
*Sqn. Ldr. to be Wg. Cdr. (temp.):*—P. D. O. Vaux.

WOMEN'S AUXILIARY AIR FORCE

*Flt. Offs. to be Sqn. Offs. (temp.):*—R. M. Kirk, K. F. Carr, B. Bradley, J. A. Williams.  
*Sec. Offs. to be Flt. Offs. (temp.):*—A. F. M. Magee, M. C. Breedon, G. M. Bellamy, A. McH. Aiton, M. E. Hammerton, J. Crymble, S. M. Frost, A. V. Hamilton-Grace.  
*Asst. Sec. Offs. to be Sec. Offs. (temp.):*—M. Lawson, Hon. V. M. Lyttelton, J. P. Sciortino, M. Calvert, J. L. Chavasse, W. M. Clayton-Parrott, H. F. Hewer, B. E. Jobson, M. E. Maitland, B. Morrison, B. M. A. Pearson, S. M. Taylor, P. Wahltuch, H. J. R. English, A. J. Holdsworth, M. B. Hordern, F. E. Kearney, M. E. McCulloch, P. M. Nielt, T. M. Pye, E. M. Riley, A. N. Grant, B. Taylor, G. E. Turner, R. A. Wells, J. M. Woodhead, C. A. Debenham, M. F. Hothersall, M. G. W. Laws, B. M. Thomson, B. Couper, M. Liddell, M. D. V. Beard, B. I. McG. Nichols, F. L. Beauchamp, S. F. Palmer, D. H. Britain, H. B. B. Prowse, D. M. Forgan, R. M. Lloyd, A. E. Williams, W. Skidmore, J. Foster, B. Chadwick, F. M. E. Macdonald, I. M. Bryan, H. A. Burris, P. M. Hanford, M. E. Kent, A. McW. MacCarrach, B. May, R. F. C. Morrigh-Stewart, L. Tregrouse, R. D. Beavan, W. M. Horsburgh, M. G. J. McTurk, C. M. Rawcliffe, M. M. S. Bates, R. E. Black-Hawkins, K. B. Eades-Eachus, J. I. H. C. Grant, E. T. Hildyard, M. M. Lutley, C. M. Martin, K. B. Moir, E. M. Starkey, C. D. Bentley, O. C. Glegg, E. Holliday, I. M. C. Maclean, E. M. Merrett, K. Riches, M. G. Borman, S. A. S. Carr, I. F. Du Toit, O. V. Evans, H. G. Kirby, E. Merchant, J. W. Nicholson, A. K. Sreell, P. K. Thatcher, V. L. F. Evans, A. H. Forse, B. Gordon-Jones, M. A. Jackson, M. V. Jones, M. H. Pairpoint, M. I. Thompson, E. Wilson, M. F. Wood, P. C. Sragg, T. R. A. Dalby, V. D. Dent, K. M. L. Glennie, J. L. E. Robinson, K. S. Sharp, A. C. Stewart, E. F. Teeco, P. E. Vandepier, M. O'Sullivan, J. M. Arnott, E. D. Coulthard, S. M. Drake-Brockman, J. Haig, H. M. C. Landreth, R. V. P. Pechey, K. C. Rees, M. M. Rudman, M. I. Watson, E. M. Atkinson, K. M. Brown, B. England, L. M. Feetham, M. F. Rogers, O. F. Webber, G. B. Woodmass, M. Ayre-Smith, L. F. Bell, J. M. B. Green, J. S. Grogno, I. E. Hope-Murray, E. M. Manly, M. M. Roberts, E. M. Sex, R. Walker, J. M. Winks, F. E. M. Colmore, R. O. Doyle, H. C. Fisher, N. Goodfellow, K. Harland, J. M. Hyde, S. M. McDougall, R. E. Pollock, E. Carlton, J. M. Andrews, H. J. Compton, H. M. Craven, E. A. Forde, O. M. Malet, J. M. Maule, C. H. Muir, M. G. Trevelyan, J. A. Palmer, B. B. Parker, B. D. Powlett, K. McG. Robertson, E. Talbot, K. C. F. Williamson, M. I. Wilson, U. G. Wilson, K. Woolgridge, L. M. Evans, J. M. Badgery, F. E. Ball, J. L. Beck, S. M. J. Bowring, R. Cazes, P. M. F. Cowdy, B. M. Martin, S. Eiloart, E. Francis, B. Gillett E Hay, M. N. Baldey, B. J. Hulton, I. L. Humphreys, E. A. Leathart, B. E. Leigh-Smith, S. Ottaway, M. B. Parsons, E. M. Potts, R. H. Schofield, C. F. Seabrook, J. M. Spencer, A. V. Stanley, B. H. Thatcher, M. L. Wareham, P. M. White, T. E. Wigfield, M. C. Wilcocks-n, V. T. Williams, G. E. Wyatt.



# Miles

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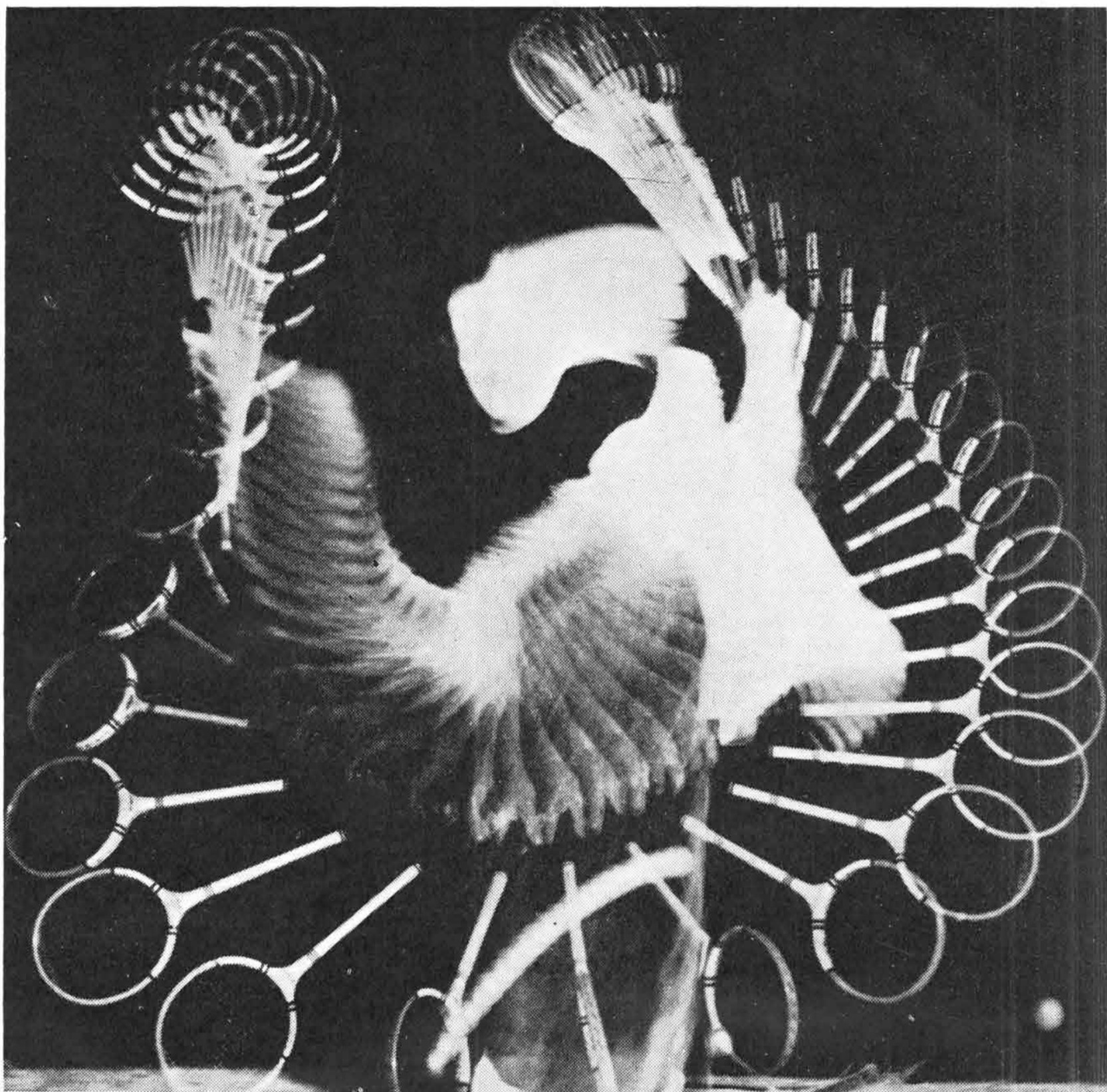
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**SERGEANT PARACHUTE.**—No relation to Wing Commander Sandbags of pre-War fame. The badge of the Parachute Troops.

*Air Ministry, June 9.*

**ROYAL AIR FORCE REGIMENT**

ROYAL AIR FORCE.—Flt. Sgt. P. R. Little to be Plt. Off. on prob. (emergency), Feb. (Sen. Nov. 18).

ROYAL AIR FORCE VOLUNTEER RESERVE.—M. MacD. Stewart to be Flt. Lt. on prob. (emergency), Dec.

To be Plt. Offs. on prob. (emergency), Feb. (Sen. Nov. 18):—Cpls.: C. W. Pybus, Robert Quayle, Stanley Thane. Ldg. Acn.: R. A. Hughes, E. W. Stockdale. Acn. 1st Cl.: J. E. Kelly.

**WOMEN'S AUXILIARY AIR FORCE**

To be Asst. Sec. Offs. on prob. (emergency):—May: M. M. Amphlett, H. M. Armstrong, R. M. Bateman, P. M. Bedworth, E. M. Bland, N. J. Blood, E. M. Fruntnell, M. F. Bullock, M. C. Burke, J. H. Clifton, E. H. Carmichael, E. R. Cox, B. F. Cummings, W. P. Daniel, L. I. Dawson, N. P. Dickens, M. O. Podd, R. L. E. Farrow, L. M. Fenn, N. S. Fielder, I. E. Foxon, D. E. Frankland, H. W. Fraser, M. D. F. Gerard, E. E. Giles, Gwendolen Glassey, M. L. Grey, E. E. Howlett, E. S. Hubbard, M. McI. Hurl, Phyllis Ingram, M. F. Kay, W. B. King, D. J. Lang, D. K. Leyden, A. B. McCorquodale, J. T. McLaughlan, M. M. Man, E. E. M. March, C. M. Martin, C. I. Meredith, Mary Middleton, A. W. G. Miller, E. S. Moody, U. M. Moore-Dillon, M. D. Mumford, S. C. Pitt, G. G. Pollock, M. R. Pollock, M. M. Powell, S. M. Readhead, P. M. Reid, S. I. Ripley, K. E. Robertson, T. B. Robins, R. G. Ropner, L. S. Rountree, Moira Ryan, Hilary Scott-Maxwell, B. M. Smith, M. T. Steele, D. M. Suswin, M. E. L. Swan, P. M. Unwin, H. D. McG. Whitton, H. T. Worrall, S. S. Allen, M. V. Inches, V. I. C. Dorman, P. D. Lindsell.

Asst. Sec. Offs. (prob.) resign their comms., Apr. 20:—M. E. Bleby, B. O. C. Molesworth.

Asst. Sec. Offs. resign their comms. on account of ill-health, June 9:—U. R. Coote, A. L. Griffiths.

*Air Ministry, June 16.*

**ROYAL AIR FORCE**

GENERAL DUTIES BRANCH.—2nd Lt. J. M. Reed, 10th/10th Baluch R., I.A., to be Plt. Off. (temp.) on being employed with the R.A.F. Mar.

To be Plt. Offs. on prob. (emergency):—Wt. Offs.: Feb.: A. V. Bone, W. J. Etherington. Mar.: Bert Asson. May: H. H. Whitehead, D.F.M. Temp. Wt. Off.: Feb.: J. A. Reid. Flt. Sgts.: May: J. N. Jones, R. J. Reynolds, D.F.M. Sgts.: Jan.: L. G. Crane. Feb.: J. D. Bishop, F. A. Hurley. Mar.: D. D. Warwick. May: P. E. O'Meara, Ronald Massie. Cpl.: Apr.: G. H. Searle.

Flg. Offs. (prob.) confmd. in appts.:—Feb.: B. F. Williamson. Apr.: G. B. Jones, D.F.C., R. E. Williams.

Plt. Off. (prob.) R. Y. Powell confmd. in appt. May.

Flg. Off. (prob.) J. Watson, A.F.C., confmd. in appt. Oct., and to be Plt. Lt. (war subs.). May.

Plt. Offs. (prob.) to be confmd. in appts. and to be Flg. Offs. (war subs.):—May: H. E. Bodien, D.F.C., J. A. McCudden, L. V. Harcourt, D. Boyd-Stevenson, F. A. W. Coles, G. F. Hodder, F. W. Hoddinott, P. F. O'Keefe, A.F.M., H. F. Payne.

Sqdn. Ldr. J. A. S. Brown to be Wg. Cdr. (temp.) Dec. (Subs. for notifi. of Mar. 27).

Flg. Offs. to be Flt. Lts. (war subs.):—Mar.: I. W. R. Walmsley. Apr.: D. H. Davis, D.F.C., R. W. Ferguson, L. F. Humphrey, A.F.M., J. F. Sach, D.F.C., F. A. B. Tams, P. H. Watts, D.S.O., D.F.C., P. J. Colson, I. C. Kirk, J. L. Scott, F. W. Higginson, D.F.M., V. Parker, H. C. Winter-Taylor, J. W. P. Perkins, H. D. Newman, W. H. Culling, B. A. Davidson, L. A. Mackay, P. A. W. Thomas, G. R. Wooll. May: P. C. Elliott, B. P. O'Duffy, R. M. Pinkham, D. A. Thomas, L. S. B. Worrall, M. H. Mounsdon, F. W. Hillman, E. D. Osborn, C. V. Brown, J. Hurry, D.F.C., P. Bray, G. McKenzie. June: A. B. Smith, W. Fletcher, D.F.M., E. J. Spencer (Sen. Apr. 25), J. L. Evans (Sen. May 9). June:

R. Bailey (Sen. Apr. 25), L. G. James (Sen. May 9), N. S. C. Chapman, G. A. L. Elliot, D.F.C. (Sen. Apr. 25), G. Cherrington, L. R. C. Russell, A.F.C. (Sen. Apr. 25), J. H. Lowes, R. W. Pearson, D.F.C. (Sen. May 2).

To be transf. to the Tech. Br. Apr. 24, 1940:—Wg. Cdrs.: G. E. G. Lywood, G. P. MacDonaid, Sqdn. Ldr. (since promoted) N. G. Goodman.

Plt. Off. (prob.) L. C. James is transf. to the Admin. and Spec. Duties Br. May 30.

Flg. Off. C. S. S. Rendie resigns his short service commn. Feb. 11.

The notifi. of June 9 concern. Flg. Off. R. J. Brown is cancelled.

TECHNICAL BRANCH.—To be Flg. Offs. on prob. (emergency):—Wt. Offs. Dec.: T. H. Hanson (Sen. June 26), W. C. Smith (Sen. Aug. 19). Jan.: George Asher (Sen. Aug. 7), R. A. Irving (Sen. Aug. 1). Feb.: J. R. Mitchell (Sen. Dec. 15). Apr.: Beauchamp White (Sen. Apr. 1), E. R. Woof (Sen. Nov. 17).

To be Plt. Offs. on prob. (emergency):—Wt. Offs.: Oct.: R. G. Brown (Sen. Aug. 26), Alexander Singer (Sen. July 10), F. C. Bracher (Sen. Oct. 17). Nov.: R. B. Craig (Sen. Oct. 10), F. R. J. Gunn (Sen. Oct. 24), A. A. Gray (Sen. July 18). Dec.: C. J. Wilkinson (Sen. July 24), Alexander Cormack (Sen. Oct. 29), J. F. Bond (Sen. Nov. 28), Arthur Mowforth (Sen. Dec. 11). Jan.: F. M. Thomas (Sen. Nov. 28), Jim Mowforth (Sen. Nov. 27), L. L. Morgan (Sen. Dec. 18), A. R. Gilding (Sen. Dec. 18), H. W. Rowe (Sen. Nov. 13), F. J. Fenner (Sen. Nov. 27), E. T. James, G. W. Trayford (Sen. Dec. 11), W. H. Pitfield (Sen. Oct. 27), A. St. J. F. Smith (Sen. Nov. 13). Feb.: A. D. Cromar (Sen. Jan. 15), Peter Halligey (Sen. Jan. 8), Mar.: G. E. Van Look (Sen. Jan. 14), Reginald Tillyard (Sen. Feb. 8), L. W. Gibson (Sen. Feb. 21). Apr.: F. R. C. Pitt (Sen. Mar. 26). Act. Wt. Offs.: Jan.: W. T. Ousley (Sen. Dec. 2), N. L. Wrightson (Sen. Dec. 23). Flt. Sgts.: Oct.: P. S. Gage (Sen. Oct. 7), Harry Bean (Sen. Oct. 7), T. L. Davies (Sen. Mar. 22). Nov.: C. H. W. Billinger (Sen. Oct. 17), Dec.: J. W. Dunn (Sen. Oct. 29), B. H. Goodger (Sen. Nov. 2), S. W. Bailey (Sen. Nov. 7). Jan.: Cedric Gardner (Sen. Nov. 28), G. McD. Stewart (Sen. Dec. 8), L. J. Peters (Sen. Dec. 2), G. L. Hoyes (Sen. Dec. 3). Feb.: J. B. Willis (Sen. Jan. 11), F. G. Weston (Sen. Jan. 17). Mar.: John Arthur (Sen. Feb. 5), Robert Bromley (Sen. Jan. 29). Apr.: F. B. Roberts (Sen. Dec. 18). Sgts.: Jan.: J. D. Flintham (Sen. Oct. 11). Feb.: R. B. Stewart (Sen. Dec. 23). Cpls.: Jan.: P. S. Close (Sen. Nov. 26), M. J. Joyce (Sen. Nov. 28). Ldg. Acn.: Dec.: D. E. Kleboe (Sen. Nov. 7).

To be Act. Plt. Offs. on prob. (emergency):—Wt. Offs.: Feb.: A. E. G. Pye (Sen. Dec. 11). Apr.: G. E. Lazzary, R. J. Jones, H. G. Willson (Sen. Jan. 8), C. V. S. Sexton (Sen. Jan. 15), Gordon Quane (Sen. Feb. 12), H. D. H. Window, J. E. Murrells (Sen. Jan. 8), L. C. C. Armstrong (Sen. Jan. 15), J. D. Sheen (Sen. Feb. 19), Michael Hehir (Sen. Feb. 26), D. W. Stirling (Sen. Mar. 5), S. E. H. Freeman (Sen. Mar. 12). May: W. C. Hawken (Sen. Nov. 13), R. B. Bennetto (Sen. Jan. 27), J. E. Higgins (Sen. Mar. 12), George Davey, W. A. Tait, H. T. Regester (Sen. Mar. 19), E. E. Kirk, L. W. Capp (Sen. Feb. 19), E. S. Selleck (Sen. Mar. 25), Alexander Fraser (Sen. Mar. 26). Act. Wt. Offs.: Mar.: J. F. Humphreys (Sen. Jan. 26). May: F. G. Thourard (Sen. Mar. 30). Plt. Sgts.: Nov.: W. J. Dunne (Sen. Oct. 2). Dec.: Frank Jackson (Sen. Aug. 21). Feb.: L. A. Drew (Sen. Nov. 27), E. H. Bruce-Clayton (Sen. Dec. 11). Mar.: C. G. Prentice (Sen. Nov. 13). Apr.: D. R. Lodge (Sen. Dec. 4), John O'Connor (Sen. Feb. 12), R. A. Waters (Sen. Mar. 5), J. S. Duffy (Sen. Jan. 7), A. E. Rowlands (Sen. Jan. 29), T. C. Smith (Sen. Sept. 5), C. A. Wood (Sen. Oct. 6), N. F. Ruse (Sen. Nov. 10), A. L. Crocker (Sen. Nov. 20), F. S. Armstrong (Sen. Nov. 22), W. J. Burton, W. A. Hawkes (Sen. Dec. 30), Roy Tomlinson (Sen. Jan. 6), F. R. S. Holben (Sen. Jan. 7), L. J. C. Ward (Sen. Jan. 27), G. W. M. Merritt (Sen. Jan. 29), H. G. Atterwill (Sen. Feb. 12), S. A. Full (Sen. Feb. 16), G. A. Crabb (Sen. Feb. 24), Charles Jordon, T. D. Spencer (Sen. Feb. 26). May: W. J. H. Miller (Sen. Feb. 2), S. W. G. Holroyd (Sen. Feb. 19), T. W. Sluman, J. C. Davies (Sen. Mar. 4), H. E. Alexander (Sen. Mar. 5), I. E. Hughes (Sen. Mar. 9), D. M. Hamar (Sen. Mar. 12), Dennis Wheelhouse, Richard Douglas (Sen. Feb. 26), Harry Pearson (Sen. Mar. 5), R. C. Mitchell (Mar. 25), T. B. Robinson (Sen. Mar. 26), W. A. Lamb (Sen. Apr. 8). Sgts.: Apr.: G. C. C. Lass (Sen. Feb. 21), T. M. G. Bury (Sen. Oct. 24), T. R. V. Tait, (Sen. Feb. 23), J. R. Jaques (Sen. Oct. 29), R. S. Vovle (Sen. Dec. 30). May: G. W. Tucker (Sen. Feb. 2), E. J. Barber (Sen. Feb. 19), J. E. Knox (Sen. Mar. 16). Cpls.: Oct.: V. V. Vockins (Sen. Aug. 28). Feb.: A. W. Keen (Sen. Aug. 28).

Flg. Off. (prob.) R. Wright, D.F.M., confmd. in appt. Mar.

Plt. Off. (prob.) B. G. Greenbank confmd. in appt. and to be Flg. Off. (war subs.) Feb. (Sen. Jan. 27).

Plt. Off. (prob.) R. E. Douglas, G.C. confmd. in appt. and to be Flg. Off. (war subs.). Nov. (Sen. Nov. 7). (Subs. for notifi. of Mar. 24).

Plt. Off. (prob.) R. F. J. Barber confmd. in appt. Oct. to be Flg. Off. (war subs.). June. (Sen. Feb. 21).

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.) Feb. and confmd. in appts.:—A. E. Clift. May. J. Healey. June.

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.) Mar. and confmd. in appts.:—C. W. Oakes. May. R. Cunningham. June.

Flg. Offs. to be Flt. Lts. (war subs.) Mar. (Sen. June 26):—E. J. Ryder, A. D. Jackson.

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Feb.: D. J. N. Rebbeck. Mar.: E. Johns, H. G. Sparks, W. B. Poyner.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—Jan.: A. R. Boardman (Sen. Dec. 11). Feb.:

S. C. L. Ro'es (Sen. Dec. 21). Apr.: A. T. Jarrett (Sen. Mar. 20).

BALLOON BRANCH.—The notifi. of Mar. 27 concern. Flg. Off. R. C. B. Thackeray is cancelled.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—To be Flg. Offs. on prob. (emergency):—Wt. Offs.: Nov.: T. J. Moore (Sen. Aug. 21). Apr.: H. R. Green (Sen. Oct. 19), Horace Tilzey (Sen. Aug. 26).

To be Plt. Offs. on prob. (emergency):—Flt. Sgt.: Dec.: Henry Wood (Sen. June 30). Sgts.: Nov.: C. T. Beeson (Sen. Oct. 11). Feb.: D. A. E. Pottinger (Sen. Dec. 6).

Flg. Offs. (prob.) confmd. in appts.:—Apr.: G. E. Penwill. May: S. L. Reeve. June. C. Adams. Plt. Off. (prob.) M. Devlin confmd. in appt., Feb., and to be Flg. Off. (war subs.). Mar. (Sen. Feb. 5).

Plt. Off. (prob.) R. How confmd. in appt., Mar., and to be Flg. Off. (war subs.). Jan. (Subs. for notifi. Mar. 31.)

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Jan.: S. H. Phillips, W. J. N. Wakefield. Feb.: A. H. Cook. Mar.: K. J. Dunkinson, J. E. Palfreman.

AMENDMENT.—In notifi. of May 19 concern. D. A. Sinclair, for Flg. Off. read Plt. Off. (prob.) (since promoted).

EQUIPMENT BRANCH.—To be Flg. Off. on prob. (emergency):—Wt. Off.: Apr.: R. F. Knowles (Sen. Mar. 16).

To be Plt. Offs. on prob. (emergency):—Oct.: E. A. King (Sen. Oct. 7). Jan.: F. W. Herbert (Sen. Nov. 28). Sgt.: Apr.: A. H. Impey (Sen. Feb. 28).

Flg. Off. (prob.) C. S. T. Vaughan confmd. in appt. June.

ACCOUNTANT BRANCH.—Plt. Off. (prob.) H. A. G. Warren confmd. in appt. and to be Flg. Off. (war subs.). May.

MEDICAL BRANCH.—Miss M. Calvert, M.B., B.Ch. Medical Off. with the relative rank of Flg. Off., is promoted to the relative rank of Flt. Lt. (war subs.). May.

**RESERVE OF AIR FORCE OFFICERS**

GENERAL DUTIES BRANCH.—F. M. Greenless to be Sqdn. Ldr. in class CC. May 8.

Air Vice-Msh. Sir Tom I. Webb-Bowen, K.C.B. C.M.G. (R.A.F. ret.), to be Air Vice-Msh. in class CC. May 16.

Flg. Offs. to be Flt. Lts. (war subs.):—R. A. Yates-Earl. Feb. 22. M. Paddle. May 1.

Flt. Lt. A. J. Edmunds is transf. to the Tech. Br. Apr. 30.

Flt. Lt. W. A. Mackay, D.C.M., is transf. to the Admin. and Spec. Duties Br. June 4.

AMENDMENT.—In notifi. of Apr. 7 concerning K. E. Parker, for Flt. Lt. read Sqdn. Ldr.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—Flt. Lt. C. H. Williams to be Sqdn. Ldr. (temp.) May 29. (Sen. Dec. 1.)

**ROYAL AIR FORCE VOLUNTEER RESERVE**

GENERAL DUTIES BRANCH.—To be Plt. Offs. (emergency):—Feb.: W. G. M. Rothschild, Bernard Hamilton, D. K. Young. Mar.: N. H. Bowring, Stanley Hilton, W. W. McRae. Apr.: T. A. Milne.

To be Plt. Offs. on prob. (emergency):—May: Arthur Lee-White. Wt. Offs.: Feb.: H. W. Castle. May: J. W. N. Bailey. Flt. Sgts.: Feb.: J. T. Gilbert. May: A. W. Green, D.F.M., Bruce Pennycuik, G. E. Smith, A. V. Tumblebridge, Basil Brown, Norman Latham, H. T. Skett. Temp. Flt. Sgts.: May: M. L. Daniels, M. J. Nolan, D.F.M., M. D. F. Donnai, C. R. Harrod. Sgts.: July: J. R. Kay. Sept.: Alan Bartlett, H. W. Sheen. Nov.: Archibald Brember, E. E. Freeth. Jan., 1942: F. J. Haddon, Robert Shields, N. C. Berrisford, F. J. Brown, C. T. Collin, D. H. Eden, Frank Hansford, G. D. R. Davies, H. J. Dee, R. E. Gabbittas, H. D. F. Amor, Noel Andrew, A. P. Clark, J. W. Drake, E. F. Davis, C. de C. Findlay, P. J. Hill, J. M. Ireland, H. F. A. Dapot, P. R. Driver, W. B. Everett, A. E. Abraham, C. S. Harrison, R. J. Moubray, R. MacD. Napier, P. F. Perry, J. D. Wilson, P. A. Worth, Ralph Ritz. Feb.: J. P. Dornan, Harry Richardson, G. O. Lace, W. R. Shuttleworth, E. W. Lowden, F. A. Davies, W. S. Gaunt, M. I. R. Habgood, W. G. F. Fisher, R. F. Hodge, N. C. Johnson, L. E. Hyde-Parker, C. F. Potter. Mar.: R. E. Davies, Geoffrey Holt, F. S. Leyland, W. F. Lockwood, I. McL. Scott, Norman Piper, A. E. Tyler, R. E. Voller, J. H. Wilsher, R. J. Austin, R. F. Bass, C. E. Bearman, J. K. Carruthers, W. J. Anderson, J. H. Bracewell, E. G. Blakeway, T. E. Eardley, Alan Guthrie, Edwin Hibbert, G. E. Jackson, P. T. S. King, A. E. Dowling, A. C. Flood, J. H. Gaston, J. E. Gilder, C. C. Kane, Ralph Kirker, Michael Lloyd, A. M. Davidson, T. G. Eyre, J. W. Fowler, V. H. Jaynes, P. J. Bryant, John Burbridge, Nicholas Falkinder, P. G. F. Brown, D. M. Moss, S. N. Beason, Hector Robertson, B. G. Robinson, J. N. Wright, V. J. White, A. B. Anderson, J. R. Baldwin, J. F. L. Bowes, Thomas Browne, Alan Beal, Bertie Brown, J. R. Chandler, K. G. Bickers, L. C. J. Brodrick, L. F. Chapman, S. S. Brand, D. D. Davies, M. T. S. Davis, Michael Donaldson, W. R. Drew, E. J. Dorman, E. H. J. Dixon, Alexander Dunn, W. R. Forester, Frank Garside, C. P. Fuller, C. C. Hendley-Cross, A. W. Marsden-Levy, J. O. B. Wraith, W. H. Swift, H. J. Bates, D. J. Bishop, Edward Reynolds, L. W. Rutter, G. T. Curtis, M. G. T. Allen, J. A. Long, J. E. Oakes, W. L. Powell, J. D. Telfer, G. M. Tuck, Douglas Boyle, A. R. Edwards, Eric Martin, K. R. J. Pennington, L. W. Pilgrim, John Rennolds, K. H. Tan, R. A. H. White, R. P. Stone, J. F. Carnegie, J. M. De Villiers, Edward Goodhead, T. A. Griffith, D. A. Hine, John Lottimer, J. N. Myers, D. H. Reid, R. C. Wallace, D. C. L. Webber, E. S. Ramsay, J. E. Ticker, R. E. Watson, J. L. Taylor. Apr.: James Bevan, Peter Bowen, L. G. Burgess, M. W. Buttler, F. E. H. Durrant, Frank Ellis, G. W. Leadsom, F. G. Rumbles, D. M. Wilson, T. G. Watson. May: L. E. Bradbury, Jack Cheney, Bernard

Gunnill, G. W. Hammond, J. B. Burbidge, N. A. T. R. Cowley, J. E. Ford, M. G. Healy, H. A. Radcliffe, G. V. Slide, E. A. Baldwin, R. W. Heron, W. R. Stephens, W. H. Webb, Clifford Chadwick, N. C. Cartwright, W. H. Taylor, J. H. Akerman, B. A. Arterton, P. M. Bicket, I. A. C. Blue, A. C. I. Brown, J. C. Buckland, G. W. Adamson, Roy Bushnell, Act. Sgt.: Feb.: J. F. B. Wallen. Cpls.: Mar.: T. E. Randle, H. S. Smith. Ldg. Acms.: Nov.: H. G. Pugh. Dec.: P. C. O'Neil-Dunne. Jan.: A. M. Roy. Feb.: W. D. Jones, Jeffrey Hayward, S. A. Hensby Frank Lally, R. H. Vaughan, W. R. Pertwee, S. R. Sherwin, J. V. Snell, F. E. Allen, H. V. Plumb, E. W. Mitchell. Mar.: A. S. Hawkins, D. G. Knock, H. E. Quinn, N. M. Redington, J. M. Wright, D. E. Breed, Douglas Rogers, Geoffrey Oulton, H. C. Wheel, Peter Anderson, R. C. Morris, L. E. Richbell, A. J. Owens, P. A. J. O'Brien, William Osterstock, G. S. M. Pontius, J. R. March, P. B. Nanton, G. W. Williams, H. S. Wilson, S. K. Wix, R. L. G. Worthy, Robert Yerkess, David Linley, J. H. Burgess, W. M. House, R. A. Irving, G. K. Pickering, G. R. Royde. Apr.: F. J. Garvey, W. J. Moffat, John Walker, P. D. White, D. H. Haycock, R. F. Neuss, N. H. Walker, A. C. Kelly, H. W. Kratz, W. R. Mason-Tulby, D. M. Katz, A. A. H. Lindley, Reginald Swift, H. J. Dodgson, J. O. Mathias, T. G. J. Parker, D. C. Payne, J. B. Poad, C. E. Nicholson, R. R. Exeter, Reginald Wallace, John Niven, K. J. Pierpoint, R. S. Robinson, B. A. Walker, N. M. Browdy, John Scales, H. G. Sommers. May: T. S. Harris.

To be confmd. in appts.:—Flg. Offs. (prob.):—Apr.: J. W. Jordan. May: J. H. B. Burgess. Plt. Offs. (prob.):—May: R. C. G. Rosevear, D.F.M.

Plt. Offs. (prob.) confmd. in appts. and to be Flg. Offs. (war subs.):—Oct.: J. G. Rogers (Sen. Sept. 29). Dec.: H. A. P. Peall. Feb.: G. C. S. Macnamara, S. F. Hodsman, P. C. Sawyer (Sen. Feb. 17). Mar.: J. F. C. Gallagher, F. B. McCulloch, L. G. Walker. Apr.: E. M. Collard, L. W. Kitchen, R. J. Hardy, D.F.C., E. Fenwick. May: G. Dring, H. Hopkins, A. V. Donati, C. D. S. I. McDevitte, K. G. Hubbard, E. Minty, E. K. Sinclair, C. H. Muggeridge, F. A. Taylor, D. P. Boulnois, G. M. Bridges, B. H. D. Foster, G. W. V. Keedle, K. R. Mason, R. E. Pratt, J. L. Ramson, G. F. Stent, H. A. Turner, D. A. Woolfe, B. H. Worts, S. C. Bushell, C. R. Jacobs, W. G. James, A. C. B. Morgan, W. J. Pershke, J. A. Bright, M. W. Colledge, D. Roughley, R. J. Shuffelbotham, H. W. Smethurst, K. R. Lusty, G. S. Bowers, G. F. Georgeson, D.F.C., G. Hunter, C. A. Ocroft, J. Singleton, E. B. Raybould, P. Saunders, E. J. Woodhead, R. G. Allen, A. I. Albertson, W. T. G. Gabriel, L. Broadhurst, W. Dunnett, H. G. Goldie, K. Greenwood, A. R. McAra, J. F. Brookes, T. W. G. Godfrey, W. McTurk, R. C. Macandrew, C. H. L. May, A. E. Meadows, B. J. Redmond, D.F.C., F. C. Young, H. W. Mackelvie, C. J. Beach, A. A. Betts, J. E. Brown, E. Foster, R. A. Gifford, J. S. Le Poer Trench, A. J. H. Stewart.

Plt. Off. (prob.) B. J. Marsden to be Flg. Off. on prob. (war subs.) Oct. (Sen. Sept. 16), confmd. in appt. Jan. 1 (Subs. for notifi. of Mar. 31).

Flg. Offs. to be Flt. Lts. (war subs.):—Apr.: W. E. A. Duff, R. Eytton-Williams, W. A. K. Carr, J. E. Thompson, J. E. A. Foster, S. W. Webster. May: A. G. Little, L. T. Ricketts, H. S. Uberoi, H. A. Stratton, C. J. Moore, A. G. Osmand, D. A. G. Parry, L. W. Wenman, J. M. Jones, L. G. Watson, F. S. Davies, N. M. Gerrard, K. G. Crockett, E. L. Sprosson, J. D. Chown, F. T. Flower, W. T. A. Womack, C. T. Campbell, K. M. Carver, R. S. Don, P. A. Newton, E. G. Parkin, W. Treger, R. Quick. June: W. E. G. Heanly, D.F.C., A. Brown (Sen. May 9), G. L. Howitt, D.F.C. (Sen. Apr. 25), H. F. Breakspear (Sen. Apr. 25), P. Blandford (Sen. Apr. 25).

Plt. Off. O. M. Armstrong to be Flg. Off. (war subs.). May.

Plt. Off. (prob.) D. F. Peel to be Flg. Off. on prob. (war subs.). May.

Plt. Offs. (prob.) to be transf. to the Admin. and Spec. Duties Br.:—J. V. K. Beddoe. May 30. L. W. C. White. June 4.

Comms. terminated:—Plt. Off. (prob.) P. R. Bolton. June 6. Act. Plt. Off. (prob.) W. Y. Robinson. June 4.

The notifi. of June 9 concern. Flg. Off. H. P. Aiken is cancelled.

TECHNICAL BRANCH.—To be Plt. Offs. on prob. (emergency):—Sgts.: Donald Greenroyd. Jan. (Sen. Nov. 22). W. H. Dron. Mar. (Sen. Feb. 21).

To be Act. Plt. Offs. on prob. (emergency):—Apr.: G. J. Barrington, L. F. Bretherton, W. A. Crane, W. T. Iiffe, Laurence Pattinson, J. C. Thompson. May: E. C. Cassidy, Norman Davis, P. J. Farr, G. M. Heath, W. J. K. Lawton, William Pepperell, D. G. Richards, L. W. Rodway, B. C. Sherren, G. D. Speake, R. H. P. Stafford, J. F. A. Stark, John Dryburgh, F. P. Rahill, V. A. Willard. Wt. Offs.: May: J. M. Fleet (Sen. Mar. 19), Barry Waite (Sen. Feb. 26), C. J. E. Rockall (Sen. Feb. 26). Flt. Sgts.: Feb.: Raymond Jones (Sen. Nov. 7). Mar.: E. H. Jones (Sen. Jan. 21), D. L. Hillman (Sen. Feb. 19). May: H. D. E. Ebbs (Sen. Mar. 5). Sgts.: Apr.: D. A. Humphreys (Sen. July 31), L. N. J. Williams (Sen. Dec. 22). May: G. C. Rand (Sen. Jan. 15), P. F. Halfhide (Sen. Mar. 5), A. M. Hearn (Sen. Mar. 19), T. R. Bainbridge (Sen. Mar. 16), S. J. Knatt (Sen. Mar. 30). Cpls.: Oct.: F. W. Hodgson (Sen. Sept. 18). Apr.: A. R. Higgins (Sen. Nov. 20), F. G. Mann (Sen. Feb. 24). May: D. A. Webb (Sen. Jan. 29), A. B. Boxall (Sen. Mar. 9), Malcolm Campbell (Sen. Mar. 19), C. A. Pequignot, C. A. Lea (Sen. Mar. 26). Ldg. Acms.: Apr.: A. W. Ingram (Sen. Nov. 20), Robert Bulbick (Sen. Nov. 24). May: T. R. L. Mackenzie (Sen. Mar. 9), J. W. Powell (Sen. Mar. 23), W. K. Robinson (Sen. Mar. 30). Acms. 1st Cl.: Oct.: M. I. Rickers (Sen. Sept. 28). Jan.: Thomas Pratt (Sen. Oct. 23). May: R. A. Reid (Sen. Jan. 28). Acms. 2nd Cl.: May: Alexander Inglis (Sen. Mar. 5), Peter Donohue (Sen. Mar. 19).

Plt. Off. (prob.) P. S. Hal'as confmd. in appt. Mar.

Plt. Off. (prob.) E. S. Sherwell confmd. in appt. Dec., and to be Flg. Off. (war subs.) Feb.

Plt. Off. (prob.) D. Newton confmd. in appt. Aug., and to be Flg. Off. (war subs.) Feb.

Plt. Offs. (prob.) confmd. in appts. Oct., and to be Flg. Offs. (war subs.):—Mar.: A. K. Caris, R. M. Edwards.

Plt. Off. (prob.) E. Barton confmd. in appt. Dec., and to be Flg. Off. (war subs.) June.

Plt. Offs. (prob.) to be Flg. Offs. (war subs.) June, and confmd. in appts.:—Sept.: J. A. Easthope, D. W. Millard, G. G. Wingfield, Oct.: L. S. Jay, R. J. Ginn, J. T. Arklay, Y. Gilutz, Nov.: A. Armitage, F. W. Quiggin, C. M. G. Wallwork, V. H. Bailey, A. F. Gay, J. F. Harriman, A. H. Wright. Dec.: A. R. Margary.

Plt. Offs. (prob.) confmd. in appts. Oct., and to be Flg. Offs. (war subs.):—June: J. D. Bennett, P. B. Aitken (Sen. Apr. 26).

Plt. Off. (prob.) D. J. Saunders confmd. in appt. Oct., and to be Flg. Off. (war subs.) June (Sen. Apr. 22).

Plt. Off. (prob.) F. W. Morgan confmd. in appt. Oct., and to be Flg. Off. (war subs.) June (Sen. Apr. 25).

Plt. Off. (prob.) A. A. Young confmd. in appt. Nov., and to be Flg. Off. (war subs.) June (Sen. May 15).

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—Jan.: W. W. Absom, J. O. Blaksley, J. H. Boshier, J. A. Brayshay, R. T. Gill, C. A. Halstead, P. J. Hillman, L. V. Illing, B. Lednor, R. S. M. Lees, B. E. Manistre, D. W. C. Ramsay, W. G. Senior, C. E. Vincent. Mar.: R. E. Powell (Sen. Jan. 20). Apr.: D. S. Jones. May: R. Hellewell, N. S. Rogers, H. B. Lewin, R. B. Jacobi, W. P. Murray, A. Laws, P. H. W. Priestley, E. B. Fielding, G. E. Felton, R. J. M. Harvie (Sen. Dec. 28), F. J. Gibney (Sen. Apr. 28).

The commn. of Act. Plt. Off. (prob.) L. Bilmes is terminated. June 3.

The notifi. of May 19 concern. H. G. Mugridge should have appeared under R.A.F.V.R. and not R.A.F.

BALLOON BRANCH.—Plt. Offs. (prob.) confmd. in appts. and to be Flg. Offs. (war subs.):—May: B. W. Wiggins (Sen. Apr. 22). June: J. M. Twigg (Sen. Apr. 22), F. J. Peacock (Sen. May 23).

Flg. Off. A. W. Smith relinquishes the rank of Flg. Off. at his own request and is transf. to the Gen. Duties Br. in the rank of Plt. Off. Apr. 23.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.

—To be Plt. Offs. on prob. (emergency):—Flt. Sgt.: Dec.: W. J. Bass (Sen. Oct. 30). Act. Flt. Sgt.: Feb.: N. K. Adams (Sen. Dec. 6). Cpls.: Mar.: S. E. Bishop (Sen. Jan. 29). Apr.: Kenneth Addinell, B. L. Page (Sen. Nov. 3). May: James Rudden (Sen. Mar. 27). Ldg. Acms.: May: J. G. C. Jackson (Sen. Mar. 27). Acms. 1st Cl.: Apr.: R. E. M. Orledge, Hugh Kent (Sen. Feb. 18). May: Oswald Beynon (Sen. Feb. 18), G. F. Edwards (Sen. Feb. 18). Acms. 2nd Cl.: Apr.: James Stewart (Sen. Feb. 18). May: E. F. Richards (Sen. Mar. 27), G. A. Brown (Sen. Feb. 18), William Lees, J. H. Williams (Sen. Mar. 27).

To be Act. Plt. Offs. on prob. (emergency):—Dec.: B. M. Harrison, S. H. J. Garne, M. K. Garnett, Clifford Allday, Richard Beadon. Apr.: H. T. Gaddum. Sgt.: May: R. J. Smith (Sen. Apr. 2). Cpls.: May: J. R. Pimlott, E. A. Heron, H. J. Dow (Sen. Apr. 27).

To be granted Hon. commns. as Flg. Offs.:—May 22: F. S. Megnin. May 26: G. S. Noble.

Plt. Offs. (prob.) confmd. in appts. and to be Flg. Offs. (war subs.):—Oct.: J. Warham, Feb.: C. M. Sugden, G. R. Western, D. W. Gaskell, F. Tomlinson, F. D. Thom, J. H. Baldwin, S. E. Carlton, G. V. L. Humphreys. Mar.: R. McE. Sutherland, W. A. Chase, L. M. Apps, C. A. Arnett, R. Bickley, A. G. Penn, A. S. Hersee, A. G. A. Morrison, A. J. Williams, T. R. W. Cropper, G. Irving, R. Goody, A. R. Dickinson, D. P. Hurrell, C. H. Lee, F. H. V. Robinson, H. E. Weatherall, H. I. Steven, H. Steels, R. K. Emerson, E. F. A. Holloway, E. K. Davies, J. McE. Drummond, R. B. Hamilton, S. H. Harris, G. Black, H. Garnett, E. I. Halliday, S. W. Ratchiffe, N. F. Rigden, W. G. C. Robinson, E. C. Spencer, K. R. Webb, E. W. Weekley. Apr.: C. F. Walker, E. J. B. Eaton, R. D. H. Smith, G. B. Barnett, E. J. Newton, G. T. Broadhurst. May: L. B. C. Howard, R. E. Lee, G. D. Marks, F. T. Neal, H. C. Wilson, B. Le F. B. Elliott, A. B. Giles, T. J. F. Hobley, J. T. Icke, G. E. Marx, W. G. Youle, H. B. Gibson, A. B. Dennistoun-Sword, J. G. Hobbs, A. R. Pugh, R. O. Williams, D.F.C., R. Brooks, C. Buckley, R. L. Colley, R. V. Kennedy, C. T. Newhouse, S. F. J. R. Perry, L. Vincent, H. E. Castell, E. Evans, H. O. Faircloth, J. F. Willatt.

Flg. Offs. (prob.) confmd. in appts.:—Feb.: C. A. B. Young, C. E. H. Verity, C. A. Pryce. Mar.: F. W. Cronne, I. K. Macalister.

Plt. Offs. (prob.) to be Flg. Offs. on prob. (war subs.):—Feb.: W. G. Eason. May: L. J. Mitchell.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—Oct.: W. G. Bishop (Sen. Aug. 23). June: D. D. A. Hill, J. O. Griffin, T. L. Chadwick, F. W. Clayton, L. Dean, R. O. Foster, H. B. Johnson, W. O. Jones, T. B. Keay, H. Kehoe, R. A. Klappa, D. J. Minton, G. A. Morris, F. Murphy, H. A. Pratt, G. A. Puleston, W. Schlund, T. E. Scott, W. Snell, R. G. Wright, R. E. S. Wyatt.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—May: K. L. O. Jenner (Sen. Mar. 30). (Subs. for notifi. of Sept. 19.) Apr.: J. H. Dingwell (Sen. Feb. 2). (Subs. for notifi. of May 26.)

Flg. Off. J. D. Cumming is transf. to the Gen. Duties Br. Feb. 23.

Flg. Offs. relinquish the rank of Flg. Off. at their own request and are transf. to the Gen. Duties Br. in the rank of Plt. Off.:—Apr. 23: F. R. Derry, C. D. Chant, N. R. Watts. Apr. 29: N. J. Miller, W. L. H. Thring, D. F. Woods.

Plt. Off. G. A. Pears is transf. to the Tech. Br. Oct. 23, 1940.

To resign their commns. and retain their ranks:—May: Sqn. Ldr. R. F. Williams. June: Flt. Lt. W. Burningham-White, Flg. Off. T. E. F. Cadman.

To resign their commns.:—Flg. Offs.: Apr.: R. D. Hambrook, May: G. C. Robinson. June: W. B. Williams. Plt. Off. M. H. Brown. Apr. 19.

Comms. terminated: Plt. Offs. (prob.):—June: J. B. Saunders, J. D. C. Harvey, Act. Plt. Off. (prob.) J. Grant.

The notifi. of Mar. 3 concern. Act. Plt. Off. The Master of Kinnaird is cancelled.

The notifi. of May 19 concern. Act. Plt. Offs. L. D. Carmichael and H. P. Roberts is cancelled.

The notifi. of June 2 concern. C. M. Jones is cancelled.

AMENDMENT.—In notifi. of Apr. 14 concern. T. MacD. Stewart, for Dec. read Mar.

TRAINING BRANCH.—Act. Plt. Off. G. W. Ingram relinquishes his commn. on appt. to a commn. in the Tech. Br. June 10.

To resign their commns.:—Act. Plt. Offs.:—May 27: D. F. Cock, E. Foulkes, R. C. Sauter. May 28: V. Thomas, J. B. Walker, R. E. B. Willcox. May 29: M. E. Nixon. June 1: R. Peberdy. June 2: A. Arkinstall, W. N. Price, F. W. White, L. E. Yeomans. June 3: A. Erskine, A. F. Osborne.

EQUIPMENT BRANCH.—To be Plt. Offs. on prob. (emergency):—Flt. Sgt.: May: David Hockman (Sen. Mar. 18). Cpl.: Apr.: C. S. Ingham (Sen. Feb. 28). Ldg. Acms.: Apr.: J. B. Greenfield (Sen. Jan. 11). May: R. F. Banister (Sen. Apr. 17). Acms. 1st Cl.: Nov.: H. G. Calvert (Sen. Oct. 19). May: P. J. Hewitt (Sen. Apr. 15). Acms. 2nd Cl.: Apr.: E. D. Rogers (Sen. Apr. 5).

To be Act. Plt. Offs. on prob. (emergency):—Cpls.: Feb.: William McInnes (Sen. Oct. 3). Apr.: John Patey (Sen. Mar. 12).

Plt. Off. (prob.) D. E. T. Peasant confmd. in appt., Nov. and to be Flg. Off. (war subs.), Feb.

Plt. Off. (prob.) J. Macfarlane confmd. in appt., Dec., and to be Flg. Off. (war subs.), Feb.

Plt. Off. (prob.) C. Taite confmd. in appt., Dec., and to be Flg. Off. (war subs.), Mar.

Plt. Off. (prob.) C. W. J. Clegg-Butt confmd. in appt., Jan., and to be Flg. Off. (war subs.), Apr.

Plt. Offs. (prob.) confmd. in appts., Jan., and to be Flg. Offs. (war subs.), Apr.:—W. E. Douglas-Osborn, F. N. Goodall, C. V. Howe.

Plt. Offs. (prob.) confmd. in appts., Feb., and to be Flg. Offs. (war subs.):—Apr.: F. P. Barnitt. May: W. T. Beesley, G. E. C. Grimes, W. E. Gee, E. L. Malpass, R. C. McDougall, L. J. George (Sen. Apr. 4), F. H. Vowles.

Plt. Off. (prob.) A. A. N. Beveridge confmd. in appt., Apr., and to be Flg. Off. (war subs.), May (Sen. Apr. 4).

Plt. Offs. (prob.) confmd. in appts., Feb., and to be Flg. Offs. (war subs.), May:—G. H. Bedford, C. S. Crawford, C. D. E. Davis, W. F. Foster, G. F. Gange, A. F. Jones, R. Watson, R. B. Waller, G. Poulton.

Plt. Offs. (prob.) confmd. in appts., Mar., and to be Flg. Offs. (war subs.), May:—G. R. Linley, C. S. Lain, K. C. Wright-Watson, J. Whitehouse, P. T. Sayer, F. C. Simpson, L. M. Thompson.

Flg. Offs. to be Flt. Lts. (temp.):—Mar.: H. M. D. Davis, C. W. Rea, A. E. Stringer (Sen. Dec. 1).

Plt. Off. (prob.) E. A. Luce is transf. to the Admin. and Spec. Duties Br., May 18.

ACCOUNTANT BRANCH.—Plt. Off. (prob.) W. Miller confmd. in appt., Apr.

Plt. Off. (prob.) R. S. Mapp confmd. in appt. and to be Flg. Off. (war subs.), Apr. (Sen. Mar. 24).

Plt. Off. (prob.) D. W. Rollin confmd. in appt., Dec., and to be Flg. Off. (war subs.), Jan.

Plt. Off. (prob.) L. B. Carter confmd. in appt., Jan., and to be Flg. Off. (war subs.), Mar.

Plt. Offs. (prob.) to be confmd. in appts., Jan., and to be Flg. Offs. (war subs.), Mar.:—C. E. Saunders, F. E. Taylor, A. C. Smith.

Plt. Offs. (prob.) confmd. in appts., Feb., and to be Flg. Offs. (war subs.):—Apr.: S. H. Moss, B. A. King.

Plt. Offs. (prob.) confmd. in appts., Mar., and to be Flg. Offs. (war subs.), May:—T. W. C. Hudson, E. W. Field, H. Jagger, G. P. Thomas, H. L. Turk, F. W. Anderson.

Plt. Offs. (prob.) confmd. in appts., Mar., and to be Flg. Offs. (war subs.), May:—H. J. Kemp, F. C. Hyatt.

MEDICAL BRANCH.—To be Flt. Lts. (emergency):—May: A. G. Evans, M.R.C.S., L.R.C.P.; W. H. Gratrix, M.B., Ch.B.; Arthur Harris, M.D., Ch.B., D.P.M.

To be Flg. Offs. (emergency):—May: R. T. Hastings-James, M.B., B.Ch., M.R.C.S., L.R.C.P.; G. O. Airey, M.B., Ch.B.; A. L. S. Anderson, M.B., Ch.B.; G. M. Carstairs, M.B., Ch.B.; P. S. Cheshire, M.R.C.S., L.R.C.P.; W. L. Munro, M.B., Ch.B.; Noel Newman, M.B., B.Ch.; A. F. Niven, M.B., Ch.B.; David Williams, M.R.C.S., L.R.C.P.

Flg. Offs. to be Flt. Lts. (war subs.):—Jan.: W. N. Riley, M.R.C.S., L.R.C.P. Feb.: G. Clayton, M.R.C.S., L.R.C.P.; D. Crichton, M.B., Ch.B. Apr.: R. D. Tonkin, M.B., B.S., M.R.C.S., L.R.C.P. May: K. M. Fox, M.B., Ch.B.; E. A. Pask, M.B., B.Chir., M.R.C.S., L.R.C.P., D.A.; H. Patterson, M.B., Ch.B., D.P.H. June: J. H. Smart, M.B., B.S., M.R.C.S., L.R.C.P.

DENTAL BRANCH.—To be Flg. Offs. (emergency):—May: E. P. Deverall, L.D.S.; N. I. Scott, L.D.S.; William Smillie, L.D.S.; Harold Watson, L.D.S.

Flg. Offs. to be Flt. Lts. (war subs.):—May: J. E. Tylour, L.D.S.; D. G. Dowie, L.D.S.; S. Phillips, L.D.S.; W. H. Hudson, L.D.S.; E. P. Whittaker, L.D.S. June: A. W. Hall, L.D.S.

CHAPLAINS BRANCH.—To be Chaplains (emergency) with the relative rank of Sqn. Ldr.:—Apr.: The Rev. S. V. Ward, The Rev. G. R. Cooper, The Rev. H. J. Stares, The Rev. J. S. Walton.

The Rev. P. K. Challen resigns his commn., June 1.

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

# THE TITANINE RECOGNITION SERIES, NUMBER TWELVE.

Photograph No. 11 was of a

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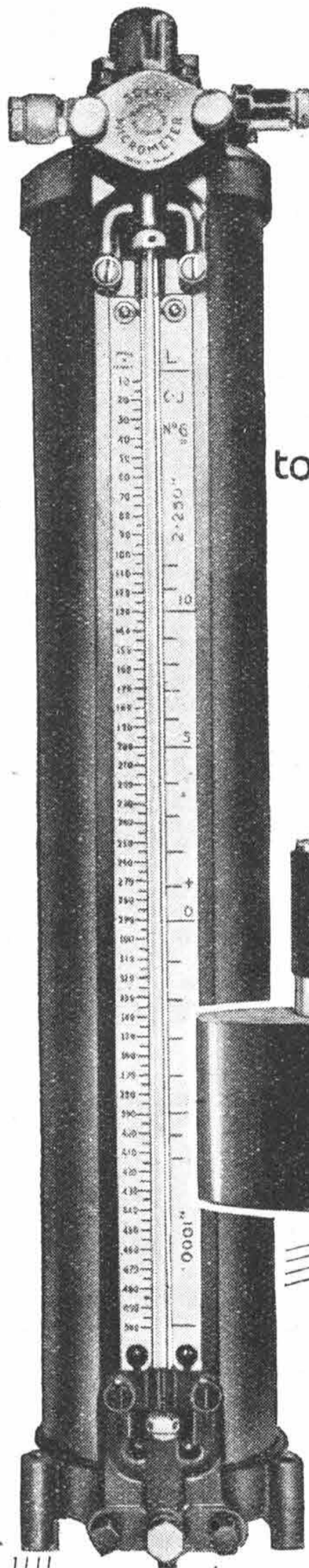
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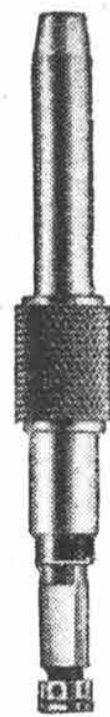
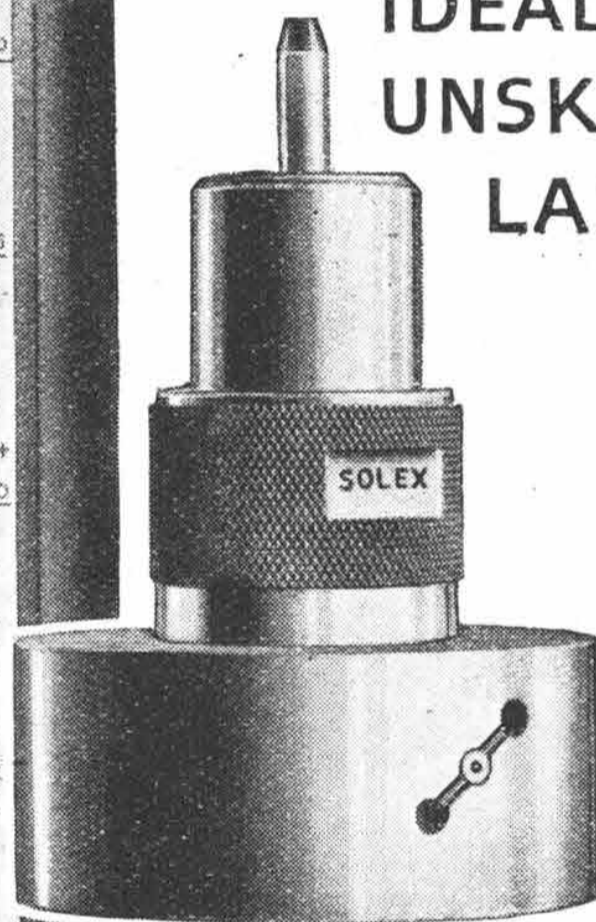
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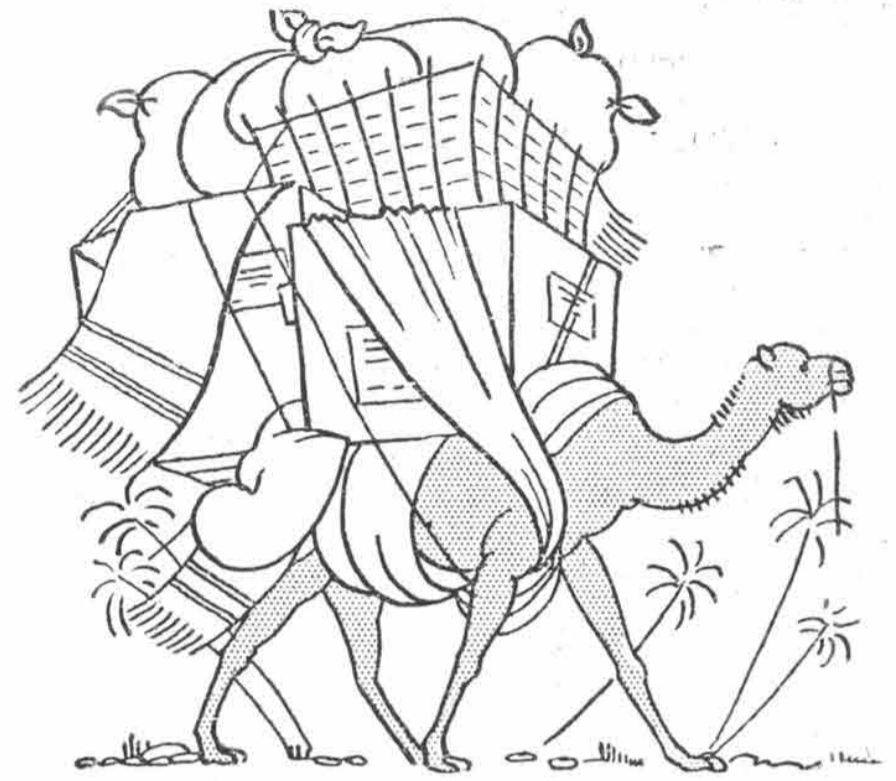
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# AEROPLANES OF THE JAPANESE ARMY AND NAVY AIR FORCES—X

## THE POTEZ ARMY B-01 (Potez 63B.2)

(Two 670 h.p. Hispano-Suiza 14Hbs motors)

TYPE.—Bomber.

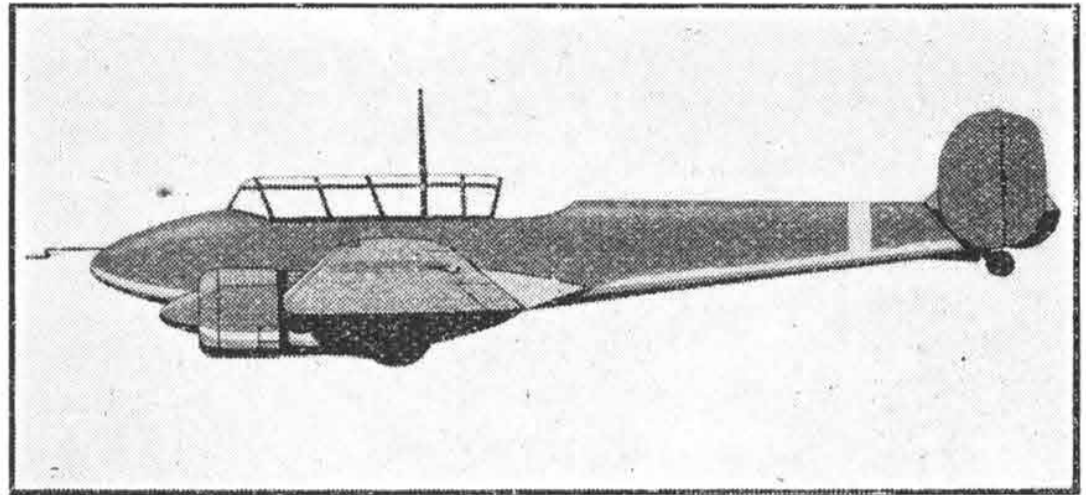
CREW.—Two.

ARMAMENT.—One fixed forward-firing machine-gun and one movable rear machine-gun. (Armament given is for French aircraft; this may now be increased.)

DIMENSIONS.—Span, 52 ft. 6 ins.; length, 36 ft. 3 ins.; height, 9 ft. 10 ins.; wing area, 355 sq. ft.

WEIGHTS.—Empty 6,085 lb.; loaded 9,680 lb.

PERFORMANCE.—Max. speed, 279.4 m.p.h. at 13,120 ft.; range, 807 miles. Made originally by Société Nationale de Constructions Aéronautiques du Nord, and now by an unknown Japanese company.



55

## THE SEVERSKY NAVY S-98 (Seversky 2PA Model 200)

(One 950 h.p. Pratt and Whitney Twin Wasp S3C3-G motor)

TYPE.—Fighter.

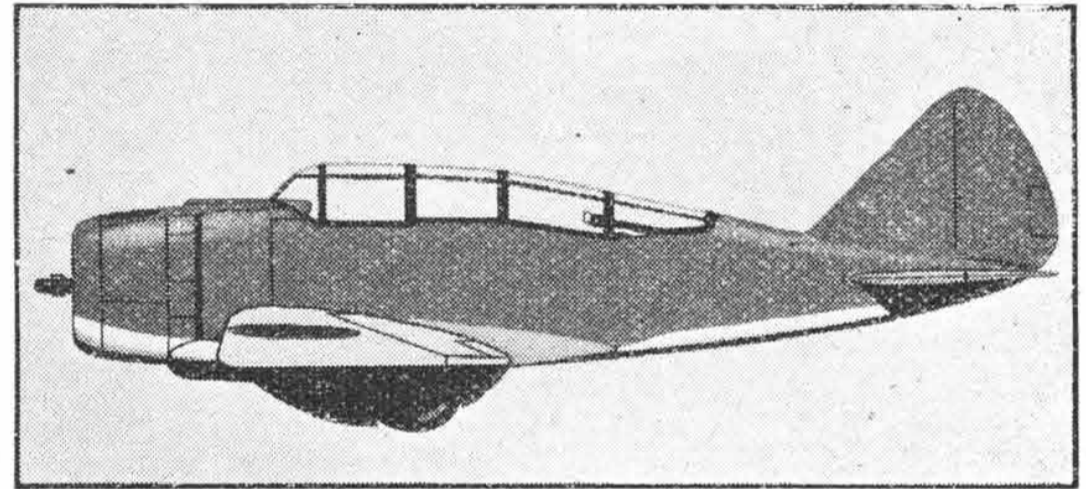
CREW.—Two.

ARMAMENT.—Believed to be two fixed forward-firing machine-guns and one movable rear machine-gun.

DIMENSIONS.—Span, 36 ft. 0 in.; length, 26 ft. 10 ins.; height, 9 ft. 9½ ins.; wing area, 225 sq. ft.

WEIGHTS.—Empty, 4,446 lb.; loaded, 6,022 lb.

PERFORMANCE.—Max. speed, 315 m.p.h. at 14,300 ft.; range, 675 miles at 285 m.p.h.; service ceiling, 30,000 ft. Made by the Republic Aircraft Corporation (late Seversky) and believed to be made in Japan by the Kawasaki Dockyard Co., Ltd., at Kobe.



56

## THE SHOWA ARMY SB-99 (Vultee V-11GB)

(One 850 h.p. Showa motor)

TYPE.—Fighter-bomber.

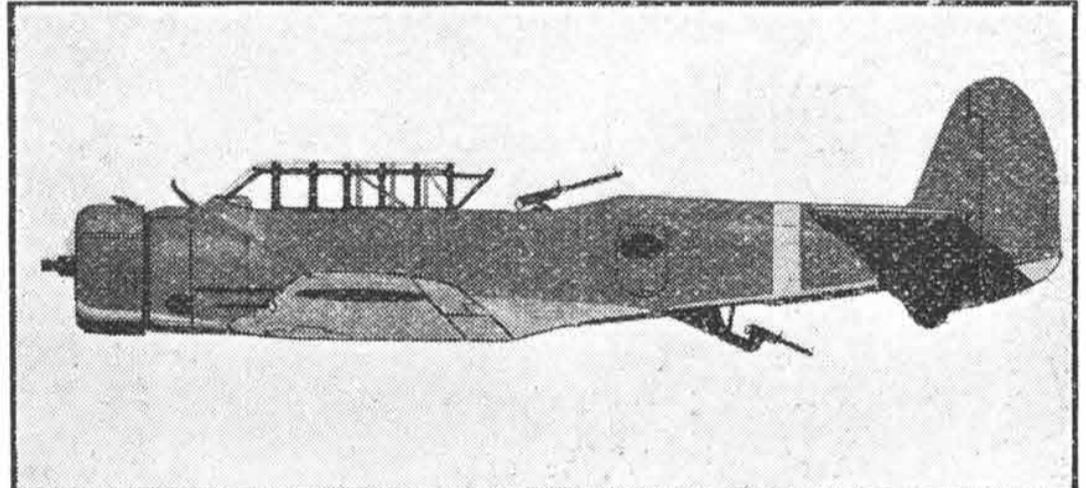
CREW.—Two to three.

ARMAMENT.—Two fixed forward-firing cannon, one fixed forward-firing machine-gun, and one movable rear machine-gun.

DIMENSIONS.—Span, 50 ft. 0 in.; length, 37 ft. 5½ ins.; height, 9 ft. 11 ins.; wing area, 384 sq. ft.

WEIGHTS.—Empty, 6,375 lb.; loaded, 9,712 lb.

PERFORMANCE.—Max. speed, 220 m.p.h. at 6,800 ft.; range, 950 miles at 180 m.p.h.; service ceiling, 26,500 ft. Made originally by Vultee Aircraft Division of the Aviation Manufacturing Corporation, Downey, Cal., U.S.A., and in Japan by Showa Hikoki Kogyo Kaisha (Showa Aircraft Co., Ltd.) at Tokyo-Seisakusho and Heijo-Seisakusho. This aeroplane is also used by the U.S.S.R. Air Forces as the R-10.



57

## THE TATIKAWA ARMY K-95-1 (One 350 h.p. Type 95 motor)

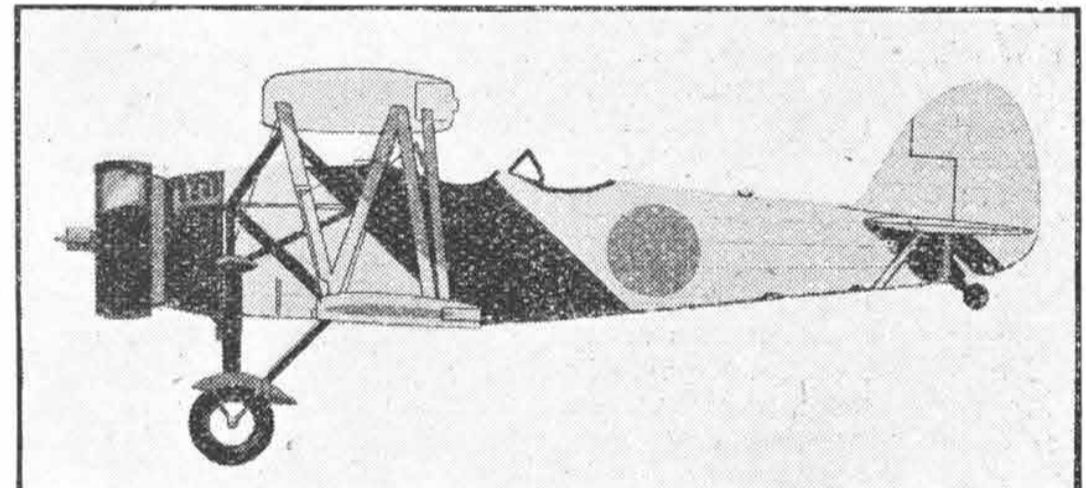
TYPE.—Advanced trainer.

CREW.—Two.

DIMENSIONS.—Span, 32 ft. 9½ ins.; length, 26 ft. 3 ins.; height, 11 ft. 6 ins.

WEIGHTS.—Empty, 2,178 lb.; loaded, 3,234 lb.

PERFORMANCE.—Max. speed, 142.8 m.p.h.; range, 416 miles; service ceiling, 21,320 ft. Made by Tatikawa Hikoki Kaishiki Kaisha (Tatikawa Aircraft Co., Ltd.) at Tokyo.



58

## THE TATIKAWA ARMY K-95-3 (One 150 h.p. Type 95 motor)

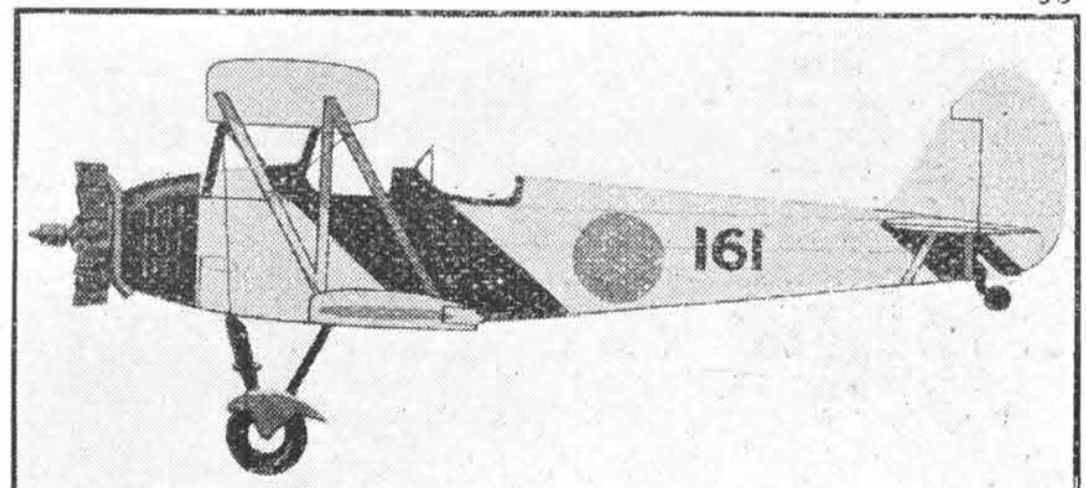
TYPE.—Primary trainer.

CREW.—Two.

DIMENSIONS.—Span, 32 ft. 9½ ins.; length, 26 ft. 3 ins.; height, 9 ft. 10 ins.

WEIGHTS.—Empty, 1,364 lb.; loaded, 1,980 lb.

PERFORMANCE.—Max. speed, 105.5 m.p.h.; service ceiling, 17,385 ft. Made by Tatikawa Hikoki Kaishiki Kaisha (Tatikawa Aircraft Co., Ltd.) at Tokyo.



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## THE TATIKAWA ARMY AMBULANCE (One 130 h.p. Cirrus-Hermes IV motor)

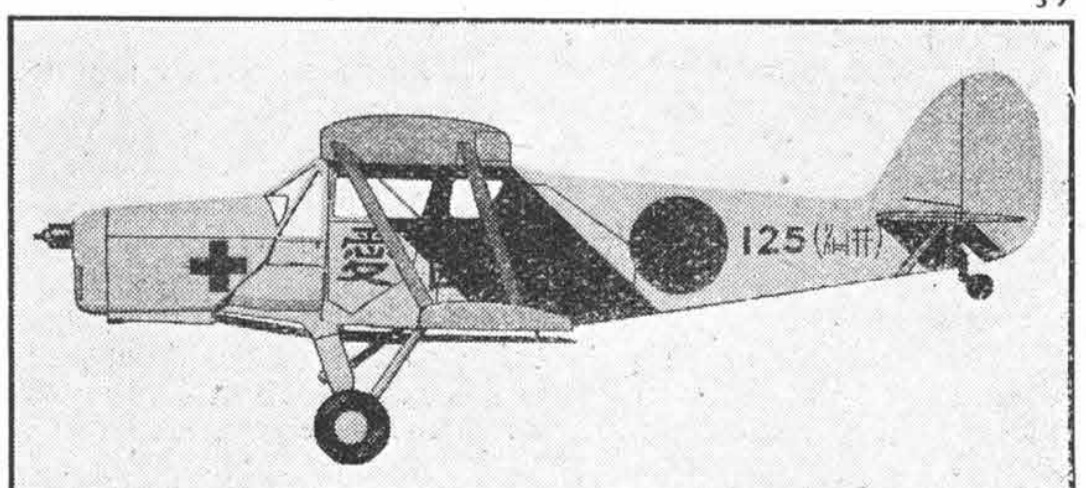
TYPE.—Ambulance.

CREW.—Two and two stretcher cases.

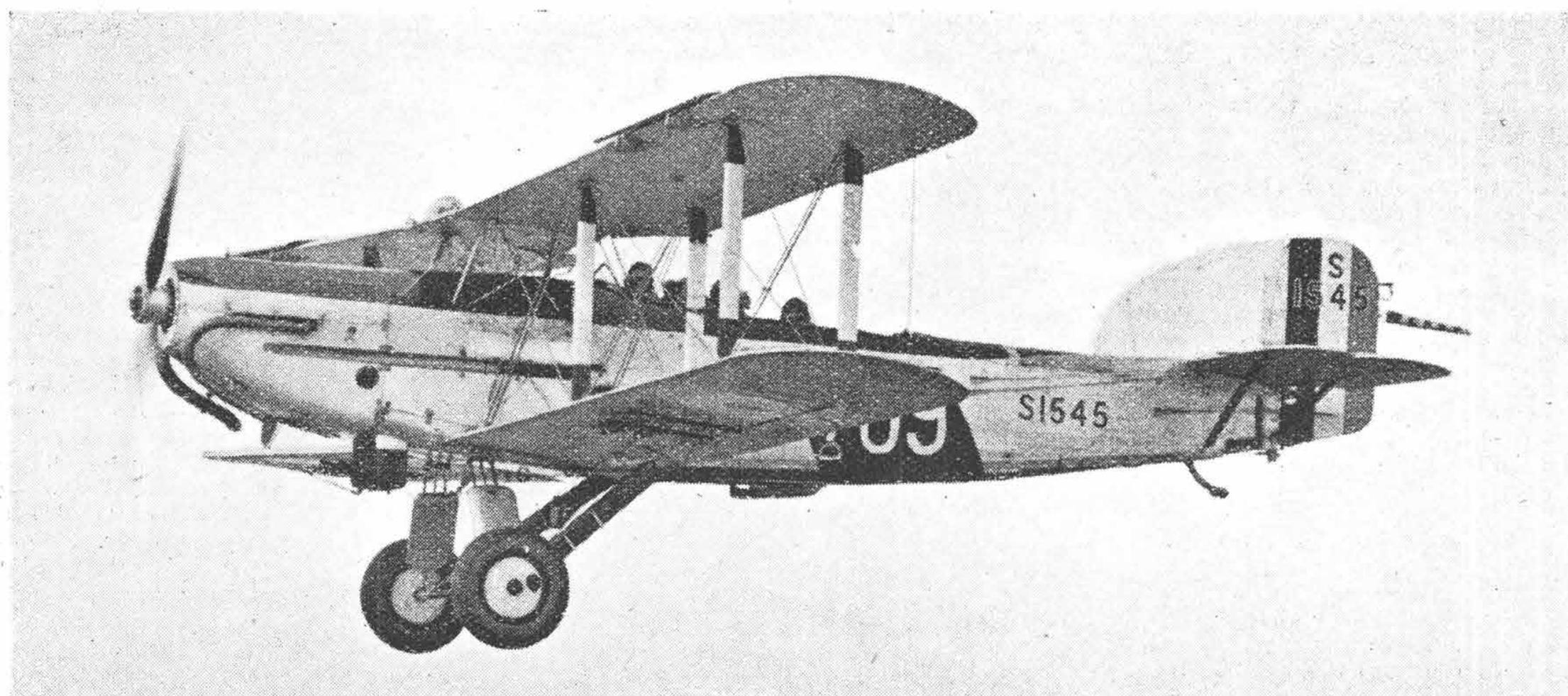
DIMENSIONS.—Span, 32 ft. 9½ ins.; length, 25 ft. 10 ins.; height, 7 ft. 9½ ins.; wing area, 236.7 sq. ft.

WEIGHTS.—Empty, 1,328 lb.; loaded, 2,294 lb.

PERFORMANCE.—Max. speed, 112 m.p.h. at 1,000 ft. Made by Tatikawa Hikoki Kaishiki Kaisha (Tatikawa Aircraft Co., Ltd.) at Tokyo.



60



["Aeroplane" photograph]

LONG SERVICE.—The Fairey III F, with Napier Lion motor, remained in service in the Royal Air Force for many years during the late 1920s and early 1930s. Some of its later developments, the Seal and the Gordon, are still flying on target-towing duties.

## FROM A PIECE OF OLD MING

By Fougueux

THE UPHEAVALS OF WAR have played such tricks on many a settled career that without explanation I may say I recently found myself loafing under the Southern stars on the bridge of a sloop, yarning with the Captain far into the Middle Watch.

Somewhere out in the dome of darkness around rode a motley collection of old crates which we were bringing in convoy to England—the vulnerable little merchant ships doing the War's biggest job. It was a night impossible for sleep, since the ship rolled and pitched with the crazy motion of an instrument-training machine in the hands of a neophyte. As the Captain had once spent happy days as a naval pilot, we soon fell a-yarning.

What is the fascination of China that those who have served there wear their past like a proud decoration? Unquestionably, of all British overseas possessions and lands frequented by the Services, none can compare with China, whence the old pilot had just come. He ranked as a Piece of Old Ming, an honorary title accorded those with two commissions in China; after one commission you qualify as an Old China Bird, while the rara avis of three commissions (if not then completely gaga) has attained the venerable eminence of Far Eastern Expert.

I used to drive a Flycatcher on floats (said the Captain, sipping a brimming cup of cocoa). A nice aeroplane. It made lovely blue-notes on the dive. The only trouble was you couldn't see an awful lot ahead.

It was always a little tricky for landing, as the object was to touch down on the water just short of the ship's hoist crane, aiming to finish your run immediately beneath the hook.

One day I was concentrating on a speed trial: I think the bet was to beat five minutes from touch-down to gin in the Ward Room, but anyway all my vision was glued on the precise alighting spot. Unfortunately, there happened to be an enormous Chinese junk slap in the line of flight, and this craft, you will understand, I did not see at all.

The first I knew of trouble ahead was a horrible crashing and tearing sound and then bits of sail, mast, airscrew and wings went into a mad kaleidoscope. I found myself swimming hard in the greasy yellow waters of the Yangtze.

Now if you know anything about junks, you will know that the Chinese junk master has all his family and most of his relatives living aboard. The Officer of the Watch and the Captain of my ship, both of whom were, fortunately, on the quarter deck at the time of the accident, next witnessed an astonishing proceeding.

The junk master made a lightning survey of the damage I had caused and took immediate steps to cash in on the crash landing. He grabbed the nearest relative—she happened to be a girl of about eight—and struck her across the face with a piece of wreckage from the junk mast. Then, without delay, he hauled her off to a small row-boat and came directly to the

ship with the little girl still howling bitterly while he claimed in a loud and insistent voice for damages!

The compensation game (he continued) was a great affair in China. I remember once we asked permission to test out machine-guns from the air on an expanse of marsh land, somewhere near Ichang. The buzz about this quickly spread, and astute Chinese saw a most profitable opportunity.

Our first shoot was timed for early one morning, but the aeroplane went U/S at the last moment. Well, there was nothing to do but make the best of the day and, being peacetime, a small party of us decided to go to the marshes to shoot wild fowl.

### An Astonishing Bag

In all innocence we approached the target area and, fortunately, very early in the session a woodcock rose about 15 yards from me. I fired almost simultaneously.

The sound of the shot-gun had not ceased in my ears before a Chinese sprang into the air from the marsh rushes just ahead. He was yelling blue murder and claiming in frantic pidgin English compensation for having been shot!

His story was rather marred by the fact that at least 200 other Chinese, hearing his wails and the sound of the gun, also rose in concert out of the surrounding rushes throughout the air-firing area, all of them claiming to have been shot, all wanting compensation.

The question of compensation (the Piece of Old Ming continued to reminisce) reached a climax after a forced landing near Hankow at the time of the great floods in 1931. Here a Fairey III F went down in the hinterland, and the pilot managed to stagger into an adjacent village for help.

It was after midday, and everybody had naturally retired to sleep; but there was one very ancient Chinese—obviously of great antiquity—who was sitting on the edge of the village well in most profound contemplation.

The pilot, regretfully forced to interrupt this reverie, tapped him on the shoulder. Ah, the frail flesh! The ancient, either from surprise at being disturbed by anyone or else by having his dream broken short, gave a violent start and, to the horror of the pilot, toppled backwards down into the deep well. There could be no doubt that so feeble a centenarian could not have survived such a calamity.

Thoroughly frightened by the occurrence, the wretched pilot made enough noise to raise the dead (but not the dead from the well). The villagers formed a ring around him and tried vainly to understand what all the pother was about. As this was a clear case of non habeas corpus, the explanation was a brilliant example of the skill of the Chinese in thought reading.

Finally, after an exhausting half-hour, he had conveyed that he was very sorry, that he had not sufficient money with him at the moment, but that he would return in due course and

offer suitable compensation to the relatives or village elders for a most regrettable accident.

When he came, on the Captain's advice, to consult the British Consul, that gentleman took the matter with habitual sang-froid. He gave his opinion that the maximum degree of generosity would be extended if a sum of £5 in cash were paid over, and that honour would be satisfied on all sides by this substantial token of regret.

But the pilot, whether from fear of possible later charges of manslaughter or an uneasy conscience that demanded more hush-gold, obstinately decided against the Consul's and all other local opinion by gathering a round £25 . . . incidentally, a sum enough to buy outright at that time a whole native Chinese agricultural village.

He made his pilgrimage to the scene of the accident where some of the elders and a few of the children vaguely recalled an old man falling down the well a short time ago. However, the pilot made his speech and then proceeded to hand over officially a bag of silver containing £25 worth of Chinese dollars.

The effect was electrifying. One section of the crowd were ready forthwith to institute a fête, with lots and lots of fireworks. Another wanted to raise a memorial—not to the deceased ancient but to the pilot. Other favours were pressed upon him by village charmers, and the one thought in everybody's mind was: Has he got any more money?

Resolutely the pilot thanked them all but made his departure. There, you might say, honour was more than satisfied, and an English officer, out of his personal, meagre pay, had upheld the British tradition of fair play, justice, compensation for wrong and so on.

Little did that pilot understand the Chinese view, which is that death means you join your revered ancestors. The sad fact is, at least according to Yangtse legend, that as soon as any British party appears anywhere near any of the villages in that hinterland area of Hankow, the oldest villager is immediately thrust down the well, while the remainder of the village race to the "foreign devils" to claim the just reward of £25!

The sloop tossed and pitched and shuddered and rolled, and the Quartermaster sent up two more bowls of cocoa. The Azores swell had us in its grip: you couldn't even sit down on a chair without being flung clear in less than a minute.

We had an airman (continued the old pilot) who developed a keen taste for rice wine. One day this lad, who was quite a good worker, missed the last liberty boat . . . we were at Foo Choo . . . and the Chief's boat first thing next morning, and the postman's trip, and the messman's trip, and elected to repair on board around noon, arriving by sampan. There was a glazed look in his eyes—token of a misspent evening—

but the remarkable feature was that he carried under his arm a live goose, which he was slowly plucking despite its most squawking protests.

It took a minute or so to get the Quartermaster along to the Officer of the Watch on the quarterdeck and have the airman arraigned before authority. To all of the routine questions put before him the airman returned a blank stare, clutching firmly the struggling goose. "Do you refuse to answer?" demanded the O.O.W. very exasperated by this time. The airman slowly shook his head, and replied in tones of deep regret: *Me no speaka da English.*

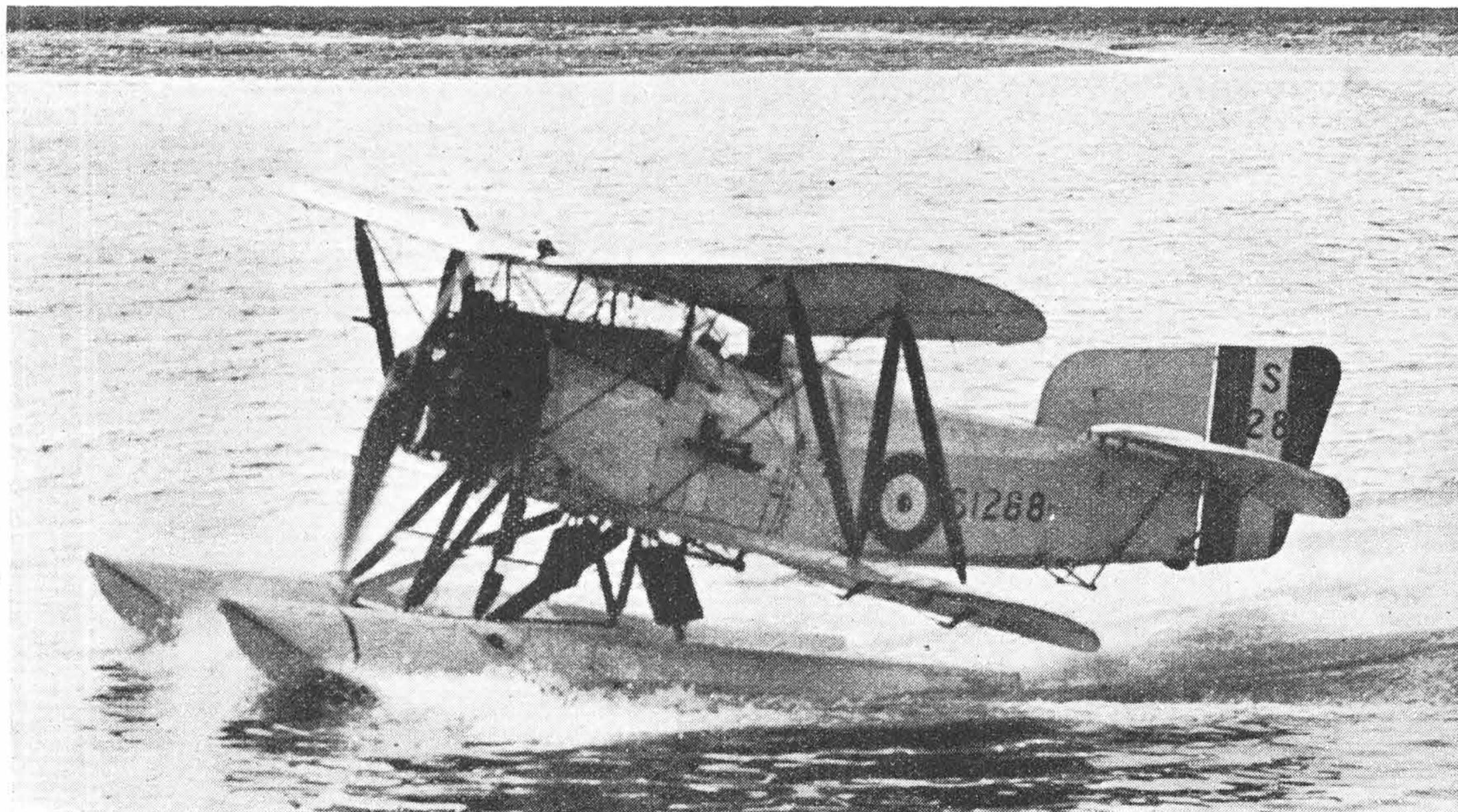
Perhaps one of the more subtle incidents occurred when the R.A.F. Orderly Officer of the Day was sent by the Wing Commander to make some urgent report to the ship's Captain. Now in this particular ship at the material time an Admiral happened to be taking passage to Hong Kong. The Admiral was using the Captain's day cabin, to which the Orderly Officer naturally went.

It must have been a mission of great urgency, for the Orderly Officer noticed that although the cabin was empty the sign on the bath-room door was over to ENGAGED. Rather timorously and with a somewhat reedy voice, the Orderly Officer tapped on the closed door and said: "Is the Captain in there, please?" And from inside, in a rich baritone, came the reply: "No, boy, I am here quite alone!"

#### The Fluke—or Was It?

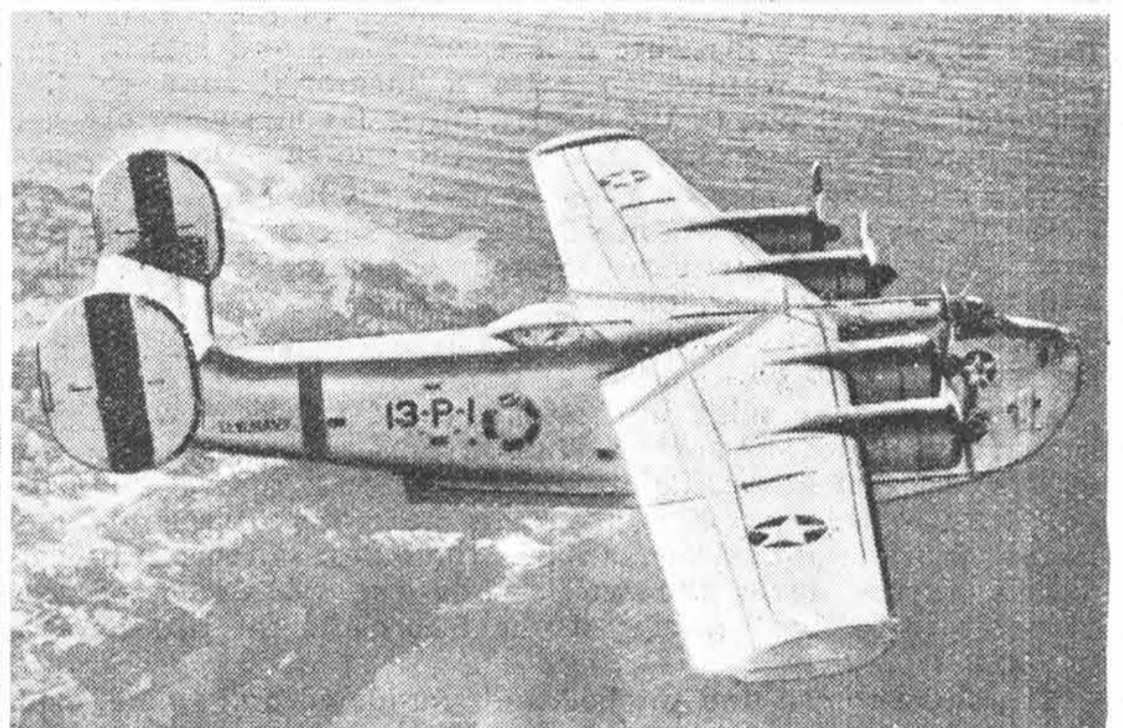
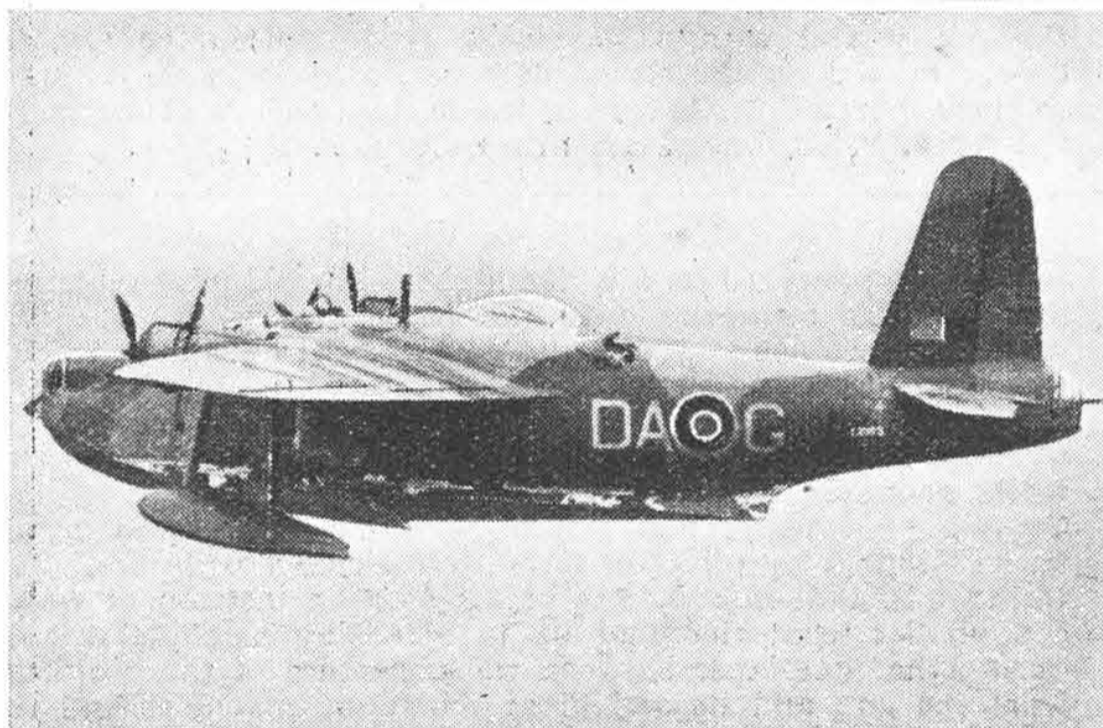
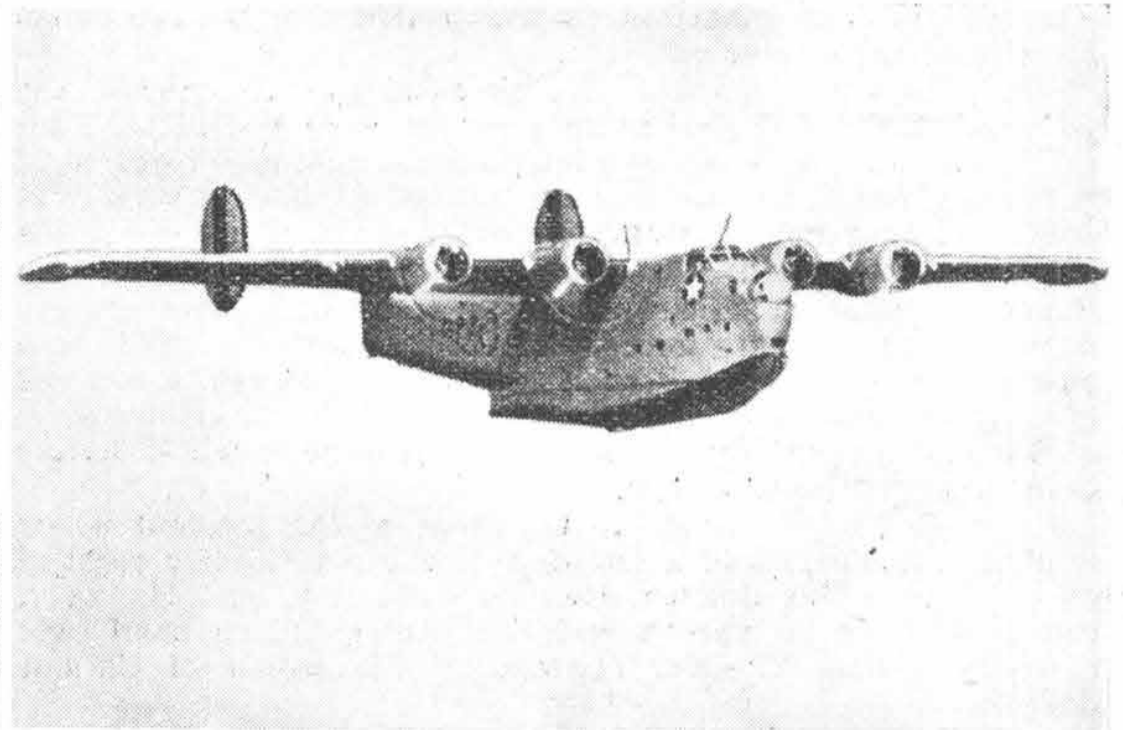
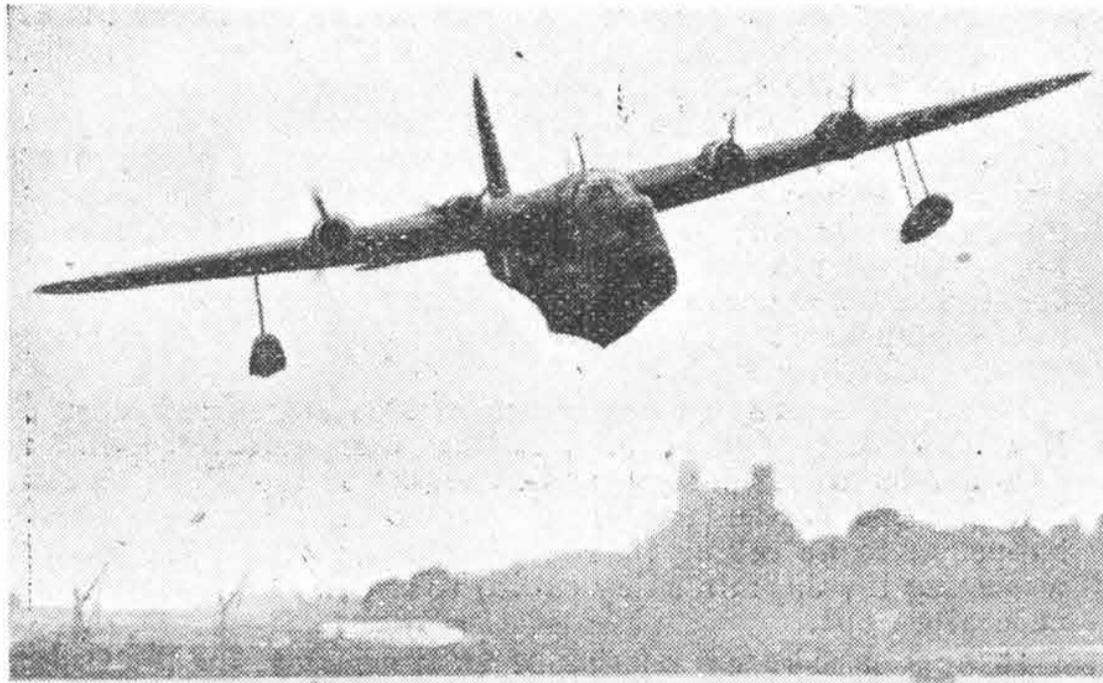
The ship ploughed on into the night. The old pilot remained lost with his memories until the Navigator interrupted him with some problem. It held its course right on homeward for two more weeks until, on a wild night of running sea, flung spray and gale wind, the gun crews shot down an Fw 200 with probably one of the flukiest shots in all anti-aircraft work; or maybe it wasn't a fluke, and that the old pilot, now Captain of a sloop, had instilled into his crew some of the tricks adopted by pilots of aircraft to avoid hostile fire. For the fact is, that nobody has yet devised an instrument which can predict what the pilot of an attacking machine will do during the time lapse between the departure of the projectile from the gun and its arrival at the flying machine; and the only way to hope for success is to be able to gauge the probable path of flight of the attacker, well in advance. It takes air experience to do that and, fortunately, there are many in the Royal Navy and the Merchant Navy who can impart knowledge not found in books.

R.A.F. officers on passage abroad might well make a point of giving an informal talk on this subject to ship's companies and merchant crews. It's just a small cog in the co-operation wheels, but it may lead to cashing in on many an enemy crash landing



[“Aeroplane” photograph]

NAVAL FIGHTER.—The Fairey Flycatcher, built for the Royal Air Force when it was responsible for the Fleet Air Arm. The Flycatcher was an extremely manoeuvrable aeroplane whose noise has only recently been rivalled by that of the Harvard. It was in service with floats, on wheels and also as an amphibian.



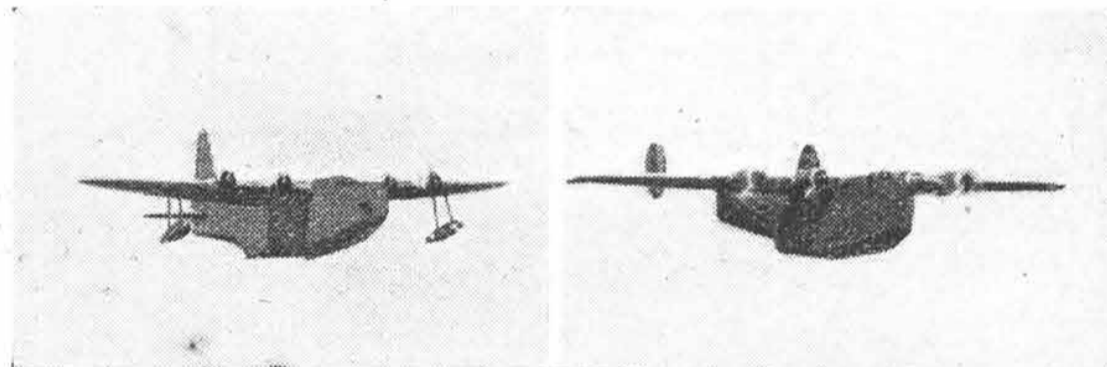
DETAILED ANALYSIS.—The points by which the subjects of the previous recognition problems can be identified are illustrated in the photographs and drawings of the Short Sunderland I (left) and the Consolidated PB2Y-3 Coronado (right).

THE SHORT SUNDERLAND I (four 1,010 h.p. Bristol Pegasus XXII radial motors) and the Consolidated PB2Y-3, the Coronado (four 1,200 h.p. Pratt and Whitney Wasp SIC3-G radial motors) were the subjects of the previous recognition tests.

Both the Sunderland of the R.A.F. Coastal Command and the Coronado of the U.S. Navy are used for long-range sea patrols. The Coronado is not yet known to be based in the British Isles, though doubtless it soon will be.

The recognition features of the two flying-boats are both basically the same; the deep boat hull with the keel ending abruptly midway along its length, and the large span of the

# Aircraft Recognition

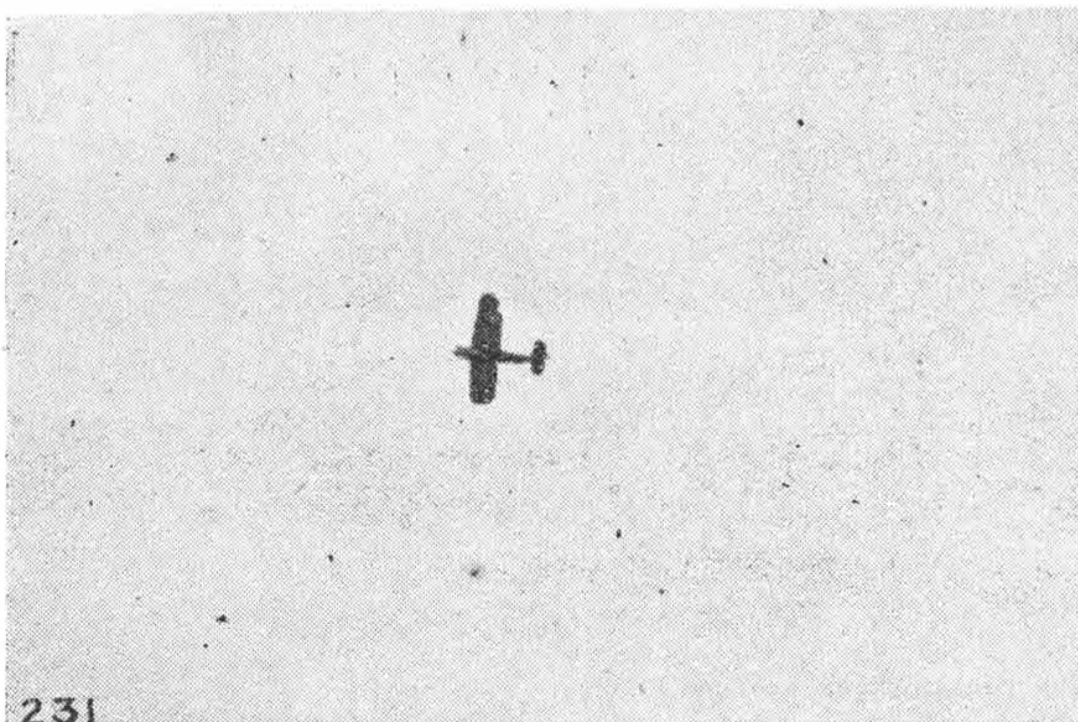


229 PREVIOUS PROBLEMS.—(Left) a Sunderland I, and 230 (right) a PB2Y-3 Coronado.

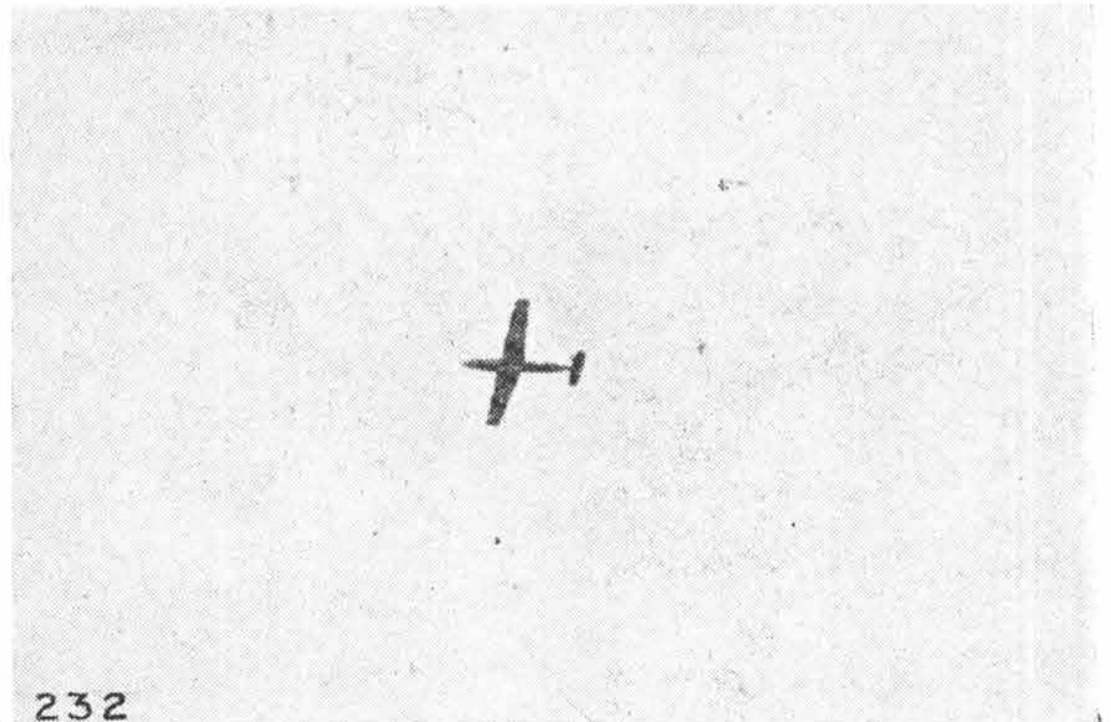
high wing with slight dihedral, mounting four motors are the more obvious.

Differences between the two can be seen without difficulty. The wing floats of the Coronado retract to form square wing tips, whereas those of the Sunderland are fixed and remain prominently in view. The broad rectangular tailplane of the Coronado, although not noticeable here, has dihedral and is mounted high on the hull. The tailplane of the Sunderland

has no dihedral, has equal taper on leading and trailing edges, and has rounded tips. The rounded twin fins and rudders of the Coronado are one of the most prominent features and contrast with the Sunderland's tall, elegant, single fin and rudder.



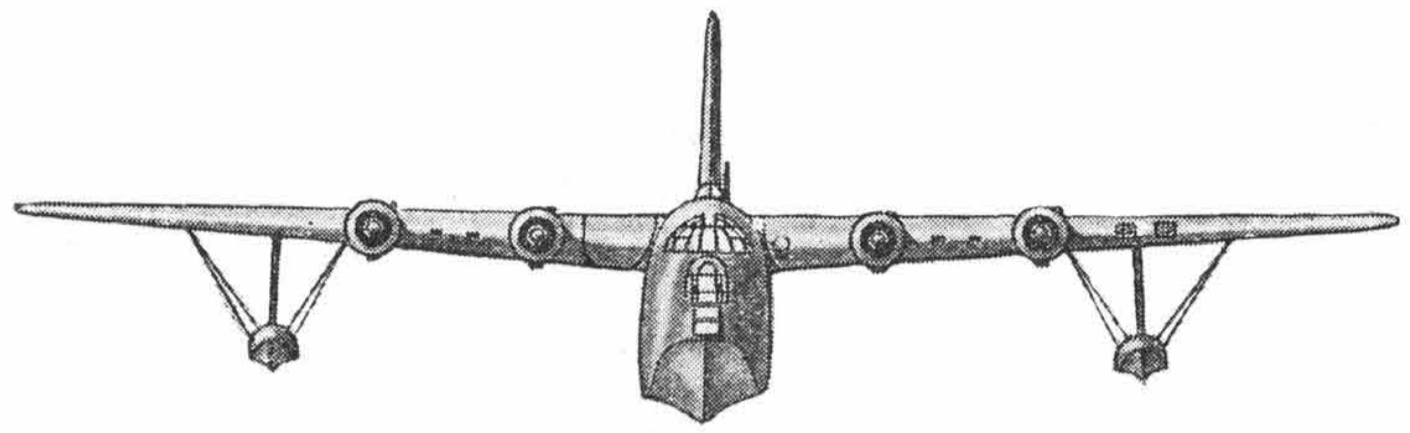
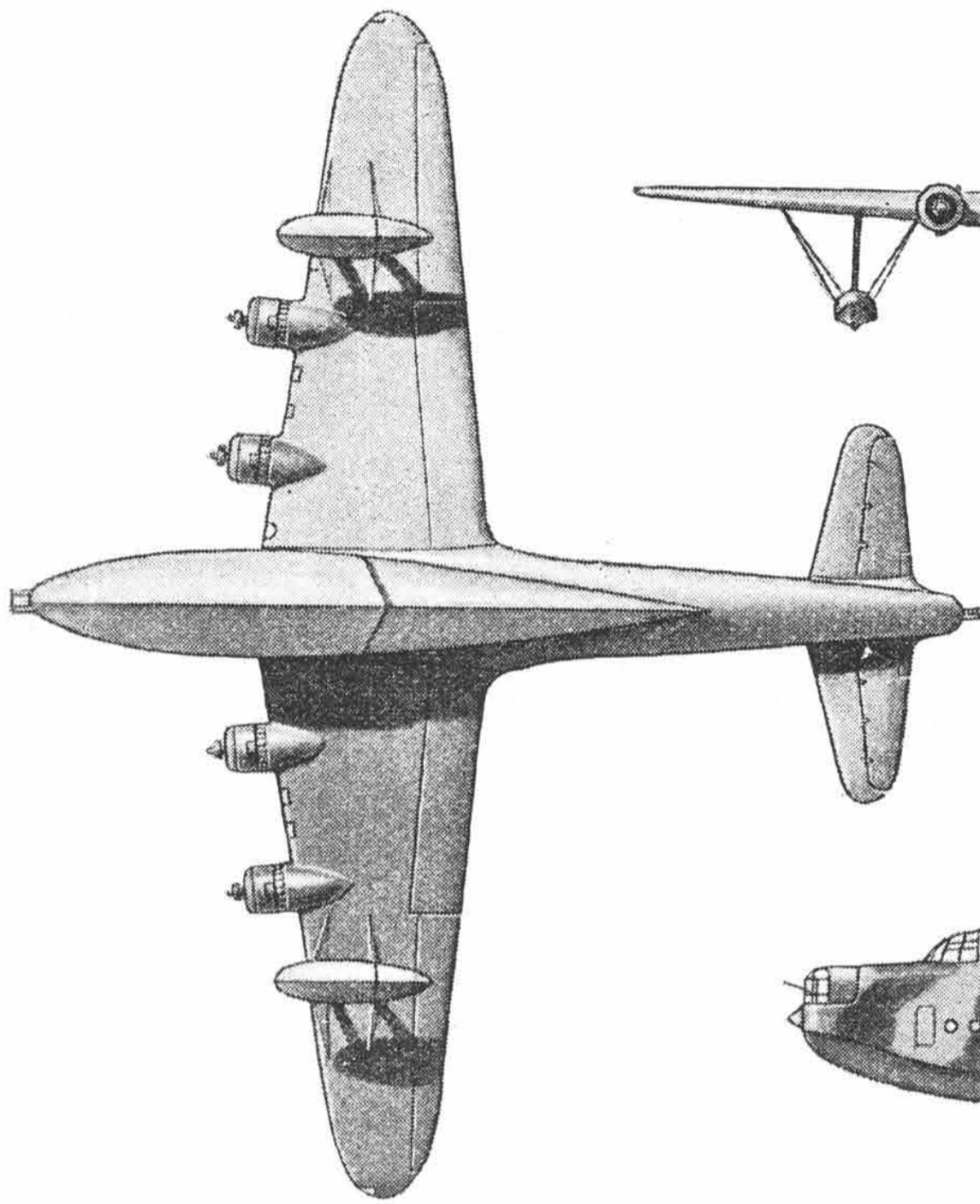
231



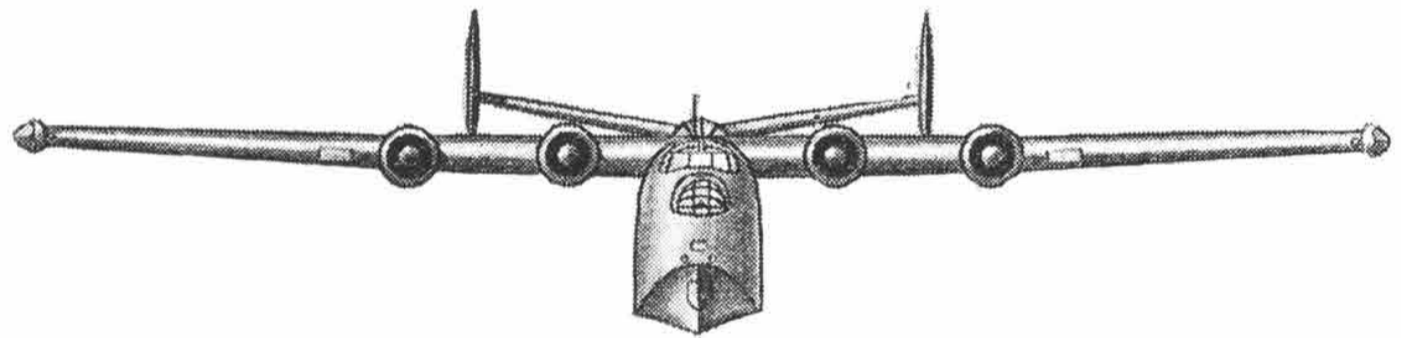
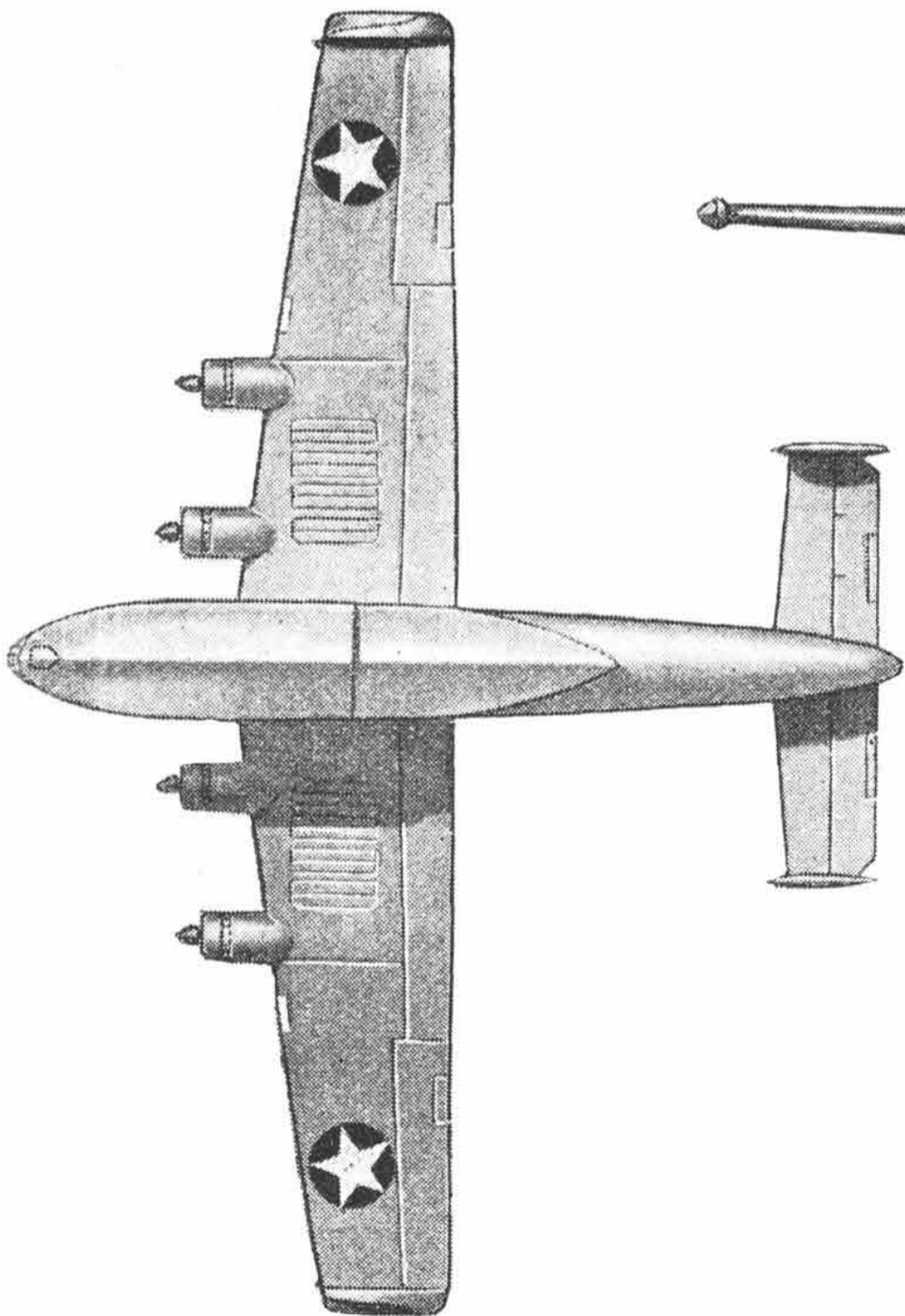
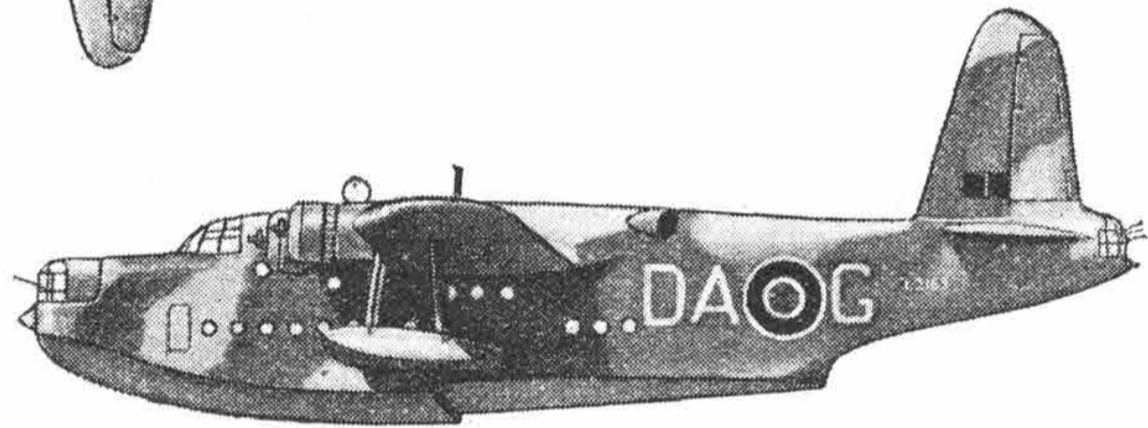
232

FOR IDENTIFICATION CXVI.—Two more photographs to give practice in the recognition of Allied and enemy aeroplanes. What they are and notes on their characteristics will be published with two more photographs on July 31. When the page is viewed at a distance of 1 ft. both aeroplanes are represented as flying at a height of about 100 ft. at a distance of 300 yds.

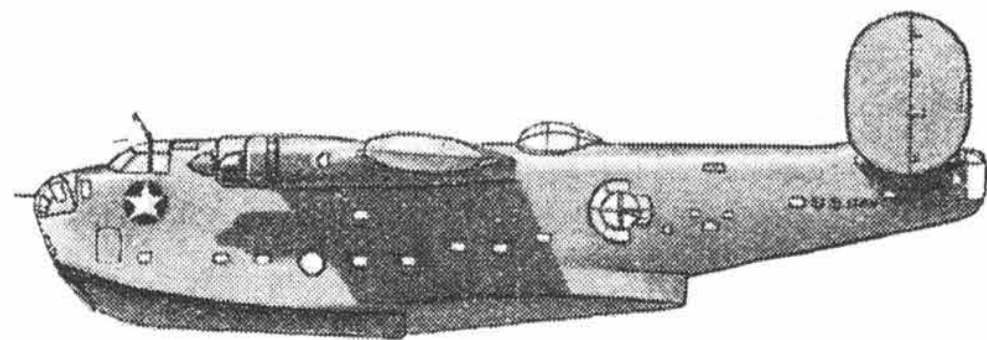
# AIRCRAFT RECOGNITION



THE SHORT S.24  
THE SUNDERLAND I



THE CONSOLIDATED PB2Y-3  
THE CORONADO



# AIR TRANSPORT

## The Loss of the Corio

WHEN the Empire flying-boat Corio was shot down by seven Japanese 00 fighters near Koepang, on January 30 last, it was the first aeroplane to be lost by Qantas Empire Airways since the Company's inception in 1934. The story of the loss of the Corio was written for Qantas's house organ, the "Empire Airways Gazette," by Capn. A. A. Koch. He was in command of the Corio and was one of the four survivors of the flying-boat. Ten passengers and three members of the crew were lost, not, as previously reported, 11 passengers and two members of the crew.

Capn. Koch writes that they left Darwin at dawn on Jan. 30 on a special flight to get women and children evacuees from Sourabaya. The Radio Officer had just sent a message when they heard a peculiar rattling in the fuselage and then saw tracer bullets from an aeroplane attacking overhead and apparently from others behind. Capn. Koch opened the throttle and dived to the level of the water, heading towards the nearest beach, about 15 miles away.

He tried swerving and zig-zagging and found that when he swerved the tracer bullets were thrown well over to one side, so he flew a set course until the tracer bullets were again breaking the glass in the Corio and then swerved again in towards them. A few bullets struck, but most were well off side and he continued this manoeuvre at about one foot above the water, the wing-tip floats occasionally striking the water.

To his dismay he found that his speed was dropping, two motors were on fire and he would have to alight before reaching the beach. When the Corio touched the water he felt as though several drogues were holding it back, probably because the planing surface at the bottom was so badly holed that the flying-boat was practically tipped on to its nose.

The nose of the Corio plunged underneath the water and Capn. Koch was thrown over the instrument panel and out through the hole caused by the impact of hitting the water. When he came to the surface the wings of the Corio were afloat in the water and seven Japanese 00 fighters were circling overhead at about 1,500 ft. They continued to circle for three or four minutes and then left.

Capn. Koch was wounded in the left arm and leg and his right knee and leg were badly damaged. A passenger, Mr. Moore, suggested that they should try to swim to the shore, which looked as if it was about five miles away. Both were good swimmers and they set off to find help for the others. Their swim took three hours and Capn. Koch was unable to stand when they reached the breakers, so Mr. Moore dragged him ashore and set off for help, but returned an hour later, having found the way barred by a river, about 400 yds. wide, and no trace of a village. A few minutes later they were joined by one of the other passengers, a Mr. Westbrook, who had also managed to swim ashore and had brought a bag of mail with him. The two men set off again to look for help and returned with another passenger, a Mr. Fisher, who was slightly injured, and First Officer Lyne.

Just before sunset Mr. Moore and Mr. Westbrook set out in the direction of Koepang. The plan was that if they found a native village one was to return with food and water and the other was to go on to Koepang. There were showers all the next day and about sunset the two men returned with a small quantity of food and about a gallon of water. They had found a village, but the natives refused to cross the river, and it was a job for two men to swim across with the food and water.

Mr. Moore again set out for Koepang, this time with a native guide, and eventually arrived there about midday on Feb. 3. The Dutch authorities arranged for a steamer in the harbour to go to the rescue, but that evening a Dutch flying-boat, a Dornier, alighted and the Captain agreed to fly over to the marooned party with a doctor and fly them back to Koepang. They alighted just outside the breakers as the light was failing and came ashore in rubber dinghies. It was too late to take off again that night, but the next morning they were flown to Koepang.

Capn. Koch spent some time in hospital in Sourabaya, during which the town was bombed four times, and was in hospital in Darwin when the Japanese made the first raid there. He is now convalescent, but we hear from Australia that his recovery will take some time.

The Corio was one of the six Short S.23 Empire flying-boats delivered to Qantas. It was flown to Australia early in 1938.

## Pan-American Airways

IN 1941 Pan-American Airways added to its fleet three Boeing 314-As, 18 Douglas DC-3s and 13 Lockheed Lodestars. The total sum paid during the year for new flying and ground equipment was \$9,650,000 (about £2,171,250), according to the report for the year.

The Company is also stated to have contracts for the future delivery of 40 Lockheed four-motor transport aeroplanes (probably the Lockheed Constellation), 16 Douglas DC-3As and three DC-4s, as well as letter-agreements with the manufacturers for 19 more DC-4s and 27 DC-3s.

At the end of 1941 Pan-American Airways and its subsidiaries employed a total staff of 21,663. Ton-miles flown during the year amounted to 110,000,000, of which Pan-American flew 75,000,000; passengers carried totalled 375,732, of which Pan-American carried 285,095; and air express amounted to 11,800,000 lb., of which Pan-American accounted for 5,500,000 lb. The Company's net income for 1941 was \$3,361,251 (about £752,280).

## Business in America

THE AMERICAN PEOPLE are more "air-minded" than they were two years ago, according to Mr. G. A. Vandervell, founder, Chairman and Managing Director of Vandervell Products, Ltd., manufacturers of thin wall bearings for all types of internal-combustion engines.

Mr. Vandervell says that there are now hourly services between the principal cities of the U.S.A. and "sub-stratosphere" flying in pressure cabins on many of them—or were before the U.S. air lines were placed on a war basis.

A novel form of bulk air travel has been introduced for business men. Metal discs, actually steel dies about the size of a visiting card, are issued. When journeys are to be made these discs are placed in a machine which stamps the tickets with details of each journey, and of the holder. Fares are charged to the business company, no payment being made at the time the journey is made. A discount similar to the bulk railway travel in this country is allowed. Commercial travellers who object to flying, Mr. Vandervell thinks, would find it difficult to get jobs in the U.S.A.

Mr. Vandervell, who is an Englishman, has been made a Director of the Cleveland Graphite Bronze Company, an American concern. This Company provides bearings for more than half the power units of the automobile and aeroplane industries of the United States. Vandervell Products are the sole British licensees.

Thin wall bearings, in which this Company specialises, are a new and important branch of British industry. This type of bearing is now used in aero-motors.

## The London Aeroplane Club

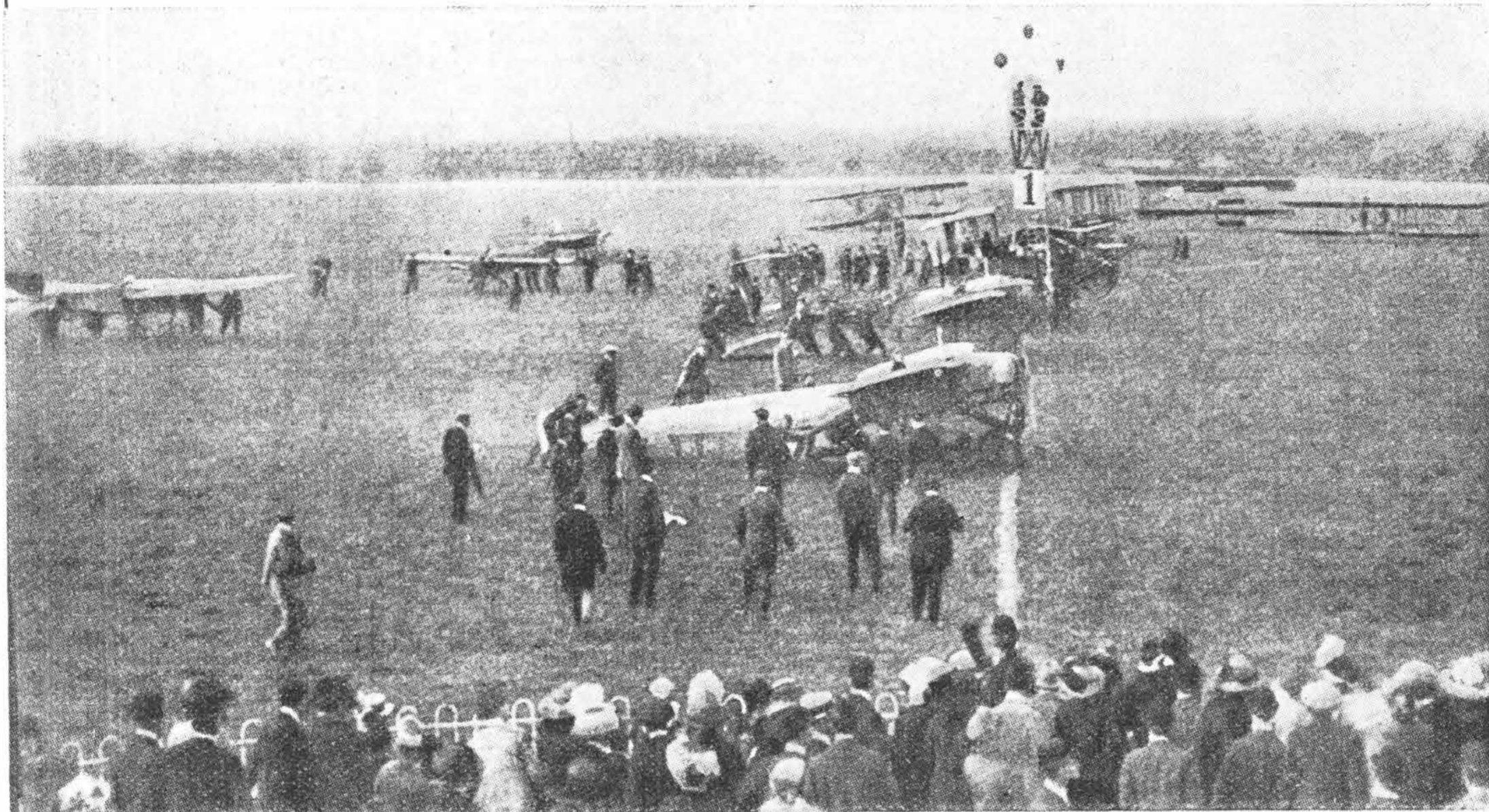
A SOUND FINANCIAL POSITION in readiness for post-war activity was shown at the 16th Annual General Meeting of the Directors of the London Aeroplane Club proprietary, held at the registered offices on July 4. Major K. M. Beaumont, D.S.O., was in the Chair, and Messrs. F. T. Hearle, W. E. Nixon, F. E. N. St. Barbe, and Commander H. E. Perrin were present. The Chairman moved the adoption of the Revenue Account and Balance Sheet for the year ended September 30, 1941. This was seconded by Mr. W. E. Nixon and carried unanimously.

In the course of his address, the Chairman expressed satisfaction with the position of the Club's finances, which, he said, would be a most valuable factor when the time came to renew the activities suspended on account of the War. The Club was ready to resume its functions immediately the opportunity presented itself and this he hoped would not be at too distant a date.

He referred to the excellent work which the Club's instructors are doing for the training of war pilots, etc., and to the many letters which he, Commander Perrin, and others have received from members of the Club now widely scattered in various parts of the World.

On the motion of the Chairman, seconded by Commander H. E. Perrin, Mr. F. T. Hearle was unanimously re-elected a Director. Messrs. Bevis Walker and Company were unanimously re-elected Auditors on the motion of Mr. W. E. Nixon, seconded by Mr. F. E. N. St. Barbe. A vote of thanks to the Chairman closed the proceedings.

## SIDELIGHTS FROM THE PAST—XXXI



THE FIRST AERIAL DERBY—HENDON, JUNE 8, 1912.—Mr. Sippe had just taken off. Mr. Sopwith's Blériot is seen in the foreground. Beyond it are Mr. Hamel's Blériot and Mr. Verrier's Maurice Farman, and just beyond the pylon is the Radley-Moorhouse of Mr. Rhodes-Moorhouse. On the left Mr. Valentine's Bristol Monoplane is being wheeled into line, and facing it is M. Guillaux's Caudron.

THE FIRST annual air event of national importance in Great Britain, and the first speed air race in the World to become an annual event, was the Aerial Derby, a race round London starting and finishing at Hendon. It was sponsored by the "Daily Mail," which presented a 100-guinea trophy, and for the first year cash prizes totalling £400 were given by Mr. Harold Barlow. The first Aerial Derby was flown on June 8, 1912, over a course of 81 miles and was won by Mr. T. O. M. Sopwith flying his 70 h.p. Blériot monoplane at an average speed of 58.5 m.p.h., though his win was disputed.

The course, with six turning points, was:—Hendon-Kempton Park, 14 miles; Esher, four miles; Purley, 11 miles; Purfleet, 18 miles; Epping, 16 miles; High Barnet, 14 miles; and the London Aerodrome, Hendon, four miles.

June 8 was not a good day, but in spite of a wet morning and a dull afternoon some 40,000 people paid for admission to Hendon and spectators thronged the turning points and the whole course of the race.

Fifteen entrants were expected, but only seven competitors took off. The first pilot left at 16.38 hrs. and the others followed at intervals of one minute. The order of starting was:—S. V. Sippe (50 h.p. Hanriot monoplane); T. O. M. Sopwith (70 h.p. two-seat Blériot monoplane, flying solo); Gustav Hamel (70 h.p. two-seat Blériot with Miss Trehawke Davies as passenger); P. Verrier and passenger (70 h.p. Maurice Farman biplane); Mr. Rhodes-Moorhouse (50 h.p. Radley-Moorhouse); M. Guillaux (single-seat Caudron monoplane with 45 h.p. Anzani radial motor); and J. Valentine (two-seat 50 h.p. Bristol Monoplane).

Only four pilots finished the course. Mr. Sippe was forced down with motor trouble; Mr. Verrier got lost after the Purley turning point and flew almost to Brighton before turning back; Mr. Rhodes-Moorhouse also got off his course as far as Sevenoaks before turning back for Purfleet; and Mr. Valentine's compass broke loose after he had crossed the Thames and he had to land at Harlow before proceeding on his course.

The race developed into a three-cornered contest between Mr. Sopwith, M. Guillaux and Mr. Hamel. Mr. Sopwith's Blériot was the fastest machine in the race, as although it was a similar model to Mr. Hamel's he had gained several miles an hour by covering over the second cockpit with canvas. M. Guillaux's little Caudron was almost as fast as the Sopwith Blériot and

after the race was considered to have proved itself one of the fastest aeroplanes for its power in the World.

Mr. Sopwith was the first man home, covering the 81-mile course in 1 hr. 23 mins., but on his arrival at Hendon he stated that there had been so much mist and rain South of the Thames that he had not actually seen the turning points at Purley and Purfleet and had purposely flown wide to make sure of getting round them. Shortly after he landed at Hendon an aeroplane was seen coming over from Barnet, but it disappeared behind the trees and not until late that evening was the mysterious machine discovered to have been M. Guillaux's Caudron. He had run out of petrol just before getting to Barnet and had been forced down. This was bad luck as otherwise he would have been the second man home.

Mr. Hamel was the second to arrive at Hendon, covering the course in 1 hr. 38 mins. Mr. Rhodes-Moorhouse and Mr. Valentine, the only other competitors to complete the course, did so in 2 hrs. and 2 hrs. 16 mins. respectively.

Mr. Sopwith flew most of the course at a height of about 300 ft., but Mr. Hamel preferred to fly at about 1,000 to 1,200 ft. and "vol plané" down to about 500 ft. around the turning point.

Mr. Sopwith was disqualified for passing inside the turning point at Purley. He appealed and a large amount of evidence was given proving that he had passed outside the mark at a distance of about half a mile and flying very low. Other evidence practically proved that the pilot who had passed inside was M. Guillaux, but the Stewards rejected Mr. Sopwith's appeal on the grounds that according to the rules competitors' numbers must be read by the observers at the turning points. Five months later the decision was rescinded and Mr. Sopwith was officially declared the winner of the first Aerial Derby.

The Aerial Derby was flown in 1913 and 1914 and was resumed again after the War in June, 1919. For these three races a "sealed handicap" was flown, but in 1920 a straight handicap time was introduced. The post-war Aerial Derbys were particularly interesting, but the last to be flown was in 1923, when it was won at 192 m.p.h. by the Gloster Bamel over a 200-mile course. The following year the Aerial Derby, Great Britain's only speed race and the oldest-established speed race in the World, was abandoned because there were no British entries and the prize money was not enough to attract foreign entries.

### A Production Award



**THE BRITISH EMPIRE MEDAL** has been awarded to Mr. W. L. Allardyce, Works Superintendent of the Aircraft Divn. of the de Havilland Aircraft Co., Ltd., in recognition of his services in production. After being wounded in the Great War, Mr. Allardyce worked for three years in the fitting shop of the Aircraft Manufacturing Co., Hendon, then three years with Handley Page, Ltd., before joining the de Havilland Co. in 1924. He

has risen through the stages of marker-off, charge hand, assistant foreman, foreman and assistant production engineer to his present appointment, which was made in Sept., 1940.

### The de Havilland General Meeting

**AT** the Annual General Meeting of the de Havilland Aircraft Co. Ltd. on April 28, the Directors recommended the payment of a dividend of 10 per cent., and the placing of a further £50,000 to the Special Investment Reserve and £10,000 to the Employees' Benefit Fund. The Chairman, Mr. A. S. Butler, said that the increases in Current Assets and Liabilities in the Balance Sheet reflected the biggest year in the Company's history. The large reduction of profit was entirely caused by increased taxation. He insisted that the incentive to all-out production was on moral grounds only, and that the present system of taxation prevented companies engaged in total war effort from setting aside adequate reserves for their reorganisation on a commercial basis after the War. Managements, he said, were too easily criticised in these times of difficulty and responsibility.

### Company Merger

**WHOLLY OWNED** subsidiary companies of Vickers-Armstrongs Ltd., the Whitehead Torpedo Co. Ltd., the Thames Ammunition Works Ltd., and the Variable Speeds Gear Ltd. are to be merged in Vickers-Armstrongs Ltd. in order to co-ordinate their activities as closely as possible.

### New Appointments

**MR. C. D. R. TUCKEY**, Assistant Works Manager of the Aston Works of British Timken, Ltd., has been appointed Works Manager of another Timken works, and Mr. H. K. B. Glassey is taking his place at Aston, where Mr. J. T. Emmerton will now be in charge of Planning.

### The British Standards Institution

**NEW SPECIFICATIONS** issued by the British Standards Institution include No. B.S. 1021-8, which covers cast copper alloys in four different alloys, thus bringing into use gun metals and bronzes with lower tin content than has previously been standard.

### Silver Wedding

**MR. AND MRS. L. E. METCALFE** celebrated their Silver Wedding on June 30. Mr. Metcalfe is Managing Director of Warwick Aviation Co. Ltd. and has been associated with the Aircraft Industry for more than 25 years.

### Red Cross Exhibition

**PHOTOGRAPHS** of British paratroops are among the pictures shown at an Exhibition in aid of the Red Cross Penny-a-Week Fund at Dorland Hall, Regent Street, London, S.W.1.

The Deputy Chairman of the Fund, Mr. Hugh Macrae, M.V.O., C.A., appeals to employers who have not yet instituted a Red Cross scheme in their organisations to write to him at Bramshill, near Basingstoke, Hants.

### Oil Engine Practice

**"PETROL AND OIL ENGINE DIFFERENCES"** is the title of a small handbook just published to assist those who, with a working knowledge of the petrol motor, are having to accustom themselves to the subtleties of the transport "Diesel." Aeronautical engineers and mechanics interested in the development of oil-engine propulsion in aviation may like to have this book by D. S. D. Williams, A.M.I.A.E. It contains 40 pages and 16 illustrations, and sells for 1s. 6d., and is published for Temple Press Ltd. by the English Universities Press Ltd., Warwick Square, London, E.C.4. The price by post is 1s. 9d.

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### In the Honours List

**MR. SYDNEY R. CAUTHERY**, Director of Production (Liaison Engines and Aircraft Equipment) at the Ministry of Aircraft Production was recently invested with the O.B.E. He joined the Air Ministry six months before the War and had previously been concerned with the design and manufacture of aircraft instruments at Kelvin, Bottomley and Baird's Glasgow office for seven years.



### Rainbow Indications

**PAINTS** which change their shade at various temperatures and retain these gradations when cool have been used for research on flame-damping in aeroplanes, and have been useful in finding comparative areas of heating in air-cooled motors, cooling systems, valve springs, turbine blades, cylinders and ball bearings. These colours are manufactured under the name of Thermindex by J. M. Steel and Co. Ltd., London and Manchester.

### For Oil Economy

**A REDUCTION** of at least 10 per cent. in lubricating oil consumption has been asked for by the Chairman of the Lubricating Oil Pool, Petroleum Board. Filters manufactured by Stream-Line Filters Ltd., Hele-Shaw Works, Ingate Place, London, S.W.8, save oil by removing particles of sand, dust, carbon and metal from used oil, which in itself does not lose its lubricating quality.

### A Glowing Distinction

**AN INGENIOUS SYSTEM** for the prevention of forged staff passes is employed in the Glo-Pass system of painting entrance cards with a lacquer which glows in the invisible rays of a special lamp in the doorkeeper's box. Different colours can be used to distinguish shifts or factories. The Colloidal Research Laboratories, Ltd., 66-70 Petty France, London, S.W.1, are the manufacturers.

### Control of Aluminium

**FROM** June 11, 1942, the maximum price of aluminium alloy scrap resulting from any machining operation, or in the form of grindings or filings, has been fixed by the Ministry of Aircraft Production at £50 per ton delivered free at the works of the buyer and £44 per ton delivered free at any other place, and for any other aluminium alloy scrap at £70 per ton and £65 per ton respectively. All enquiries should be addressed to the Ministry of Aircraft Production, Light Metals Control, Southam Road, Banbury, Oxon.

### For Picture Projection

**A USEFUL INSTRUMENT** for projecting photographs, maps, newspaper cuttings and similar illustrations up to a size of 5½ by 3½ ins., i.e., postcard size, is the Lumos Episcopa, manufactured by Real Photographs Co. Ltd., Victoria House, Southport, price £5 5s. It is arranged for an ordinary 100-watt household lamp, and fitted with a 5-in. focus Hemos corrected lens and special design of cooling system. The projection given is 3 ft. by 3 ft. at approximately 5 ft. from the screen.

### Making it Clear

**ALL METALS**, soft or hard, may be marked with the Actograph electric pen, made by Lorant and Co. Ltd., 100, Croydon Road, London, S.E.20, for writing on tools, jigs, fixtures, engine parts or materials. Power for these pens is taken from a 6-volt battery or a 5-6-volt transformer.

### Back Copies of "The Aeroplane"

**THE** following issues of THE AEROPLANE are urgently wanted:—1934: Apl. 4 and 11; May 30; Oct. 17; Dec. 19 and 26. Will any reader having these copies to spare please communicate with THE AEROPLANE?

### Sidelights

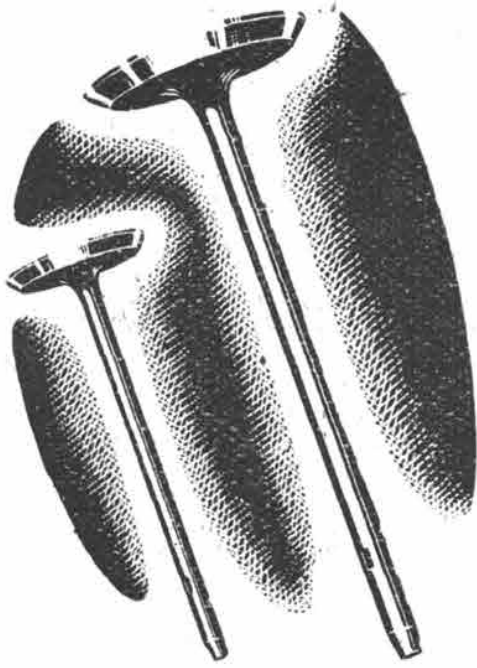
**THE** photograph of Sir Hiram Maxim in "Sidelights from the Past" last week was obviously of Sir Hiram and his compound steam engine and not Sir Hiram and the boiler for the engine, as was inadvertently stated.

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.

A24

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INSTRUMENTS



## Why did the valve bounce ?

When the engine designer nowadays wants to know exactly why a valve is fluttering in a most unseemly manner he tends more and more to say "Pass me the Stroboscope please." This instrument produces short, brilliant light flashes at a rate which can be synchronised exactly with the speed of the reciprocating object—the motion is "stopped" and our friend the designer can see the offending component as easily as if it were not moving at all. Or, if he cleverly alters the flashing rate, the reciprocating member appears to travel in slow motion. In fact the uses of the stroboscope in modern industry are innumerable. It permits anything which rotates or reciprocates to be carefully analysed *visually*, throughout the entire cycle of movements. Thus faults are shown up instantly.

All this, of course, is old stuff to the modern works engineer and researchist. But what he may *not* know is that we, representing many of the most important specialist manufacturing organisations here and in the U.S.A., can supply this electrically operated stroboscopic equipment for the visual examination of rapidly recurring mechanical phenomena, and all apparatus for single flash or ultra high-speed photography. We can also (priorities, etc., permitting) let him have instruments for the analysis of stresses and vibration, and bridges for the examination of raw materials—all, if we may say so, things which aren't easily come by these days.

*Claude Lyons*



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# COMMUNICATIONS

OLD AND NEW



## MESSAGES IN BOTTLES

**I**N Queen Elizabeth's reign an official Uncorker of Ocean Bottles was appointed. This followed the discovery by a Dover fisherman of an important political secret, which had come bobbing across the ocean in a bottle. For long after, any unauthorized person opening a bottle message stood a fair chance of being hanged.

### Mississippi—Isle of Wight

Many a ship's skipper has launched a message in a bottle, and a reply from distant lands has sometimes led to valuable data on wind-drifts and currents. An interesting voyage was made by a bottle dropped in the Mississippi, which was picked up ten months later off the Isle of Wight. Messages have been known to travel thus as far as ten thousand miles.

### Future of Mankind

While messages drift haphazardly across the waters, at the mercy of wind and tide, news now hums across the world by cable and wireless. In the arts of peace, as in the arts of war, this invisible force plays a vital part in shaping the future of mankind. With stations in every corner of the earth, Cable and Wireless Ltd. represents a vast overseas service. A message sent 'via Imperial' is an everyday miracle of rapid, reliable, and inexpensive communication.

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**FORTHCOMING EVENTS**

- July 17.—**Glasgow**.—S.C. No. 35 (Glasgow and West of Scotland R.S.A.).—Meeting at Coopers Smokeroom, Howard Street.—19.30 hrs.
- July 17.—**Reading**.—S.C. No. 53 (Reading).—Meeting at the Abbey Gateway.—19.15 hrs.
- July 17.—**Hoddesdon**.—S.C. No. 128 (Hoddesdon).—Meeting at the Clock House.—19.30 hrs.
- July 17.—**Richmond**.—S.C. No. 184 (Richmond).—Meeting at Darrel Road School, Darrel Road.—19.30 hrs.
- July 18.—**London**.—**N.A.S.C.—Annual General Meeting**.—At the Royal Aeronautical Society, 4, Hamilton Place, W.1.—11.00 hrs.
- July 19.—**Porlock**.—R.O.C.C. Branch 29 (Wellesley).—Meeting at the County Council School.—14.30 hrs.
- July 19.—**Newbury**.—R.O.C.C. Branch 42 (Newbury).—Meeting at Newbury Grammar School.—14.15 hrs.
- July 20.—**London**.—S.C. No. 156 (Islington).—Meeting at Northern Polytechnic, Holloway Road.—19.00 hrs.
- July 21.—**Lampeter**.—R.O.C.C. Branch 149 (Vale of Teify).—Meeting at Lampeter.—19.00 hrs.
- July 21.—**Southend**.—S.C. No. 1 (Southend).—Meeting at the A.R.P. Training Centre, 37, Southchurch Road.
- July 21.—**Newport**.—S.C. No. 20 (Newport).—Meeting at Newport Corn Exchange.—19.30 hrs.
- July 21.—**Leyland**.—S.C. No. 255 (Leyland).—Meeting at Leyland Motors Club.—19.30 hrs.
- July 22.—**Hastings**.—S.C. No. 47 (Hastings).—Meeting at White Rock Pavilion.—19.30 hrs.
- July 22.—**Rickmansworth**.—S.C. No. 81 (Rickmansworth).—Meeting at Picture House.—19.30 hrs.
- July 22.—**Hendon**.—S.C. No. 124 (Hendon).—Meeting at Hendon Technical College.—19.30 hrs.
- July 22.—**Belfast**.—S.C. No. 151 (Belfast Roof Spotters No. 1).—Meeting at the A.R.P. Post, 45, Howard Street.—20.00 hrs.
- July 22.—**Newcastle**.—S.C. No. 272 (Tyneside).—Meeting at the Crows Nest Hotel, Haymarket.—19.00 hrs.
- July 23.—**Lincoln**.—S.C. No. 200 (Lincoln).—Meeting at the Spring Hill Council School.—19.00 hrs.
- July 24.—**Hoddesdon**.—S.C. No. 128 (Hoddesdon).—Meeting at the Clock House.—19.30 hrs.

**Company Notices**

**NEW COMPANIES**

- Aerotechnic (Reading), Ltd.**—Private co. Regd. July 1. Cap. £1,000 in 750 ordinary shares of £1 each and 1,000 ordinary shares of 5s. each. To carry on the business of manufs. of aero engines, aircraft and accessories, etc. Directors: Frank K. Bourne, Albert H. Watkins, John H. Stratton and Edward W. T. Turner. Solrs.:—Sheppard and Fullbrook. Regd. Office:—134, Broad St., Reading.
- Chingford Model Aerodrome, Ltd.**—Private co. Regd. June 30. Cap. £1,500 in 1,500 shares of £1 each. To carry on the business of manufs. of and dealers in models, toys and novelties, etc. Directors:—Geo. H. Pyle, Chas. S. Stevens, Fredk. A. Barrett. Regd. office:—625, High Rd., Tottenham, N.17.

**INCREASES OF CAPITAL**

**Thames Aircraft and Engineering Co., Ltd.**, 9, Arundel St., W.C.2.—Nom. cap. has been increased by the addition of £9,900, in £1 ordinary shares, beyond the regd. cap. of £100.

**MORTGAGES AND CHARGES**

**G. Q. Parachute Company, Ltd.**—Assignment on June 23, 1942, of proceeds of certain contracts, to secure all moneys due or to become due from the company to Barclays Bank, Ltd.

**SATISFACTIONS**

**Modern Seamless Tube Company, Ltd.**—Satisfaction to the extent of £10,650 (amount issued) on Sept. 4, 1941, of debentures authorised April 12, 1939, and regd. April 27, 1939, securing £20,000. (Notice filed June 23, 1942.)

**New Patents**

**Applications Accepted**

- 545,909.—**W. O. Duncan** (Engineering and Research Corp.).—Aircraft Construction.—Nov. 8, 1940.
  - 545,915.—**United Aircraft Corporation**.—Resilient engine mounts.—Dec. 20, 1939.
  - 545,943.—**Dowty Equipment Ltd.** and **H. H. Smith**.—Aircraft alighting gear.—Dec. 23, 1940.
- Opposition period expires Sept. 1, 1942.  
Printed specifications available July 16, 1942.

**PERSONAL NOTICES**

- Threapleton**.—On July 2, at Grimsby, to Eileen (née Watson), wife of Wng. Cmdr. Alfred Threapleton, R.A.F. (India)—a son.
- Walker**.—On July 4, at Plymouth, to Rosemary (née Medd), wife of Flg. Off. Robert Walker, R.A.F.V.R.—twin sons.
- Wigington**.—On July 4, at Redhill, to Dorothy (née Langford-Thomas), wife of Plt. Off. Robert Wigington (killed on air operations May, 1942)—a son.
- Yonge**.—On July 2, at Ashurst, to Maretta (née White), wife of Plt. Off. A. D. Yonge, R.A.F.V.R.—a son.

**FORTHCOMING MARRIAGES**

- Badenoch—Brunton**.—The engagement is announced between A. W. Badenoch, M.A., M.D., F.R.C.S., R.A.F.V.R., son of the late Mr. J. A. Badenoch and Mrs. Badenoch, of Banff, and Jean McKinnell Brunton, M.B., Ch.B., daughter of the late Mr. Alexander Brunton and Mrs. Brunton, of Levenhall, Musselburgh.
- Craig—Talman**.—The engagement is announced between W. J. Craig, M.B., R.A.F.V.R., son of the late Sir James Craig, of Dublin, and of Lady Craig, and Margaret Elizabeth Talman, daughter of Mr. John Talman and Mrs. Talman, of Glasgow.
- Derbyshire—Smeddle**.—The engagement is announced between Flt. Lt. N. Derbyshire, R.A.F., son of Mr. and Mrs. Derbyshire, of Crewe, and Beryl Smeddle, W.A.A.F. only daughter of Major and Mrs. Smeddle, of Harrogate.
- Drobinski—Lewis**.—The engagement is announced between Flg. Off. Boleslaw Drobinski V.M.; K.W., D.F.C., of the Polish Air Force, and Marie, daughter of Mr. and Mrs. Stafford Lewis, of Romsey.
- Goldhaar—Morgan**.—The marriage has been arranged, and will take place at St. James's, Spanish Place, on July 18, between Flg. Off. Jerzé Goldhaar and Flt. Off. Joan P. Morgan, W.A.A.F., only daughter of Brig. and Mrs. M. C. Morgan, of London.
- Guest—Browne**.—The engagement is announced between Flt. Lt. K. E. Guest, R.A.F.V.R., elder son of Mr. and Mrs. W. E. Guest, of Northumberland, and Elizabeth A. Brown, P.M.R.A.F.N.S.R., youngest daughter of the late Mr. E. Browne and Mrs. Browne, of Alvecot.
- Hughes—Robertson**.—A marriage has been arranged and will shortly take place, between Flg. Off. J. R. Hughes, R.A.F.V.R., M.B., Ch.B., second son of Mr. and Mrs. R. L. Hughes, of Llangollen, and Lettice Mary Robertson, M.B., Ch.B., youngest daughter of Mr. and Mrs. Ainslie Robertson, of Caldly, Cheshire.
- Mansfield—Starke**.—An engagement is announced between Sub-Lt. G. S. Mansfield, R.N.V.R., F.A.A., elder son of Mr. and Mrs. S. R. Mansfield, of North Chingford, and Betty, only daughter of Mr. and Mrs. A. Bruce Starke, of Southolt and Westcliff-on-Sea.
- Mather—Townsend**.—The engagement is announced between Plt. Off. Eric Mather, R.A.F.V.R., second son of Mr. and Mrs. H. G. Mather, of Pinner, and Joan, only daughter of Mr. and Mrs. C. Townsend, of Maidenhead.
- Mead—Robinson**.—The engagement is announced between Sqdn. Ldr. J. F. Mead, R.A.F.V.R., and Mildred, widow of H. W. Robinson, of Chippenham.
- Morton—Prentice**.—The engagement is announced between Wng. Cmdr. A. R. (Dick) Morton, R.A.F., son of Mr. and Mrs. A. R. Morton, of Portsmouth and Newcastle, and Doreen Margaret, only daughter of Mr. and Mrs. R. J. C. Prentice, of Pretoria, Transvaal.
- Nichols—Nuck**.—The engagement is announced between R. Bowering Nichols, Chief Aircraft Inspector, Worcester Windshields, and late of the 6th Cavalry Training Reg., only son of Mr. and Mrs. A. J. Nichols of Bristol, and Mrs. D. H. Nuck, widow of Plt. Lt. D. H. Nuck, and only daughter of Mr. and Mrs. Higgs, of Edgware.
- Reid—Darvell**.—The engagement is announced between Sqdn. Ldr. E. G. B. Reid, R.A.F.O., only son of Mrs. H. J. Reid, of Worthing, Sussex,

- and Barbara, only daughter of Mrs. M. Darvell, of Finchley, and the late Mr. A. P. Darvell.
  - Roberson—Bray**.—The engagement is announced between Plt. Off. J. L. Roberson, R.A.A.F., only son of the late Mr. P. J. Roberson and Mrs. Roberson, of Sydney, Australia, and Katharine Stansfeld Bray, V.A.D., only child of the late S. H. Bray and Mrs. Bray, of Leeds.
  - Trevor-Roper—Edwards**.—The engagement is announced between Plt. Off. R. D. Trevor-Roper, D.F.M., R.A.F., only son of the late Capt. C. C. Trevor-Roper, of Plas Teg, Flintshire, and of Mrs. R. H. Poyntz of Ruthin, and Patricia Audrey, only daughter of Mr. R. B. Edwards, of Nottingham, and of Mrs. D. F. Menzies, of Skegness.
  - Walker—Willcox**.—The engagement is announced between Grp. Capt. G. A. Walker, D.S.O., D.F.C., R.A.F., younger son of Mr. and Mrs. G. H. Walker, of Leeds, and Dorothy Brenda, widow of Sqdn. Ldr. E. P. Willcox, D.F.C., and elder daughter of Mr. and Mrs. Hewitt Brewis, of Westcliff-on-Sea.
  - Webb—Bailey**.—The engagement is announced between Act. Sqdn. Ldr. G. F. H. Webb, D.F.C., A.A.F., only son of the late Mr. G. R. Webb and Mrs. Webb, of London, and Frances M. A. Bailey, only daughter of Mr. and Mrs. G. E. Bailey, of Hale, Cheshire.
- MARRIAGES**
- Baker—Hoskins**.—On June 27, Plt. Off. J. W. Baker, R.A.F., to Sonia Deirdre, only daughter of the late Capt. N. Hoskins, 1st North Staffs and R.F.C.
  - Bird—Benton**.—On July 4, in London, Plt. Off. A. L. Bird, R.A.F., younger son of Mr. and Mrs. W. L. Bird, of Friern Barnet, to Elizabeth Mary Benton, only daughter of Mr. and Mrs. R. G. Benton, of London.
  - Blaikley—Duncan**.—On July 1, at Omagh, N.I., Robert Marcel, 2nd Lt., R.A., youngest son of Mr. and Mrs. A. J. Blaikley, of London, to A/S/O Alice Mary, W.A.A.F., only daughter of the late Dr. Duncan and Mrs. Glasgow, of Omagh.
  - Broad—Lambert**.—On July 4, at Oxford, Wng. Cmdr. Peter Broad, son of the late H. L. Broad and Mrs. Broad, of Grafton, to Peggy, daughter of Dr. and Mrs. Bertram Lambert, of Oxford.
  - Fisher—Brown**.—On July 3, at Buckland, Devon, Sqdn. Ldr. R. R. P. Fisher, R.A.F., to S/O K. M. Brown, W.A.A.F.
  - Goodman—Tallack**.—On July 4, at Chislehurst, Flg. Off. G. W. Goodman, R.A.F.V.R., elder son of Mr. and Mrs. L. P. Goodman, of Brockley and Wokingham, to Rhona Joyce, third daughter of Mr. and Mrs. F. H. C. Tallack, of Chislehurst.
  - Hogg—Hall**.—On July 1, at Mildenhall, Plt. Off. Alex Hogg, eldest son of Mr. and Mrs. W. Hogg, of Edinburgh, to Barbara, younger daughter of Sqdn. Ldr. and Mrs. P. Hall, of Mildenhall.
  - Home—Brown**.—On June 30, in Cairo, Flt. Lt. Patrick Home, to Ruth Nancy Brown, of London.
  - Kerr—Wills**.—On June 20, at Castel Combe, Wilts, Wng. Cmdr. H. M. Kerr, A.F.C., son of the late Mr. James Kerr and Mrs. Kerr, of Irvine, Ayrshire, to Miss I. B. M. Wills, only daughter of the late Capt. Bruce Wills and Mrs. Wills, of Chippenham.
  - Pavey—Caselton**.—On July 4, at Morden, J. W. Pavey, R.A.F., to Vera Ellen Caselton.
  - Racine-Jaques—Jones**.—On May 30, in Cairo, Flt. Lt. R. D. Racine-Jaques, R.A.F.V.R., eldest son of Mr. and Mrs. Racine-Jaques, of Staines, to Phoebe J. Elaine Jones, eldest daughter of Mr. and Mrs. W. G. Jones, of Cairo.
  - Seymour—Hutchings**.—On July 4, at Salt, Wng. Cmdr. R. G. Seymour, R.A.F., to A/S/O Dorothy Beatrice Hutchings, W.A.A.F.
  - Smith—Gane**.—On June 20, at Aldershot, 2nd Lt. K. V. Smith, R.T.R., younger son of Mr. and Mrs. Vernon Smith, of Finchley, to Marjorie Gane, W.A.A.F., youngest daughter of Mrs. A. Gane and the late Mr. R. H. Gane, of Guildford.
  - Watson—Rendle**.—On July 4, at Pollington Church, Yorks, Flg. Off. W. L. Watson, D.F.C., to Corpl. Joan Edgcombe Rendle W.A.A.F., of Bedford.

- BIRTHS**
- Abbott**.—On July 4, at Lincoln, to Doris (née Lenygin), wife of Flt. Lt. E. R. Abbott, D.S.O., D.F.M.—a son.
  - Briscoe**.—On July 7, at Oxford, to Daphne, wife of Flt. Lt. W. W. Briscoe, R.A.F.O.—a son.
  - Brown**.—On July 5, at Fulmer, to Mary (née Fawthrop), wife of Flt. Lt. T. R. Brown, R.A.F.V.R.—a daughter.
  - Butler**.—On July 4, at Stansted, to Elena, wife of Roland Butler, H.A.C., R.A.F.V.R.—a son.
  - Challis**.—On July 7, in London, to Lucy (née Fletcher), wife of H. S. Challis, R.A.F.V.R.—a son.
  - Drakes**.—On July 3, at Great Malvern, to Barbara (née Beauchamp), wife of Sqdn. Ldr. David Drakes, R.A.F.O. (reported missing November, 1941)—a son.
  - Dunsford**.—On July 3, at Fulmer, to Stella (née Monkhouse), wife of K. M. Dunsford, R.A.F.V.R.—a daughter.
  - Edwards**.—On July 3, at Dewsbury, to Patricia (née Clay), wife of Flt. Lt. I. H. Edwards, R.A.F.V.R.—a daughter.
  - Farrington**.—On July 2, at Moreton-in-the-Marsh, to Alison (née Barbour), wife of Sqdn. Ldr. A. L. Farrington, R.A.F.—a son.
  - Foley**.—On June 28, at Elgin, to Lillian (née Baker), wife of Plt. Off. A. W. J. Foley, R.A.F.—a son.
  - Formby**.—On July 2, at Windsor, to Patricia Margaret, wife of Sqdn. Ldr. Myles Formby, R.A.F.V.R.—a son.
  - Hall**.—On July 4, at Gwelo, Southern Rhodesia, to Gwen, wife of Sqdn. Ldr. David G. Hall, R.A.F., of Purley, a daughter (Sunny Diana).
  - Heeley**.—On July 3, at Ludlow, to Eileen, wife of Flt. Lt. V. C. J. Heeley, R.A.F.V.R.—a daughter.
  - Hill**.—On July 3, at Ealing, to Margaret (née Hughes), wife of Plt. Off. D. D'A. Hill, R.A.F.V.R.—a son.
  - Hornby**.—On July 3, at Sanderstead, to Ciceley, wife of Plt. Off. J. B. Hornby, R.A.F.V.R.—a son.
  - Jacklin**.—On July 1, at Salisbury, S. Rhodesia, to Dorothy, wife of Flt. Lt. Edward Jacklin, R.A.F.—a daughter.
  - Legh-Smith**.—On July 4, at Newbury, to Marguerite Anne (née Metcalf), wife of Sqdn. Ldr. Legh-Smith, R.A.F.—a son.
  - Long**.—On July 6, at Northampton, to Zet, wife of Plt. Off. H. J. Long—a daughter.
  - Lowdell**.—On June 29, at Leicester, to Winifred, wife of Wng. Cmdr. Lowdell, R.A.F.O.—a son.
  - MacRae**.—On July 5, in London, to Nancy (née Lewis), wife of Flt. Lt. D. J. MacRae, R.A.F.V.R.—a daughter.
  - Marrow**.—On July 5, at Epping, to Barbara, wife of the Rev. P. Marrow, R.A.F.V.R.—a son.
  - Masterman**.—On June 29, at Sheen, to Cynthia (née Comfort), wife of Wng. Cmdr. C. A. Masterman, O.B.E.—a son.
  - McGuffie**.—On July 7, at Macclesfield, to Joan (née Openshaw), wife of the late Flg. Off. Hugh McGuffie, R.A.F.V.R.—a daughter.
  - Merritt**.—On July 5, at Basingstoke, to Ruth (née Padfield), wife of Wng. Cmdr. K. A. Merritt, R.A.F.—a daughter.
  - Morshead**.—On June 30, at Banchory, to Violet (née Kerr), wife of Grp. Capt. V. D. E. Morshead—a daughter.
  - Payne**.—On July 4, at Northwood, to Pamela (née Coade), wife of Plt. Off. G. Payne, R.A.F.V.R.—a son.
  - Rollings**.—On June 30, at Southport, to Olive (née Elton), wife of Flg. Off. Rollings, R.A.F.V.R.—a son.
  - Ross**.—On July 4, at Helston, to Thelma (née Gray), wife of Flg. Off. Barry Ross—a son.
  - Rowson**.—On July 7, at Horley, to Margaret (née Windsor), wife of A. L. Rowson, R.A.F.V.R.—a daughter.
  - Simpson**.—On June 30, to Winifred (née Gouge), wife of Plt. Off. A. W. Simpson (prisoner of war)—a daughter.
  - Suffolk**.—On July 7, at Salisbury, to Rosamond (née Oliver), wife of Flt. Lt. F. F. Suffolk, R.A.F.V.R.—a daughter.

## CORRESPONDENCE

### Freighter Turned Ambulance

I MUST correct—and add to—the recent correspondence in THE AEROPLANE, re Avro Aldershot, as I happen to know something about it, having flown it a lot and the development—the Andover.

Actually, one squadron was equipped with the Aldershot—No. 99 Squadron in 1922. The machine was fitted with a 600 h.p. Rolls-Royce Condor 113 motor.

The Aldershot-Cub was also being experimented with at about this time, and subsequently tested at R.A.E. (Incidentally the Aldershot-Cub was looped at Farnborough by one Bassett.)

The Aldershot was not a great success, as the motor was very heavy and the aircraft under-powered.

A development of the Aldershot was the Andover—same wings, a Condor III (650 h.p. motor with spur-type reduction gear instead of the epicyclic type on the 113), and a longer cabin-type fuselage. It was designed as a freighter, but there were very few made. We had three at Halton, where they were used as experimental air ambulances. Eventually they faded out, but the Andover was a great improvement on the Aldershot and I, personally, liked it. D.D.

### The Avro Aldershot

I NOTE with interest an article in your magazine of July 3 headed "Cub and Typhoon." It may be of interest to Mr. R. M. Dye, yourself and readers to know that round about 1925 Imperial Airways had an Avro Aldershot machine for certain purposes, and I can definitely inform you that this machine was fitted with a Rolls-Royce Condor engine.

F. S. SAUNDERS, Service Equipment Engineer,  
British Overseas Airways Corporation.

[The omission of the Rolls-Royce Condor from the genealogy of the Avro Aldershot was rectified in THE AEROPLANE of July 10. Notwithstanding the unsuitability of the engine, the Aldershot had a longer life, as Mr. Dye's letter shows, than most people supposed.—ED.]

### Technical Instruction in the R.A.F.

SO MUCH was said, or insinuated in Lexicon's letter about the R.A.F. technical instructors that anyone outside the Service would get the idea that the R.A.F. fitters and riggers are semi-skilled. The R.A.F. fitters and riggers are as a group the best aircraft engineers in the World.

The Flight Mechanic, to be of use in a Squadron, must be able to service not one type but all types of aeroplane, and more than that, he must be able to do this work, not in a spotlessly clean workshop, but in the open field or in a canvas hangar. Then, to teach our shopkeepers to do this work, who is more qualified than a man who has had anything from eight to 20 years' continuous experience in this work?

Lexicon insinuates that the R.A.F. tradesmen are incompetent; that they cannot make male and female kits, or even drill a bolt to receive a split pin. My advice to him is to ask to see the work of senior apprentices; in fact, he should have done this before airing his views on the ability of R.A.F. tradesmen.

Then there is the question of what is taught and what should be taught. Lexicon thinks that R.A.F. technical training is an arbitrary affair, each instructor teaching what he thinks fit. A syllabus is laid down by competent men, who rightly think that the F/Mech. or rigger should know how to identify bolts, and that a fitter should know his metallurgy. The instructors instruct according to the syllabus and the "board" question on the syllabus. Metallurgy is so important these days that the study of it should be encouraged. It is so important to know what steel to use, how to recognise the steel, and what heat treatment to give it.

A fitter in the R.A.F. does not profess to be able to do a job as quickly as a factory fitter who has been doing that same job for months, maybe years, but the airman can do it as accurately, and accuracy is everything if our machines are to remain as airworthy as they are now. Fast work comes with experience; we cannot teach experience, but we teach accuracy, and fast work will follow.

We are out to do our best; therefore we welcome criticism; but let the criticism be practical and constructive, not destructive.

SERGEANT TRADESMAN.

### Combined High Command

THE PROTRACTED controversy now proceeding on the functions of the various fighting Services, together with all its various side-issues of big ships versus little ships, independent command, etc., seems to have reached that stage where the shouts of the latest comer hold the audience in spell without arriving any nearer a solution. It seems, therefore, that barking is all up the wrong trees, and what is really wrong with our fighting Services is the lack of training of suitable officers for the High Command, not of the Navy, the

Army and the Air Force, but of the "War Force" as a whole. What is visualised is an extension of the system at present in vogue in each individual Service, whereby any combatant officer, irrespective of the department of his Service in which he has specialised, may become a general Commander, to embrace the whole of the three Services.

It would be necessary for the training of such officers to set up a new staff college called the "War Command College," where the students would divest themselves of the hide-bound traditions of the Service in which they started their career and take on a new tradition of the subordination of everything else to the main issue, i.e., the High Command of "War Forces" of any or all arms of the three Services.

Such a scheme as this will no doubt sound "frightfully heretical" to Admiral, General and Air Marshal alike. Maybe it will sound Utopian to the average officer of any of the Services to-day, yet it would seem to be the solution to a vexed problem, as only by some such scheme can officers be produced who will hold the balance evenly among all arms of all branches and really co-ordinate the war effort.

It may seem strange to suggest the introduction of such a scheme during the greatest of all wars to date, but what better time will there be that will throw up to the top the most suitable young men, or give greater opportunities for testing out theories and observing results? In fact, actual war will provide a better basis on which to build the training syllabus than could any peace-time theories.

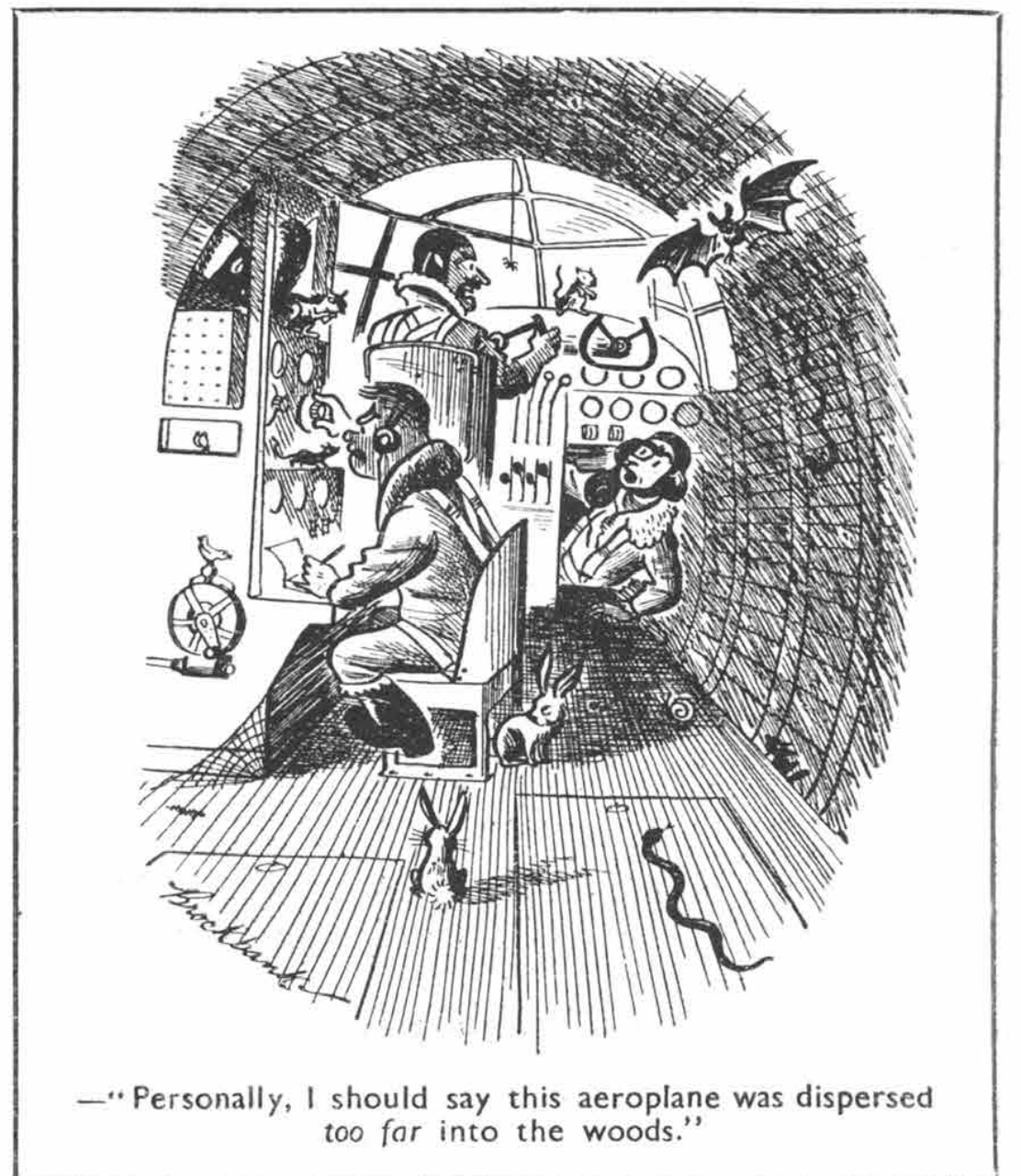
L. E. GREEN.

### The "Hoppity" Trainer

REFERRING to the picture and description of the "Hoppity" ground trainer, as shown on page 709 in the June 19 issue of THE AEROPLANE, I would like to point out that the description is not quite accurate. This machine was designed and built by P/O S. F. Youles and myself for the members of the 1440 Squadron, Air Training Corps, and its purpose was not only to give Cadets training in engine drill and starting drill, but also to teach them to handle the stick and rudder bar. It has all the normal controls of a full-sized aeroplane. The fuselage is mounted on a gimble joint on a three-wheeled undercarriage, which allows the machine to tip forward on to the nose wheel or when at rest to lie back on the tail skid, and also allows the wings to droop to one side or the other. The whole idea of the machine is that when sufficient speed is obtained over the ground the control surfaces of the ailerons, rudder and elevator become operative and the machine can be balanced on the two central wheels.

The machine has had several week-ends' work at an R.A.F. station, and when it is travelling at the proper speed over the ground it can be balanced in all planes perfectly steadily.

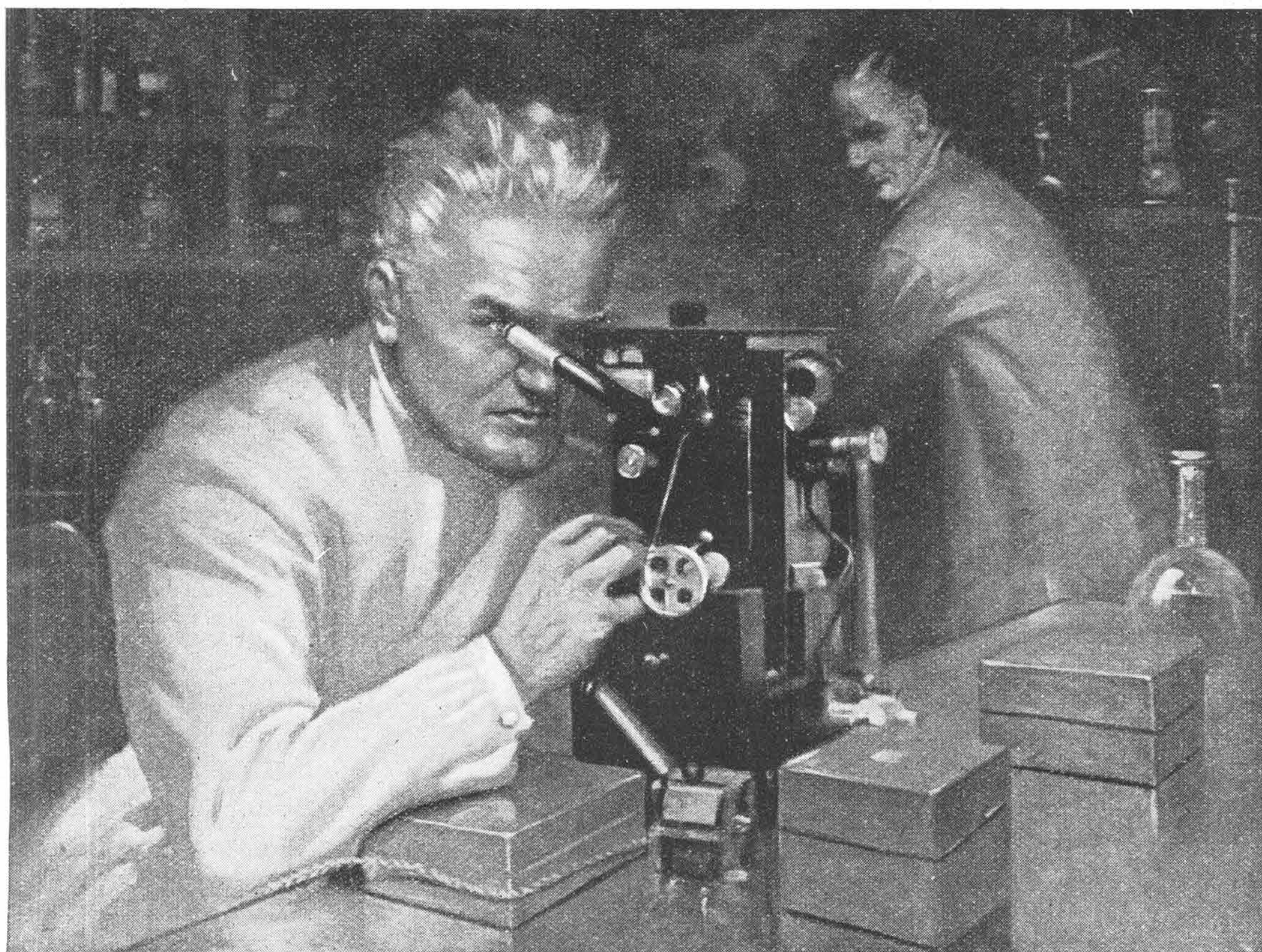
S. G. STEVENS, F/O.



—"Personally, I should say this aeroplane was dispersed too far into the woods."

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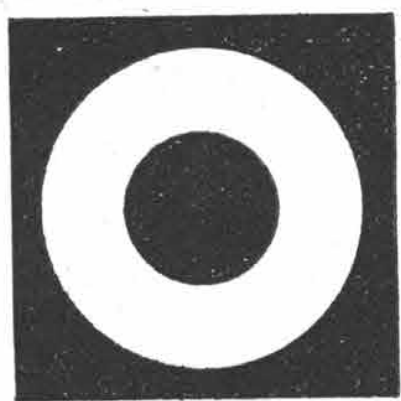
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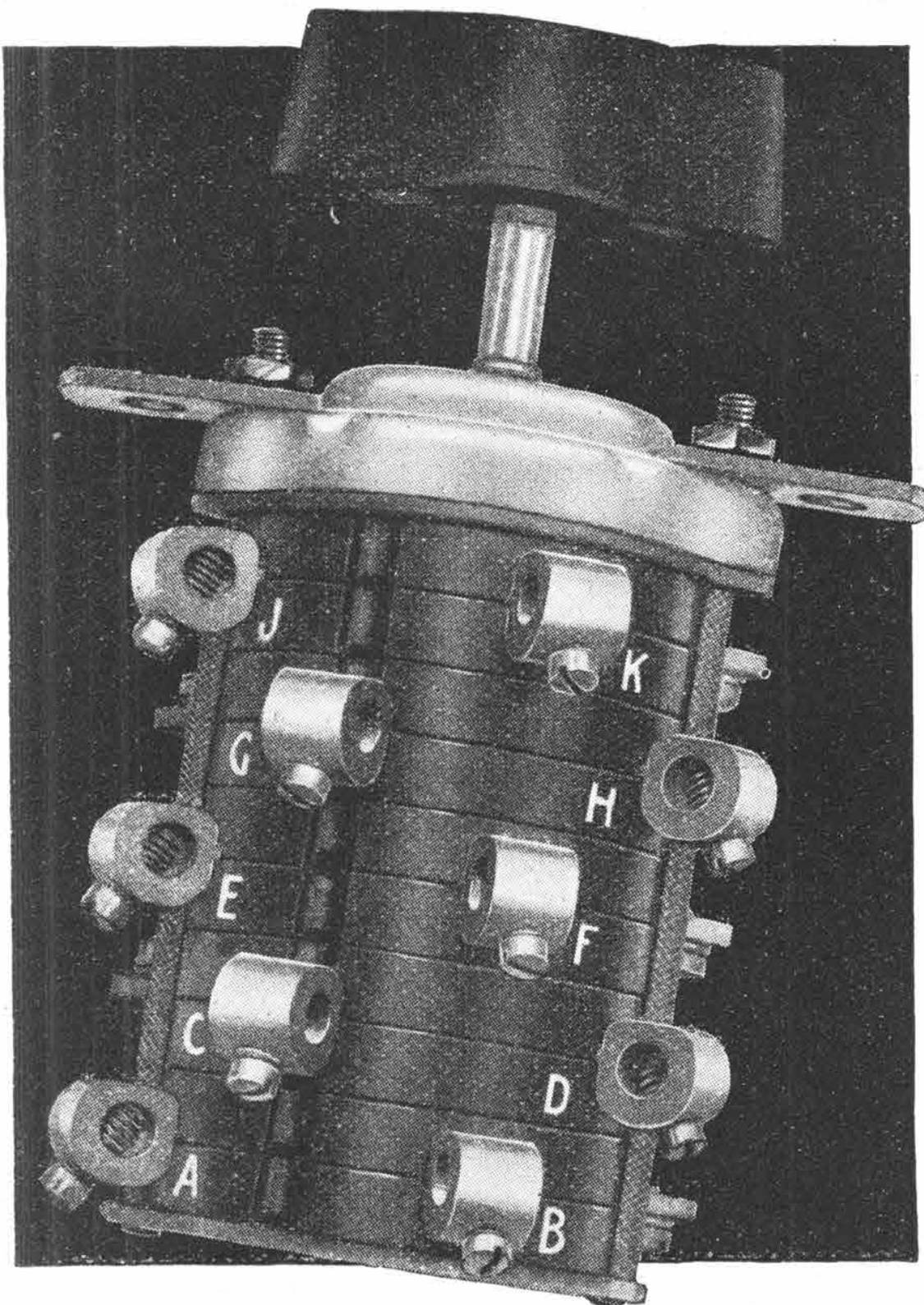
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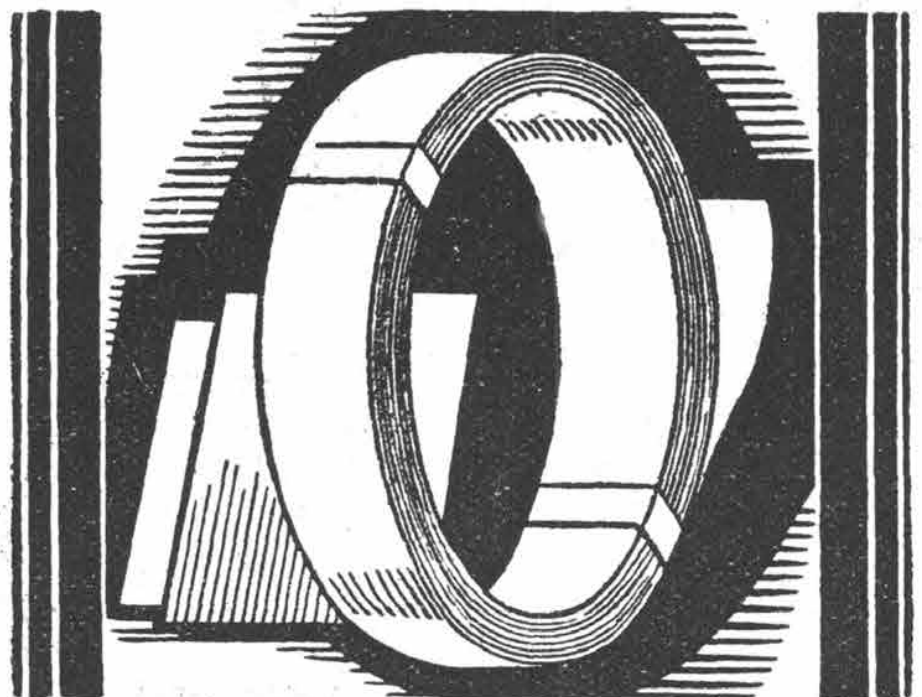
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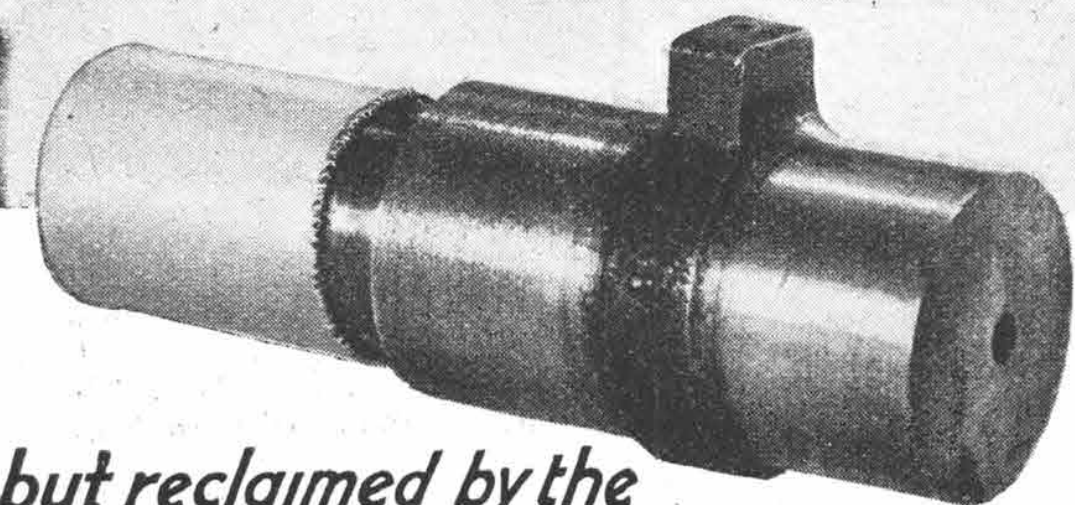
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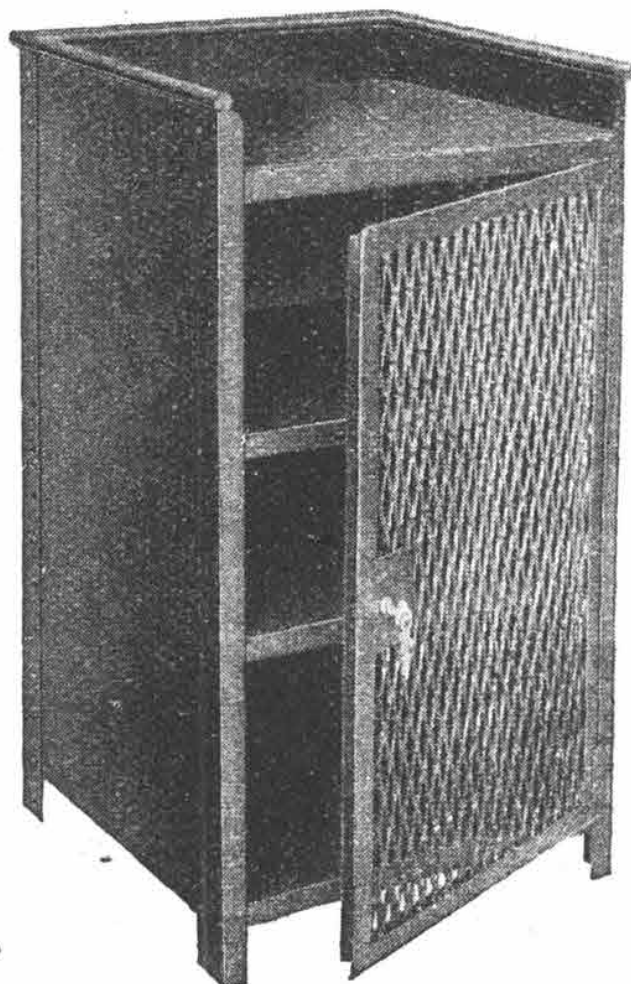
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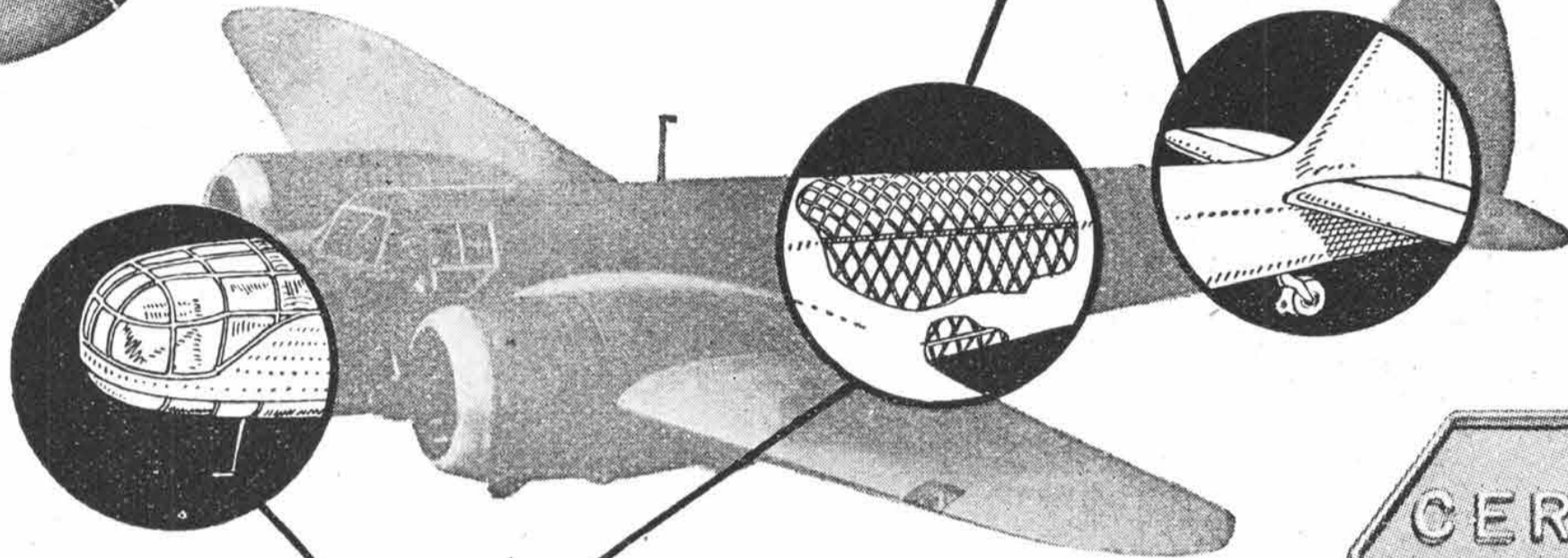


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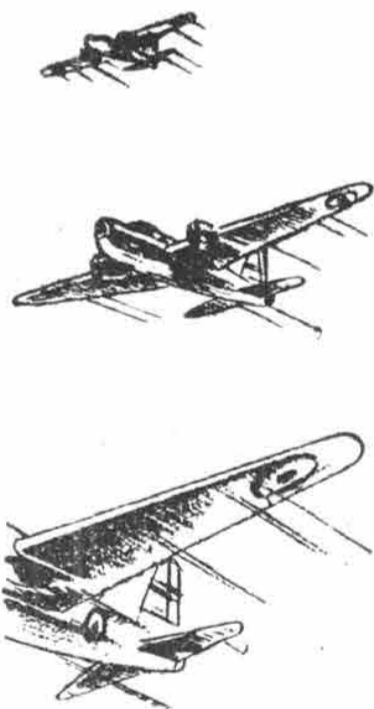
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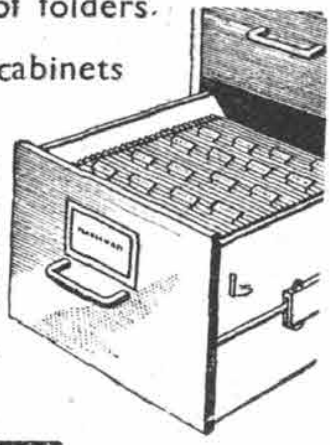
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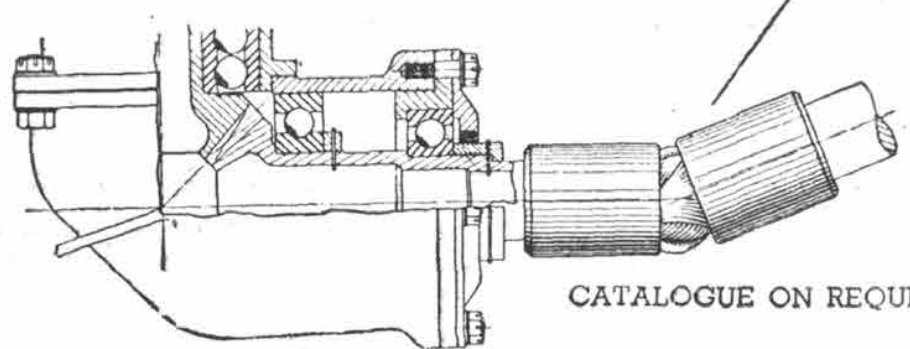
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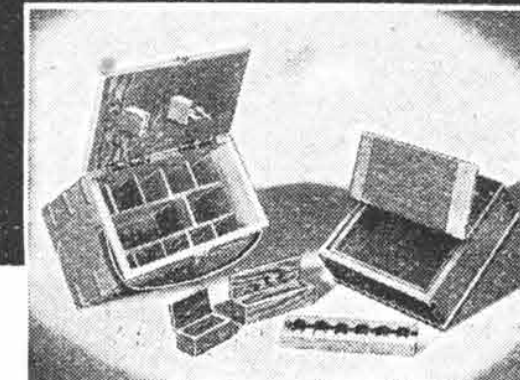
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After taking part in Saturday night's big raid on Bremen a four-engined Stirling bomber landed at its base early yesterday with only its two port engines running, its rear gunner dead, its wireless operator wounded, and all its electrical apparatus and radio out of action.

But, in addition to dropping its bombs on the target, it had shot down three out of five night-fighters which had attacked it.

While on the return journey over the Dutch-German border it was first attacked by two twin-engined night-fighters. It was here that the rear gunner was killed, the wireless operator wounded, the radio and electrical equipment destroyed and one of the two starboard engines put out of action, but one of the night-fighters was shot down by a burst of fire from the Stirling's mid-upper turret.

### SCRAMBLE TO TURRET

Over the Dutch coast two Me. 109s attacked. The front gunner, who was giving first aid to the wireless operator, dashed to his guns and opened fire while hanging half in and half out of the turret.

The navigator held his legs to steady the gunner, who succeeded in shooting both enemy 'planes into the sea.

A few minutes later another Me. 109 attacked, but was driven off. By this time the machine was temporarily out of control and diving towards the sea. The pilot managed to pull out of a dive a few feet above the waves, but the tail of the 'plane hit the water.

He managed to keep the 'plane going and gradually regained height.

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**HERCULES**  
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