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CONTENTS GAUGE
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CONTENTS GAUGE

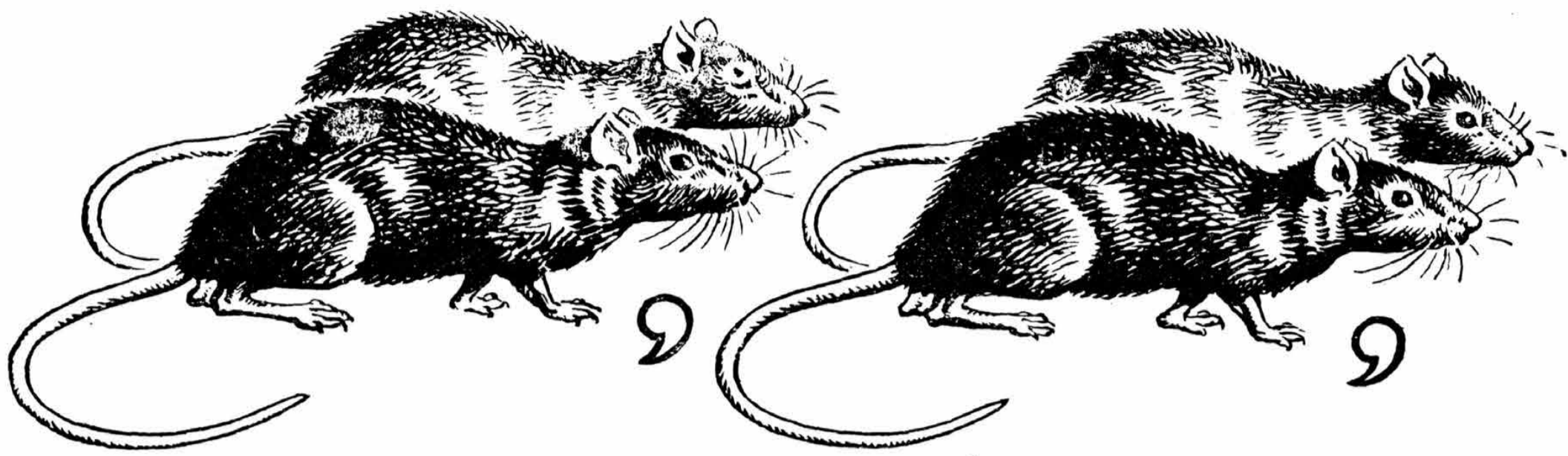




Bristol Beaufort

torpedo bombers destroyed three enemy ships, including a destroyer and two merchant vessels, in one attack in the Mediterranean. One of the pilots reported that they heard a terrific explosion and saw a merchant ship had broken in two, the bows and stern drifting about a hundred yards apart. Day and night "Bristol" Beaufort torpedo bombers continue to press home their attacks on the enemy over the seven seas.

THE BRISTOL AEROPLANE COMPANY LIMITED.

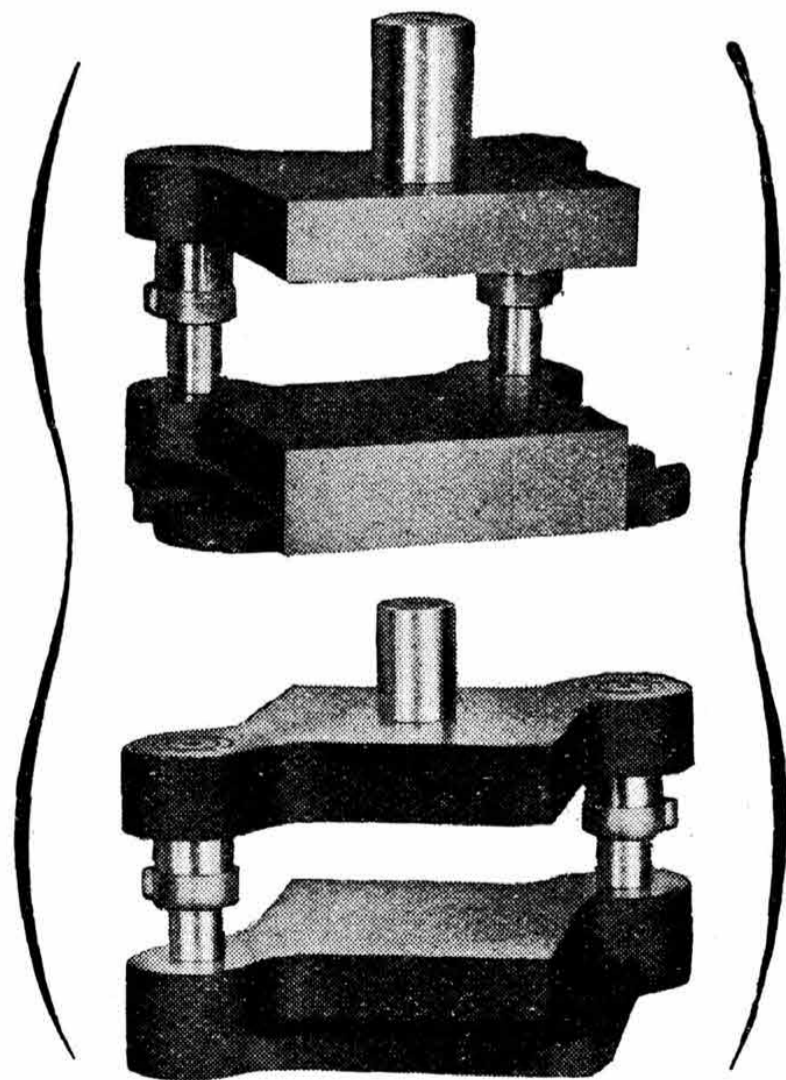


as big as 




in the Quar-ter-mas-ter's Stores

is the song that usually reminds us of cheese, rifles and blankets. But it can also refer to something much more closely connected with you, an engineer. In *our* Stores (not presided over by a Quartermaster!) is the Die Set you want when you ring us up and say: "I want a Die Set, size 'X', giving 'Y' ins. Daylight, shank $\frac{3}{8}$ ins. diameter and $1\frac{1}{2}$ ins. long and 'Z' stroke." Of course you fill in the X's, Y's and Z's, etc., from your knowledge of your own requirements, but apart from that you have nothing further to do. And you *will* have a Die Set which will not shiver, because its bushes and pillars are precision made. A Die Set for which you can replace either half should one get damaged. A Die Set which makes changing the tools on the Press simple because you merely take off the complete unit and put on another. A Die Set that will enable you to get your toolmakers back to their skilled job of tool-making. These are only some of the reasons why you should get your Die Sets from the shelf of:



DESOUTTER DIE-SETS

Bespoke or 
Ready-made

Put them back into CIRCULATION



NOT a rail wagon in the Nation's transport system is in private control—all are pooled for the common effort. That's only one of the useful things achieved to solve the vast problem of war transport. But how much use is it if the wagons waste precious hours standing idle in private bays and sidings? It is happening at this very moment in a thousand places—a great total of wasted hours. Does it happen—is it happening—to the wagons and lorries the Nation loans to you? Ten minutes saving please from every hour of standstill time. Will you make it?

*You know your own problems best. Tackle them in your own way—
But tackle them now. Plan, encourage ideas, improvise if needs be.*

Here's a starting-off agenda :

- | | |
|--------------------------------|-------------------------------------|
| 1 CHECKING OFFICE ARRANGEMENTS | 2 LABOUR SAVING EQUIPMENT |
| 3 BLACK-OUT WORKING | 4 OPINIONS OF "MEN WHO DO THE WORK" |

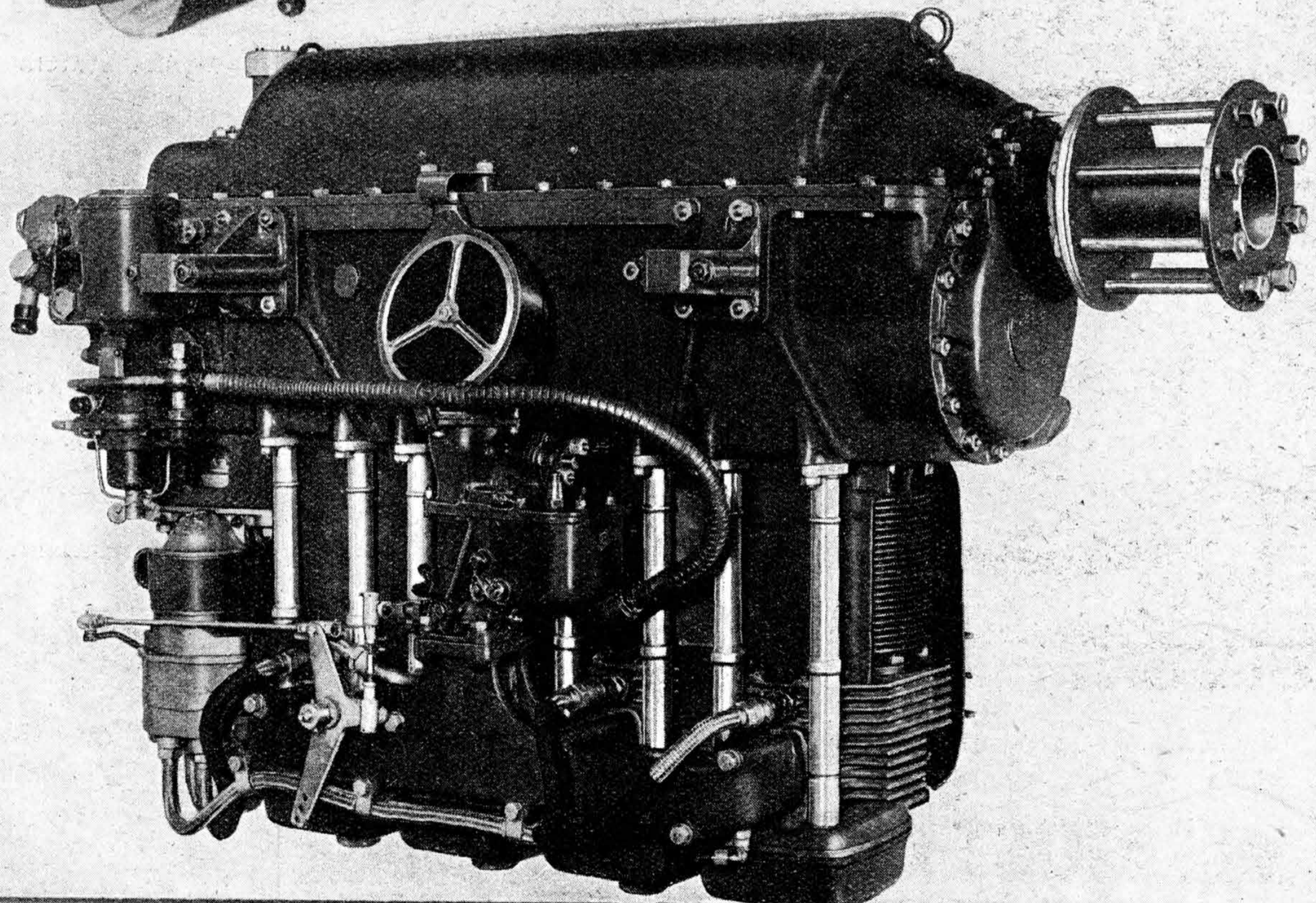
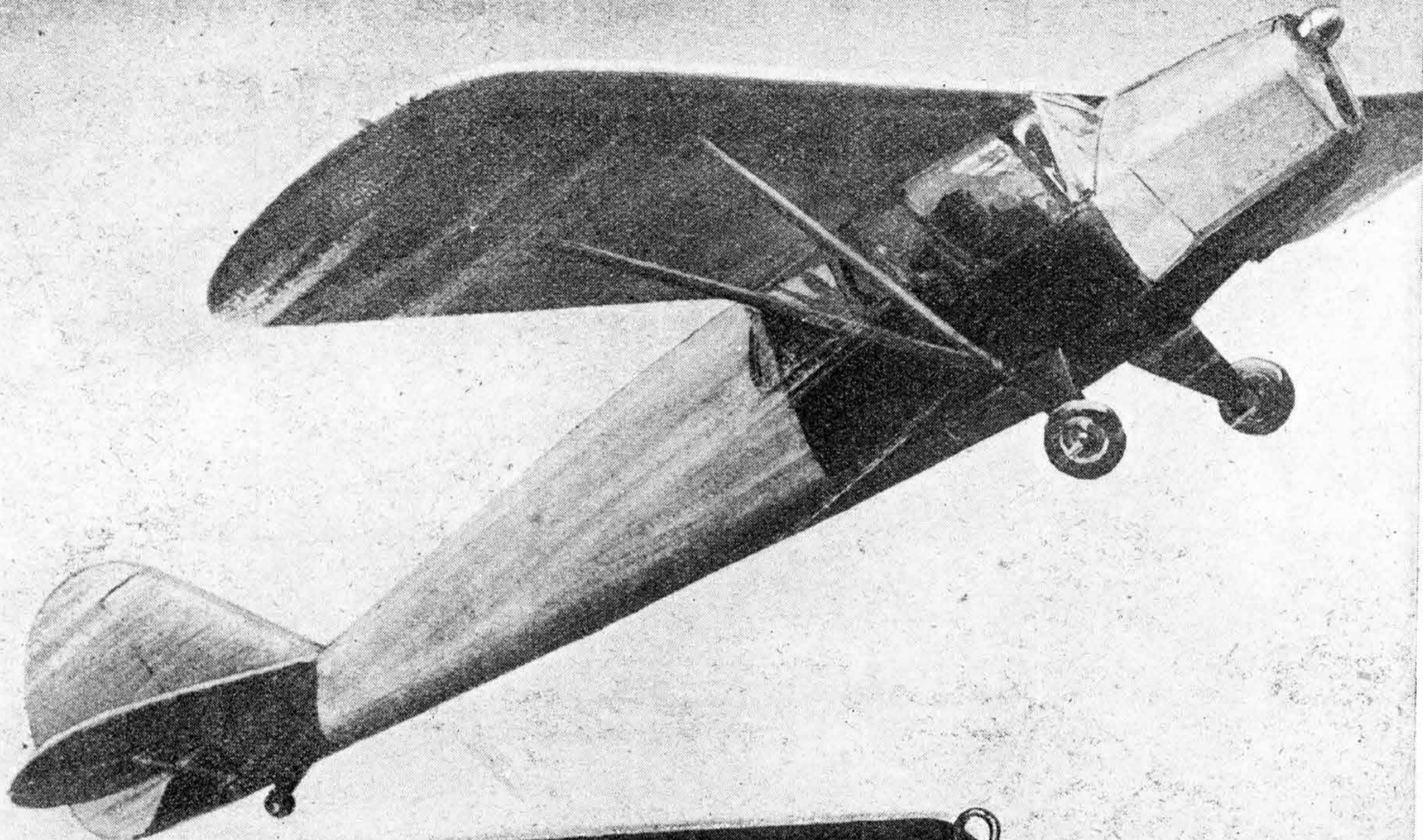
WE MUST GET AN EVEN **Q**UICKER

TURNROUND

Ministry of War Transport

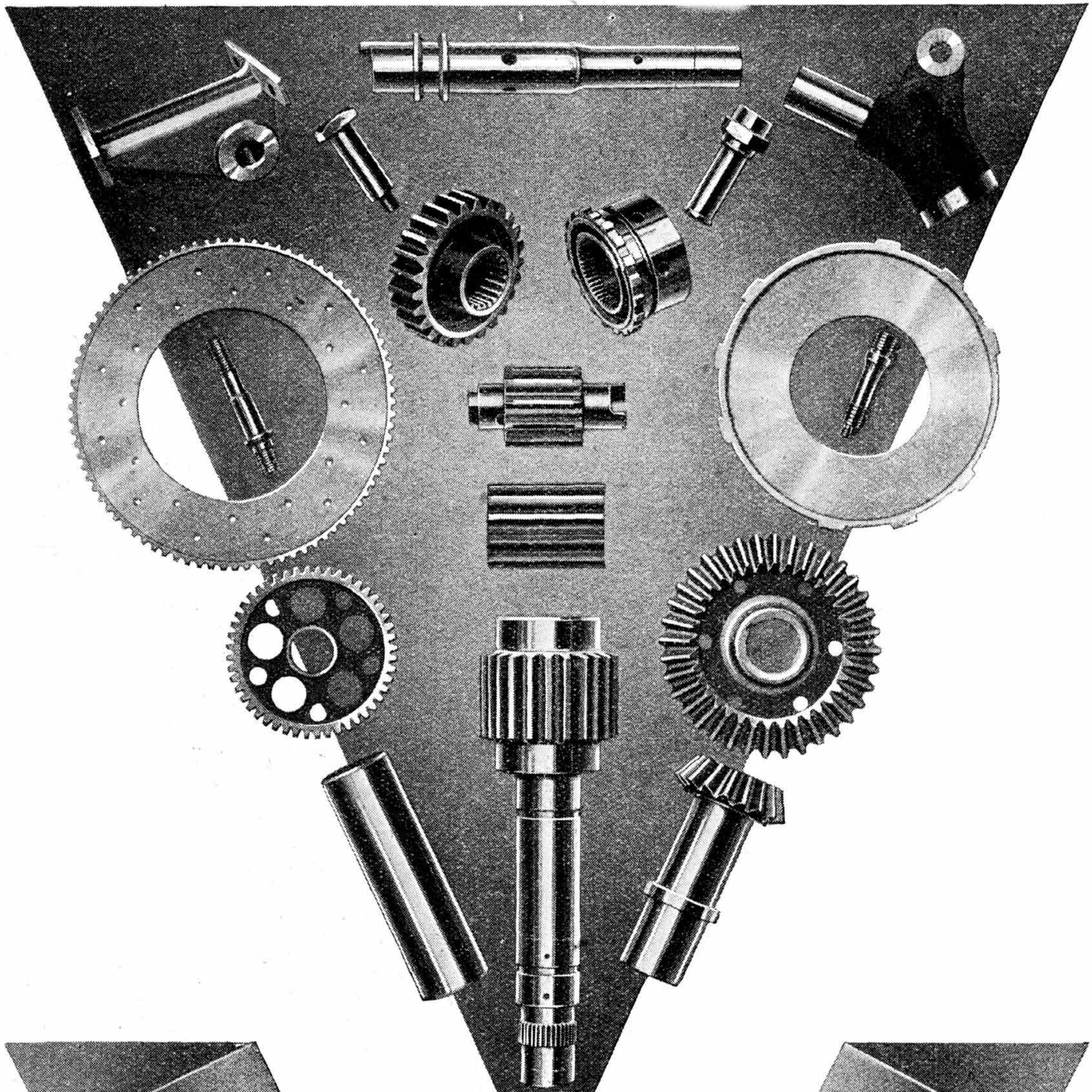


For Improved Take-off



CIRRUS

PRECISION ENGINEERING



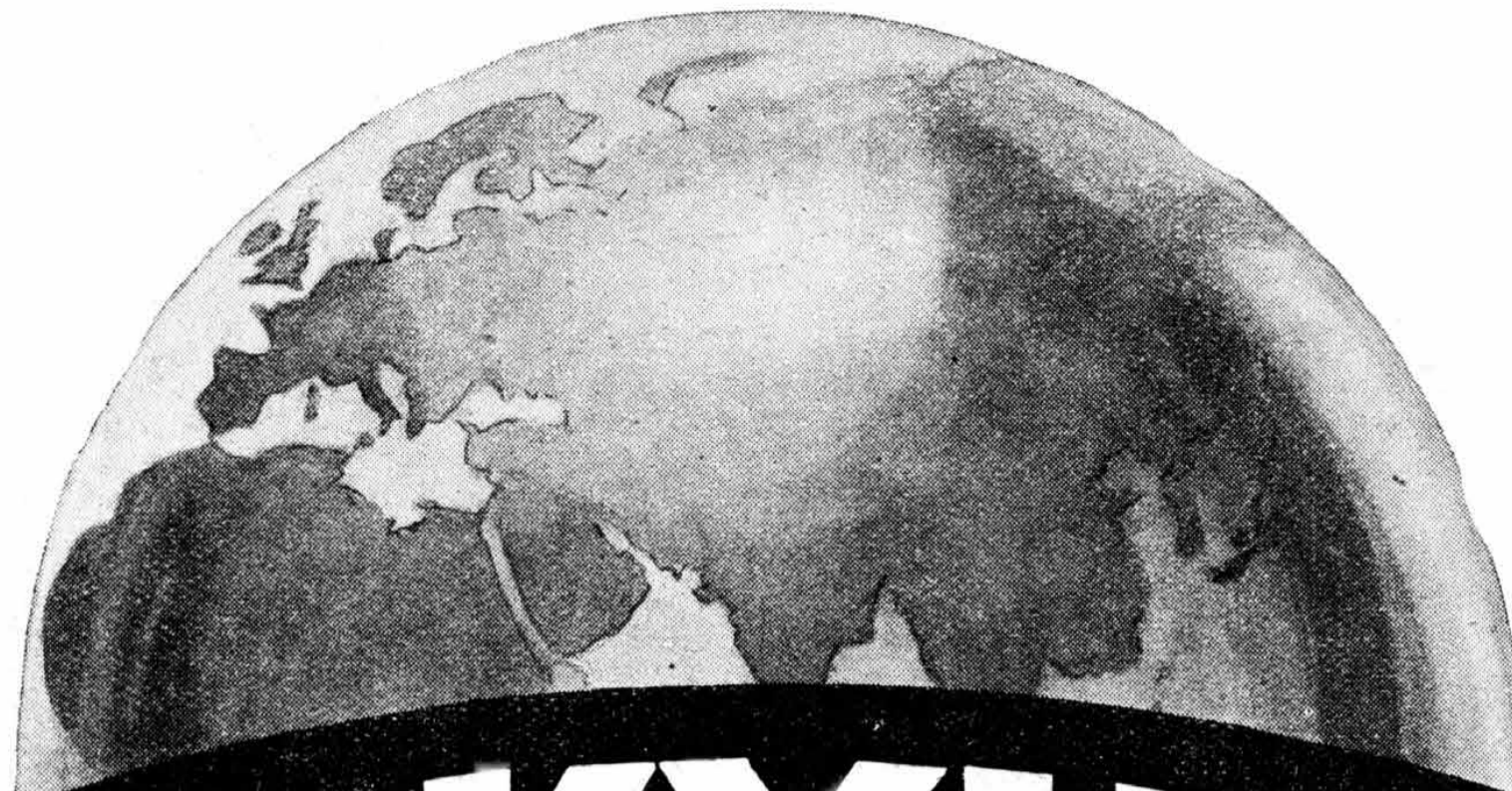
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FORMERLY PATTISON & HOBURN LTD

Precision Engineers

CASH'S LANE

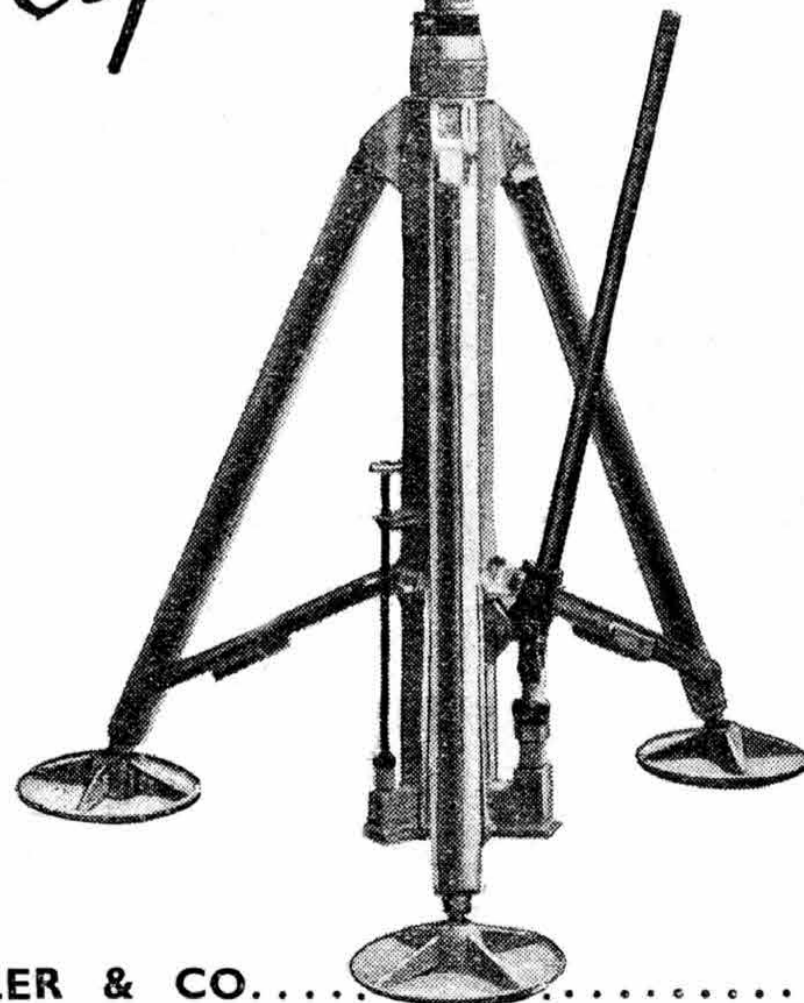
COVENTRY



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HYDRAULIC AIRCRAFT SERVICING EQUIPMENT.

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OF SUPPLY

NON-FERROUS METALS are URGENTLY NEEDED

Upon them largely depend the accuracy, deadliness and efficiency of Britain's instruments of war.

Practically all of them have to be imported across thousands of miles of dangerous seas, making heavy demands on shipping space.

Make a clean sweep of your unwanted COPPER, ZINC, LEAD, PEWTER, WHITE METAL BRASS & BRONZE, ALUMINIUM SCRAP

The need for vast and increasing quantities of these metals must be met by a national search for everything made from them which is broken or serving no useful purpose.

WHAT TO SEARCH FOR

Here is a list of some of the important non-ferrous metal articles, parts and equipment likely to be found on your premises. Use it as a guide to your search for everything you can spare.

COPPER—cable, electrical parts and fittings, sheathing, tube, turnings, wire.

ZINC—sheet, turnings.

LEAD—covered cable, pipe, sheet, solder.

WHITE METAL—anti-friction metal, plumbers' jointings, solder waste.

BRASS—pipe, sheet, tube, turnings.

BRONZE—bearings, bushes, cocks, couplings, crown wheels, junction boxes, unions, valves.

ALUMINIUM SCRAP (and its alloys)—pipe, sheet, castings, tube, turnings.

HOW TO DISPOSE OF IT

- 1 Sell your non-ferrous scrap to a Merchant.
- 2 Or hand it in to a Local Authority Depot.
- 3 **SPECIAL COLLECTIONS** of amounts over **ONE TON** may be obtained by getting in touch with the nearest Demolition and Recovery Officer. If you don't know his name, write to The Ministry of Works & Planning, Lambeth Bridge House, London, S.E.1.

NOTE: Under the provisions of the Scrap Metal (No. 2) Order, 1942, if you are in possession of more than 3 tons of Scrap Metal, it is now an offence not to disclose the fact to The Ministry of Works & Planning, Lambeth Bridge House, London, S.E.1.

WANTED! INDUSTRIAL SALVAGE STEWARDS

Salvage is of such great and increasing importance that it should be made the personal responsibility of one particular individual in the various departments of every organisation. Appoint your own Industrial Salvage Stewards. Put them in sole charge of an intensive drive for

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THE HANDS OF THE CRAFTSMAN NEED THE PRODUCTS OF THE SPECIALIST

**"THE LINREAD"
STRAIGHT BUTT JOINTED
TUBULAR RIVET**

(Approved under A.M. Serial No. 2294)

Tubular rivets and distance pieces by Linread are products of the specialist—the result of years of skill and experience by the biggest tubular rivet manufacturers in the country. No head splitting problems, less stretching when belling, and—no delivery hold-ups! Only the best is good enough for the work you are doing. Linread—specialists in rivets—offer you the best where split tubular rivets are concerned. Made to your specification, in any length, diameter or gauge.

*Approved by the Air Ministry as an alternative to
AGS. 501/D.*

Linread

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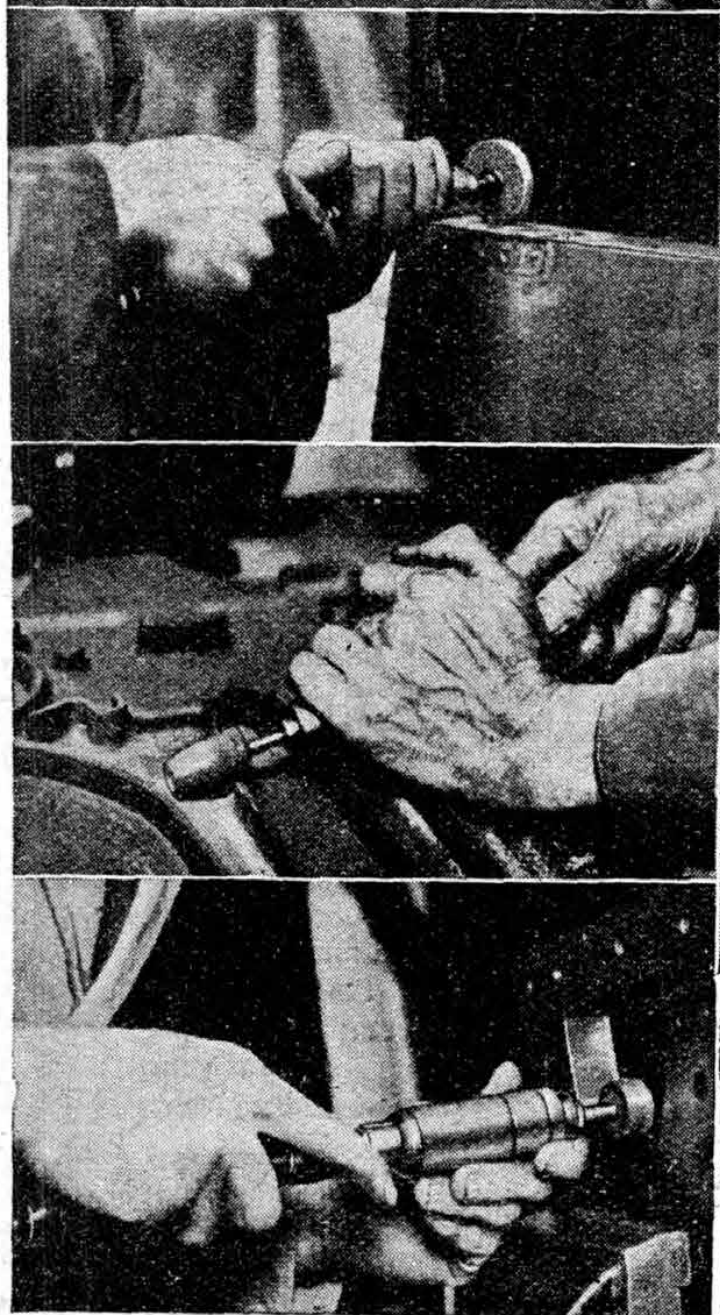
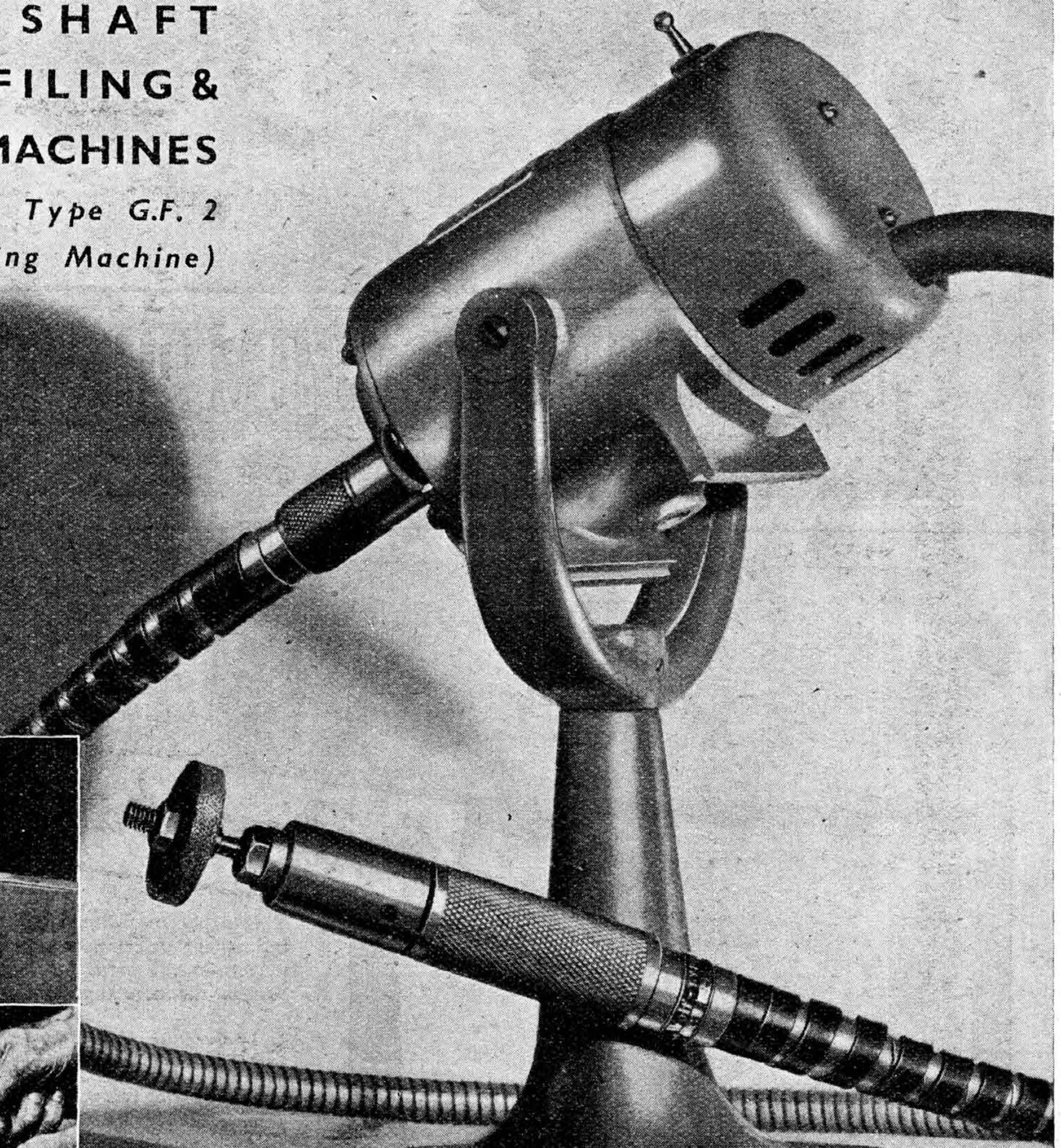
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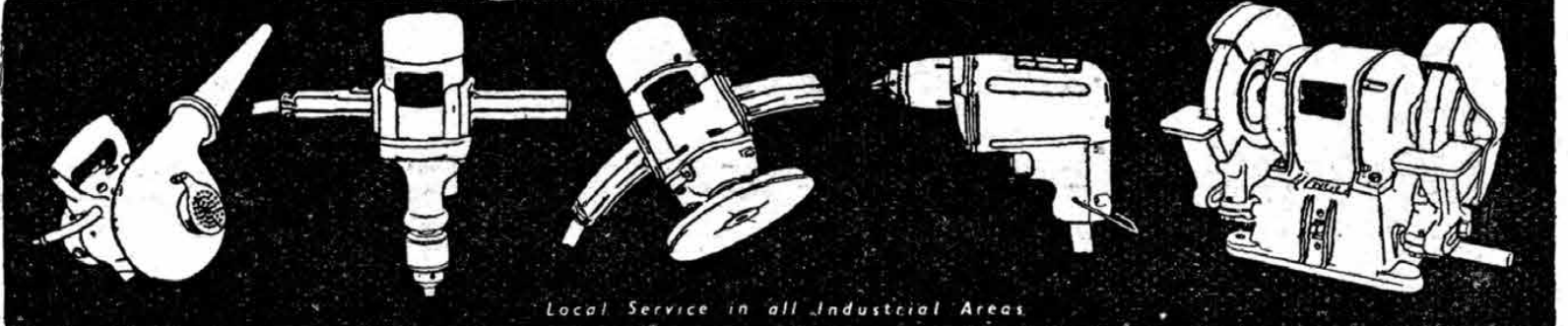
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PRESTCOLD REFRIGERATION

for Research and Production

The highly specialised equipment being produced by the Industrial Refrigeration division of the Pressed Steel Co. Ltd. is contributing more and more to the nation's war needs. Some of the more important uses of this new equipment are:

- Temperature control and air conditioning of gauge and tool rooms. Temperature control of jig boring rooms.
- Extreme low temperature refrigeration (-65°C) for shrink fits (Prov. Patent No. 3889/40).
- Low temperature test rooms and cabinets for engines, instruments and materials to simulate stratospheric conditions.
- Oil cooling—simple enclosed circuit oil coolers for heat treatment shops.
- The delaying of the age hardening of Duralumin sheet strip and rivets (Patent No. 531,681) which holds heat treated material ductile for days.
- All classes of commercial refrigeration equipment.

The application of Prestcold refrigeration equipment to your particular problems is worth investigating. The unequalled metallurgical experience, the scientific research, and the enormous resources of the Pressed Steel Company are at your service. Consultations and quotations will be gladly given:

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REFRIGERATION IN ALL ITS APPLICATIONS



PEDAL PUSHING TO ALTITUDE...

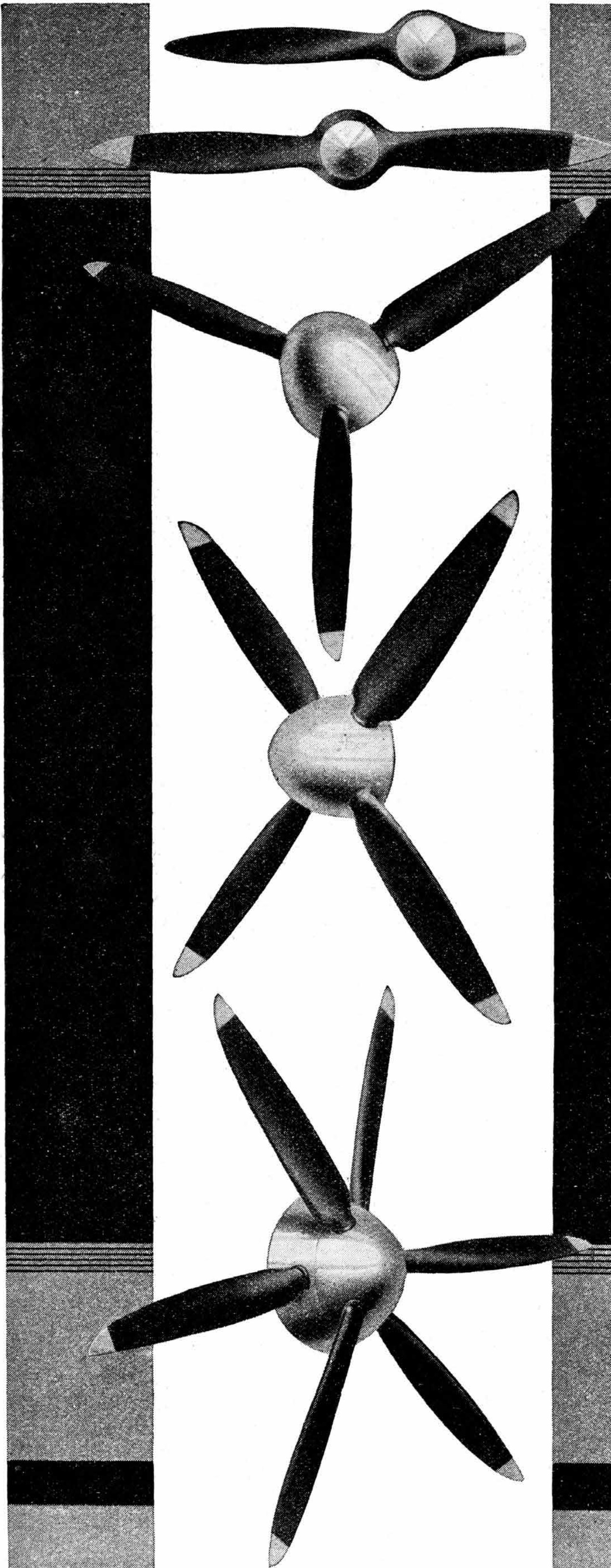
• Keynote to air mastery — high - altitude flying — forces the stratosphere pilot to prepare by breathing pure oxygen while riding a stationary bike, to avert the "bends." Thus have pilots of Republic Aviation's P-47 Thunderbolt become pedal - pushers and *the world's highest fliers.* Republic Aviation Corp., Farmingdale, N.Y., U.S.A.—

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Contractors to the
U.S. Government
and other Nations.



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We design and make

WEYBRIDGE

A I R S C R E W

BLADES

for them all

THE AIRSCREW COMPANY LIMITED

nearest cathedral city, dropped what it could and then ran for home like a small boy after ringing a house bell.

Within the Luftwaffe there can be no doubts. The average pilot understands only too well that he dare venture no great distance inland in these days. Canterbury is only a few miles from the coast and not more than 50 miles from bomber bases in France. He may not have been allowed to know that the raiding force lost about 20 per cent. of its strength, but he is impressed by now with the danger of operations over England and he knows that all the Luftwaffe has been able to do during recent months is to make nuisance raids. If the Canterbury raid is represented to him as a reply to the Milan raid, the result can hardly be to raise his spirits and persuade him of German superiority.

Germany may or may not know how to impress Germans. Her judgment as to how she appears to other nations is demonstrably weak. Common prudence should have restrained her from flattering the R.A.F. by imitation unless the imitation could have been better than the real thing. Italian shrewdness will probably distinguish the flattery and let it feed the national loathing of the boastful Hun.

The U.S. Aeronautical Mission

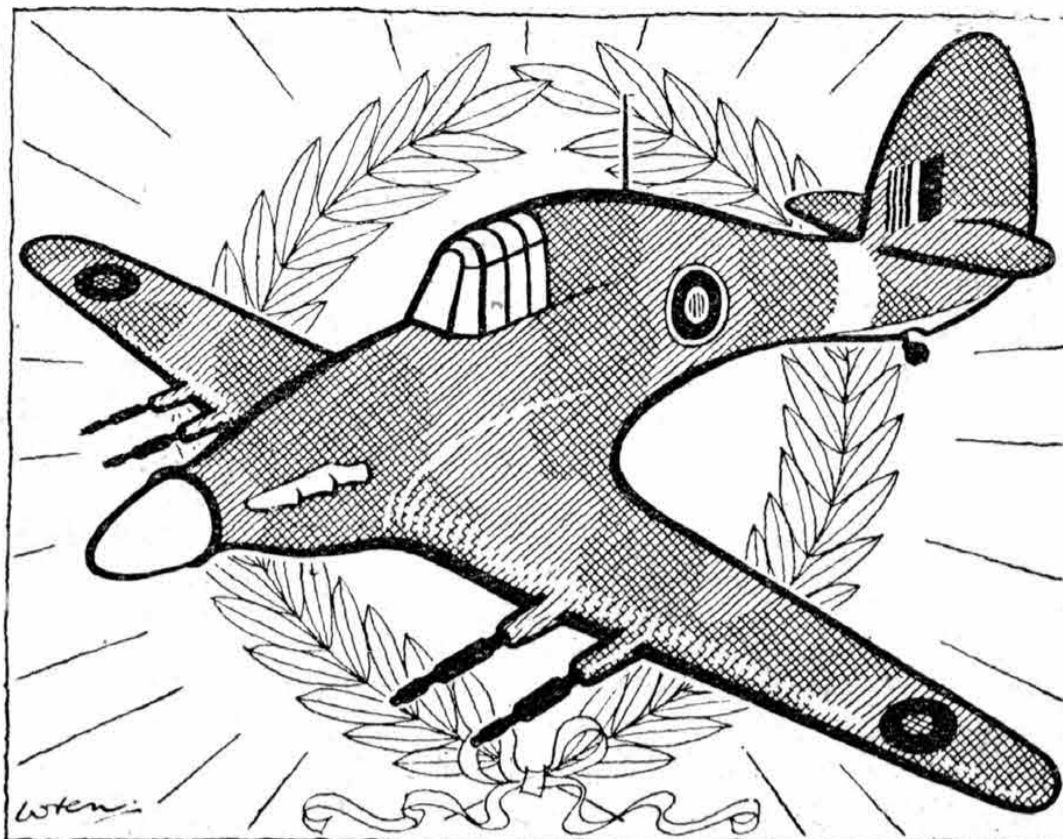
DURING THE PAST WEEK an American Aeronautical Production Mission, led by Mr. T. P. Wright, has been touring Great Britain inspecting aircraft and factory methods throughout the country. The members composing the Mission were announced in last week's issue of THE AEROPLANE.

The Mission was conducted on its tour by Sir Charles Bruce-Gardner, Sir Frank Spriggs and Mr. E. C. Bowyer on behalf of the Society of British Aircraft Constructors.

At a Conference in London on October 31, Mr. T. P. Wright said that six weeks previously a British Aircraft Mission had arrived in the U.S.A. The American Mission had left Washington for Great Britain three weeks later.

Mr. Wright said that the things which had impressed the American Mission were the dispersal of productive capacity to prevent major damage in the future, the moral and the intensive work of the workers, the number of women doing fine work, the flexibility of the factories to incorporate modifications in aircraft as dictated in action, the excellence of the material control, and the fine spirit which existed between workers and managements. There had been the freest exchange of information and much that they had seen must remain secret. Mr. Wright said he was impressed by the technical development going on and felt that the visit should be of the greatest value in improving the standard of Allied

ODDENTIFICATION—LXXXIV



Some day when the warrior wins his reward
And laurels lie thick on the newly-made lord
When medals for soldiers and airmen and sailors
Clink gaily on civvies just drawn from the tailor's
Will someone remember the days of our pain
And trot out a garland for the great Hurricane?

aircraft generally by such a complete interchange of ideas.

Mr. P. G. Johnson, of the Boeing Company, emphasised that getting to know each other on opposite sides of the Atlantic meant that the joint effort could go forward in the fullest spirit of co-operation. He was interested that the average of 40 per cent. women workers in British Aircraft Factories was approximately twice that of the American standard.

Mr. C. Carlton Ward, Jr., of the Fairchild Corporation, said that the British had two or three years' start in experience of war-time conditions and so there was much for America to learn. He had never felt he was in a strange country since arriving. The long hours worked by the women were phenomenal and a tribute to British staying power.

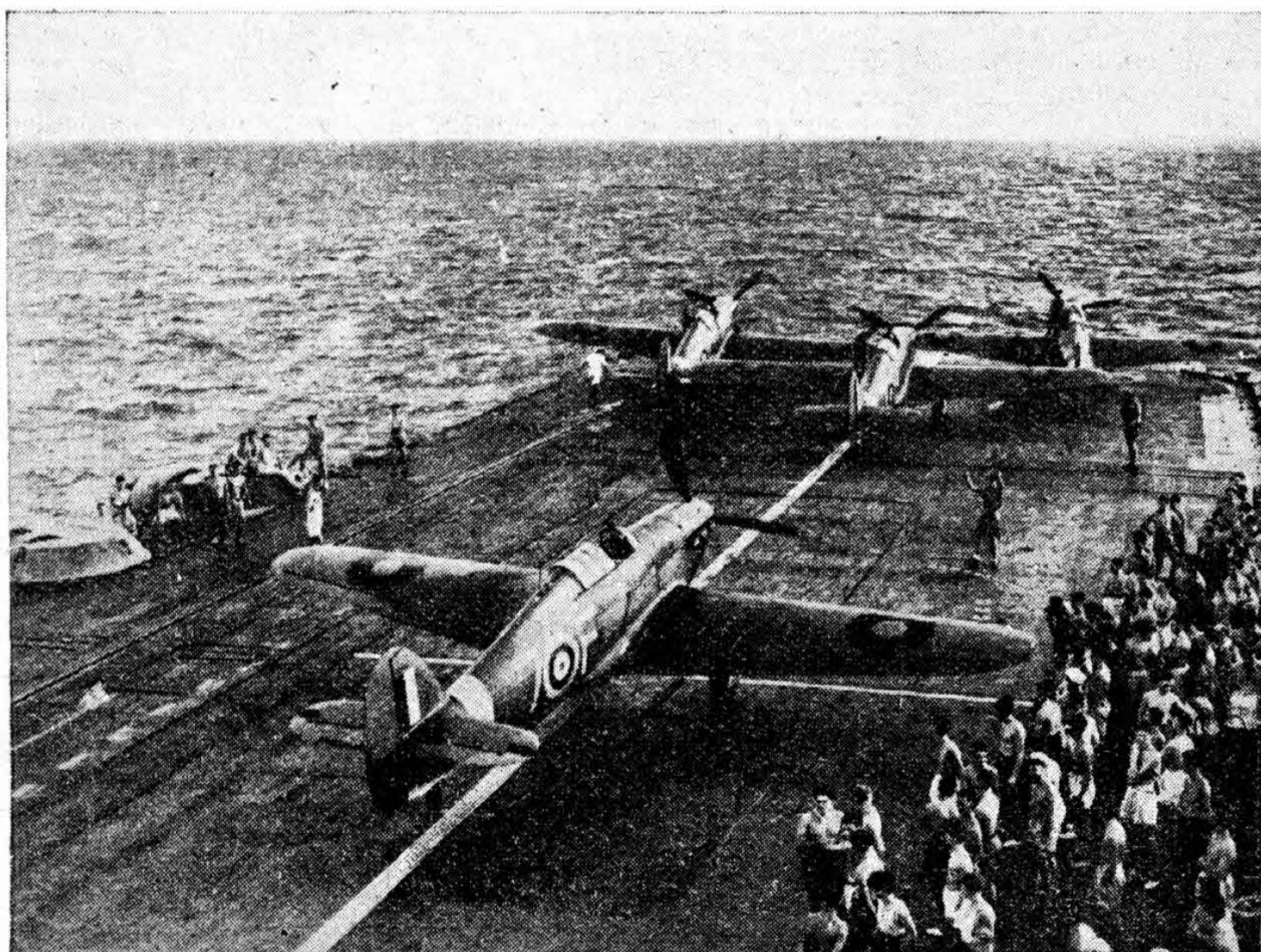
Great Britain and the U.S.A. had approached the tactical and strategic problems from different aspects and the jobs had dovetailed beautifully, each supplying qualities which the other lacked. Both were great engineering nations, and the combination must be a formidable picture for our enemies.

In answer to questions, Members of the Mission said that the average of 20 per cent. women labour in U.S. Aircraft factories was being increased by about 1 per cent. a week, and might reach as high as even 70 per cent. The two Nations were working towards standardisation of detail in aircraft used by the R.A.F. and the U.S.

A number of suggestions had been made in which improvements might be possible in Great Britain, especially improvement in design for production and the use of conveyor systems where possible in such a widely dispersed industry. The U.S.A. could learn from Great Britain much on the subject of metal control. They were impressed by the Mosquito and were making two or three transports and a large number of trainers of wood. But the large-scale use of wood in the U.S.A. was not likely because of the provision for aluminium supply and fabrication.

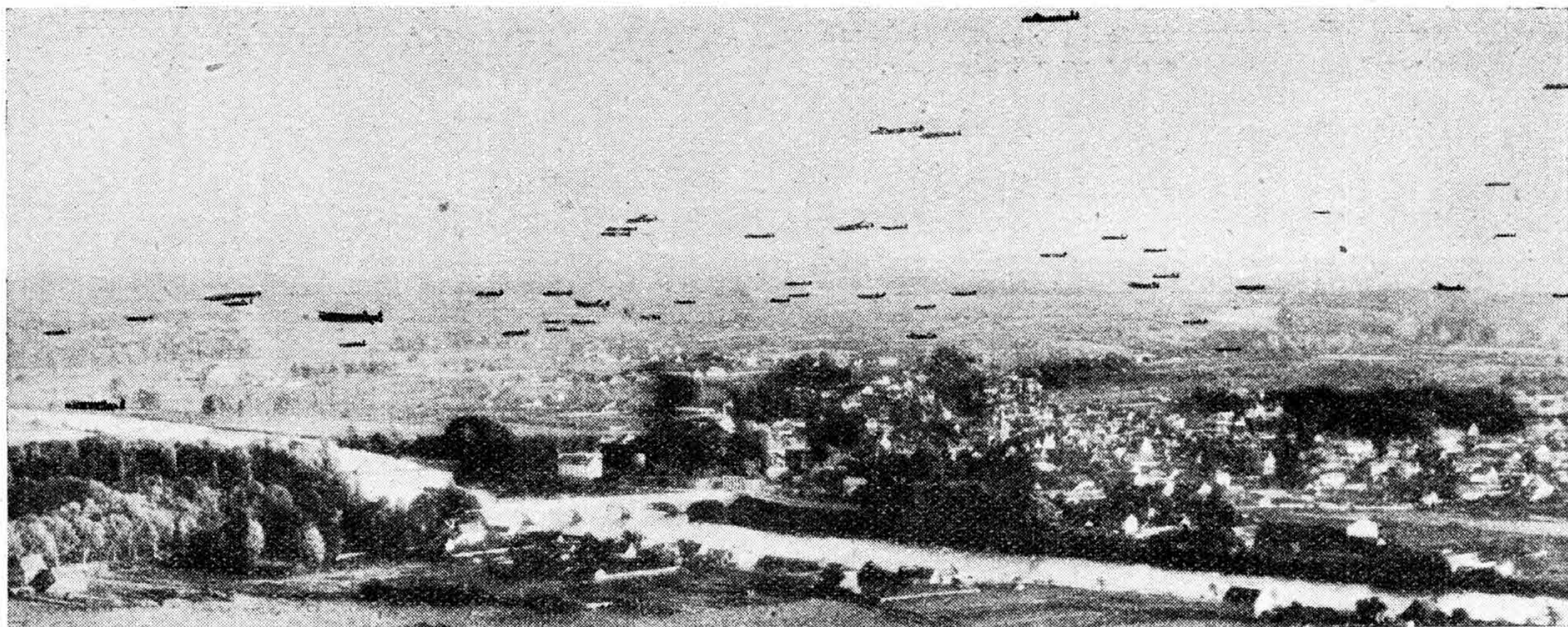
Col. Llewellyn stated at this point that the Canadian-built version of the D.H. Mosquito had Rolls - Royce - Packard Merlin motors built in the U.S.A. and a Canadian-built air frame.

The U.S. Mission considered that in general the tempo of production was superior in Great Britain and attributed it first, to the fact that the War was nearer and, secondly, that no bonus systems or piece work rates were used in America.



BLOCKADE BEATERS.—Hawker Sea Hurricanes on board a British aircraft carrier. Unlike the Hurricanes launched by catapult from merchant vessels, these have a chance of alighting on the carrier after action, and are fitted with deck arrester hooks for that purpose.

PLEASE SAVE PAPER



BEYOND FIGHTER ESCORT.—Forty-eight Lancasters over the town of Montrichard on the river Cher on their way to attack the Schneider works at le Creusot, 300 miles inland in Occupied France, on October 17 and photographed from another Lancaster. The success of this raid made by 94 Lancasters in daylight far beyond the range of fighter escort with the loss of one bomber only is a proof that the Lancaster, far from being suitable only for heavy night bombing, can, both escape the enemy defences and bomb accurately with its enormous hitting power. The maximum bomb load is now given as 18,000 lb. A reconnaissance photograph of le Creusot showing bomb damage is given on page 531.

P. E. G. Sayer

WE HAVE received the following appreciation of P. E. G. Sayer, who was killed in a flying accident recently.

Group Captain P. W. S. Bulman writes:—

"We regret to announce the loss of Mr. P. E. G. Sayer, of Gloster Aircraft Limited, as the result of a flying accident on October 21. He appears to have been involved in a collision with another aircraft whilst making a test flight over the sea.

"Jerry Sayer, as he was affectionately known by his many friends in the Industry and the Royal Air Force, had been Chief Test Pilot to Gloster Aircraft, Ltd., for the past six years. He was a brilliant test and demonstration pilot and played no small part in the development of the many successful Hawker and Gloster fighter aircraft with which the Royal Air Force has been equipped. For his valuable part in the development of certain fighter aircraft in the present War, he was recently given the O.B.E., of which he was justly proud.

"He was a superb pilot, with a mastery, dash and judgment which made his flying at Hendon, Hatfield and many another flying meeting long remembered. Jerry Sayer was one of the World's white men. He radiated warm kindness and a spirit of integrity. Although often impelled by his high sense of duty to speak his mind, he was incapable of an unkind word or thought. His cheerful outlook spread from his happy home life and was an inspiration to all who were fortunate enough to be his friends.

"Our sympathy goes out to his wife and daughter June, to his parents, and to the Gloster and Hawker-Siddeley Companies in their loss."

N.R.M.T. writes:—

"So Jerry has gone! When I heard the news my mind flew back over the years to schooldays and a chubby, cheerful boy with a wide grin, named P. E. G. Sayer, but always known as Jerry.

"On going to Brooklands in 1931 to take flying lessons I again saw a good deal of Jerry. I flew with him several times in those days and even then his flying was quite extraordinary. Well do I remember his brilliant handling of the Fury in the old Brooklands days, and later his marvellous exhibitions on the Gloster at a Hatfield show about 1937.

"Jerry Sayer was always a most lovable personality. He became one of the great test pilots of his time, but never lost his modesty and good nature, and his personal charm endeared him to everyone. Jerry has flown on to join those other grand men who have done so much to further the science of Aviation."

Engineering Cadetships

TO MEET the demand for more and more Technical Officers in each of the three fighting Services, the Government has instituted an Engineering Cadetships Scheme.

Under this scheme boys between the ages of 16 and 19 who left school before October, 1942, with at least a School Certificate and a credit in Mathematics, General Science or Physics (in Scotland with a Senior Leaving Certificate or after satisfactorily completing four years of an approved Senior Leaving Certificate course with proficiency in Mathematics, Science or

Technical Subjects), can receive training at Technical Colleges until the age of 20, after which they will be commissioned in one of the Services as Technical Officers.

Fees are paid by the Government who also allows each Cadet a maintenance grant, if he has to live away from home, of £140 a year (in London £160) or, if he lives at home, £75 a year (in London £90).

Applications for Cadetships should be made to local Appointments Officers of the Ministry of Labour and National Service or to the Appointments Department, Sardinia Street, London, W.C.2.

Proof of the Bombing

FOR THOSE who look upon a vertical view of bomb damage as a conglomeration of grey and black masses, the exhibition of Royal Air Force photographs at Devonshire House, Piccadilly, will have little interest. Those who appreciate the conditions in which the pictures were taken, will find the exhibition most enlightening. There are examples of damage to places as far apart as the Western Desert and Rostock, as different as shipping in Tripoli Harbour and suburban houses in Cologne.

Comparisons "before and after" a raid on Cologne, show how devastating a 1,000-bomber raid can be. But they also show that, even in those views taken before the raid, one might easily mistake a building under construction, a plot of waste ground, or a diffused section of the photograph, for bomb damage. Few photographs show bomb craters, but the general disturbance created by 4,000 lb. of high explosive can easily be detected. The effectiveness of incendiary raids is borne out by gutted Rostock town. The Heinkel works situated nearby, may be seen with huge holes blasted in the shop-roofs by H.E.

But the most interesting photographs are the oblique ones taken at low level of the Renault Works, Paris. Taken so low that one can read the name above the entrance, these pictures show devastation without doubt. The tangled mass of machinery, torn roofs, collapsed walls and smashed vehicles tell a more vivid tale than words could convey.

The exhibition is a tribute to the photographic reconnaissance work of the Royal Air Force. It will be open, admission free, between 10 a.m. and 6 p.m. each week-day until Wednesday, November 11. Later it will tour the principal towns throughout the country.—R.M.

Aeroplanes in Caricature

SIXTY-FOUR of the "oddification" drawings which have appeared during the past two years in THE AEROPLANE are now brought together in a booklet prepared by Wren and published by Temple Press at 2s. net. With each caricature is given a picture of the aeroplane caricatured, a light verse which comments on the subject of the drawing and a paragraph on the identification parts of each aeroplane. This booklet, under the title of "Oddification," puts aircraft recognition into terms of humour and exaggeration. In that sense, as Wren remarks in his foreword, it has an educative value in that "it makes the customer smile" and therefore predisposes him "to listen to what you have to say." But non-spotters, too, will find a joy in these, sometimes caustic, flippancies.

The Bristol Hercules "Power Egg"

INFORMATION IS NOW AVAILABLE on the construction of the Bristol Hercules "power egg" which is fitted in the Avro Lancaster II and the Short Stirling I.

First exhibited, at the Paris Salon, in 1938, the Hercules standardised power plant had its layout and construction designed, by a specialist staff, to facilitate the installation of the motor in aircraft and to reduce the time during which an aeroplane is grounded for motor maintenance and replacement. Modifications have been made to the plant since then and the production "power egg" (illustrated) has the latest series of Hercules motor, with improved cowls, exhaust system, and air intake.

A conventional motor mounting structure is incorporated in the power plant, terminating beyond a fire-proof bulkhead in four, jig-located points for attachment to the airframe. This mounting is arranged to give accessibility to the carburetter, magnetos, and rear of motor should circumstances not permit the usual removal and replacement of the engine when maintenance and overhaul are necessary.

For night flying, flame damping exhaust tail pieces are fitted and the exhaust manifold is completely shrouded. Incorporated in the exhaust are two pipes, delivery and return, for heating the air used in ventilating the cabin.

The engine mounting structure, consisting of a mounting ring and eight mounting tubes, forms the basis of the power plant. Two mild steel pressings are welded together to form a hollow girder of rectangular section. To the inner circumference of this mounting ring are welded seven lobes, spaced out equally to take the seven extended crankcase bolts which fasten the motor to the mounting structure. Detachable distance pieces are placed on the crankcase bolts to keep the spacing between the motor and the ring uniform. Facing washers, which give the engine true surfaces against which to bed, are welded at every point of contact between the engine and the ring. More distance pieces are welded to the inside of the mounting ring to prevent the possibility of crushing by the engine.

To the rear face of the mounting ring are welded five support facing pieces. Distance tubes, through which pass the bolts securing the brackets for the tube structure of the engine mounting, are welded inside the mounting ring. Each of the five brackets is secured by six bolts, and together they form a pentagon on the rear of the mounting ring.

The two upper tubes of the structure finish, at their forward ends, in finger plates to embrace the lugs on the two top brackets of the pentagon. Welded together in pairs, the other six tubes are fastened to the mounting ring in similar ways. To avoid reaming the brackets after welding in position, expanding bushes are used. These are retained in the brackets by circlips and the bolts securing the brackets are themselves secured with split-pinned nuts.

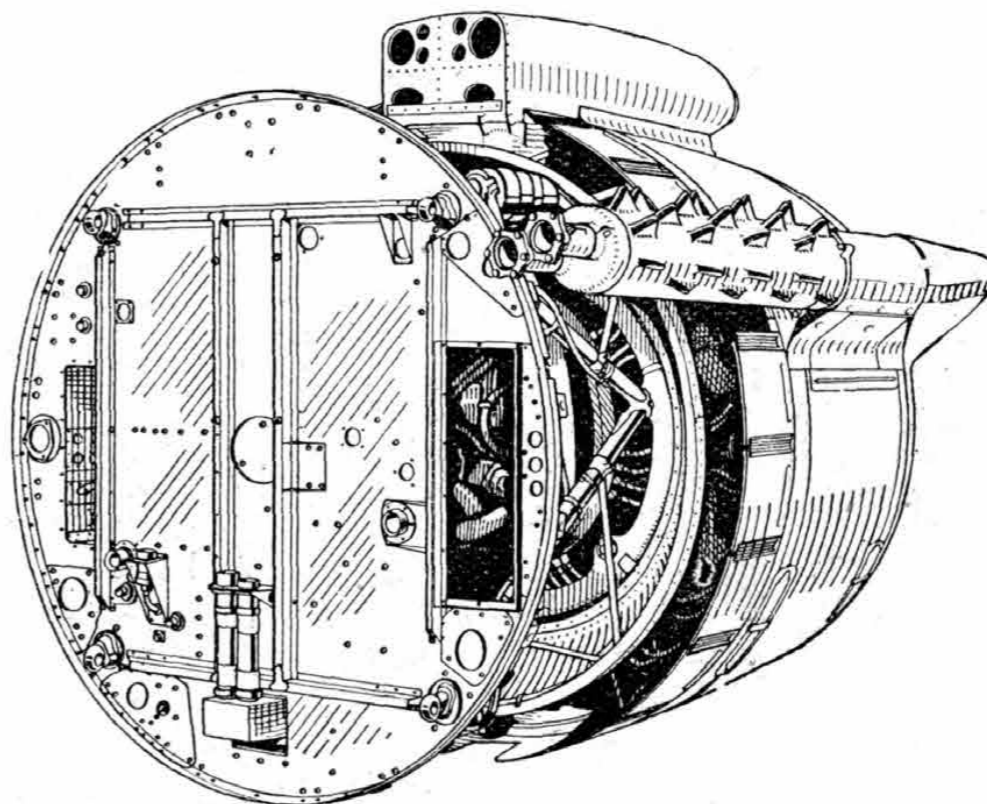
Brought together at the rear of the power plant the two top tubes of the mounting tube structure are welded together to provide, with the other three pairs of tubes, four jig-located lugs for attaching the power plant to an airframe. When assembled, this basic structure of the power plant is painted to prevent corrosion.

Immediately forward of the four lugs are welded four pressed steel plates of Y shape to which is attached rigidly a fireproof bulkhead of 20 s.w.g. stainless steel. This single sheet is strengthened at those points where pipe systems, electrical circuits, or controls pass through it, with various reinforcing plates, welded or bolted in position to ensure local rigidity. Further stiffening is provided by an L-section around the outer circumference of the bulkhead, the lip of which extends forward and is used as a support for the airframe manufacturers' nacelle fairings.

On the bulkhead, carried in standard positions to ensure the interchangeability of the power plants, are the union connections for the oil supply and return pipes, the fuel pipes, the oil tank vent, the primer, the boost gauge, the fire extinguisher system, and the cabin heater supply and return pipes. Each union connection of the standard equipment is of a different size to obviate incorrect connections. Electric junction boxes are carried on the bulkhead for the electric starter, ignition cut-out, fuel pressure transmitter and pyrometer cable. Standard positions are used for the connections of the Worth oil dilution system, and the thermometer and pressure gauge capillaries.

As hydraulic and pneumatic systems differ so much, no standard fittings or connections are provided. Instead, a panel is left open on the starboard side of the bulkhead. Airframe manufacturers make their own hydraulic and pneumatic accessories panel to fit the opening, to which they lead all the systems in their particular aircraft.

Mounted on the port side of the bulkhead, the engine control box has all the control rods from the cockpit connected to it. After passing through the box, the movements of the control rods are communicated to the carburetter, air intake,



PLUMBER'S DELIGHT.—This three-quarter rear view of the latest Bristol Hercules standardised power plant shows the fire-proof bulkhead which carries all the pipe line connections, control couplings and electric circuits.

two-speed blower and constant speed airscrew control through a series of control levers and tubes.

Fuel for the power plant is supplied through the union connection on the fire-proof bulkhead directly into the filter mounted on its forward face. From there it is passed through a flexible hose to the rear cover of the motor.

The oil cooler is connected through the union connection on the bulkhead to the carburetter oil bracket. This cooler is slung below the bottom fairing panel of the Hercules and is faired to reduce drag.

Every pipe in the power plant carries one or more coloured bands at both ends to indicate the system of which it is a part. The widths of these bands vary with the outside diameters of the pipes, which are all of different sizes to reduce the possibility of mistakes being made in connecting them.

Junction boxes for all the electrical equipment are mounted on the fire-proof bulkhead with the other connections. Provision is made in the main box for connections of the electric circuits of the cowling gill motor, fire extinguisher switches, tachometer, electric starter, and other variable items such as Rotol or other electric fully feathering, or constant speed airscrews, cowling gill position indicator and booster coil. When such items are not fitted, the ends of the connections in the junction boxes are blanked off with caps which screw on flanges in the boxes. All electric cables in the power plant are carried in flexible conduits with terminal blocks in which the contact sockets are embedded.

In addition to the electric starter mounted on the rear cover of the motor, hand turning gear is fitted. The electric motor for controlling the cooling gills is supported by a pressed-steel bracket, an aperture being left in the starboard cowl to give the requisite clearance for the drive to the gills.

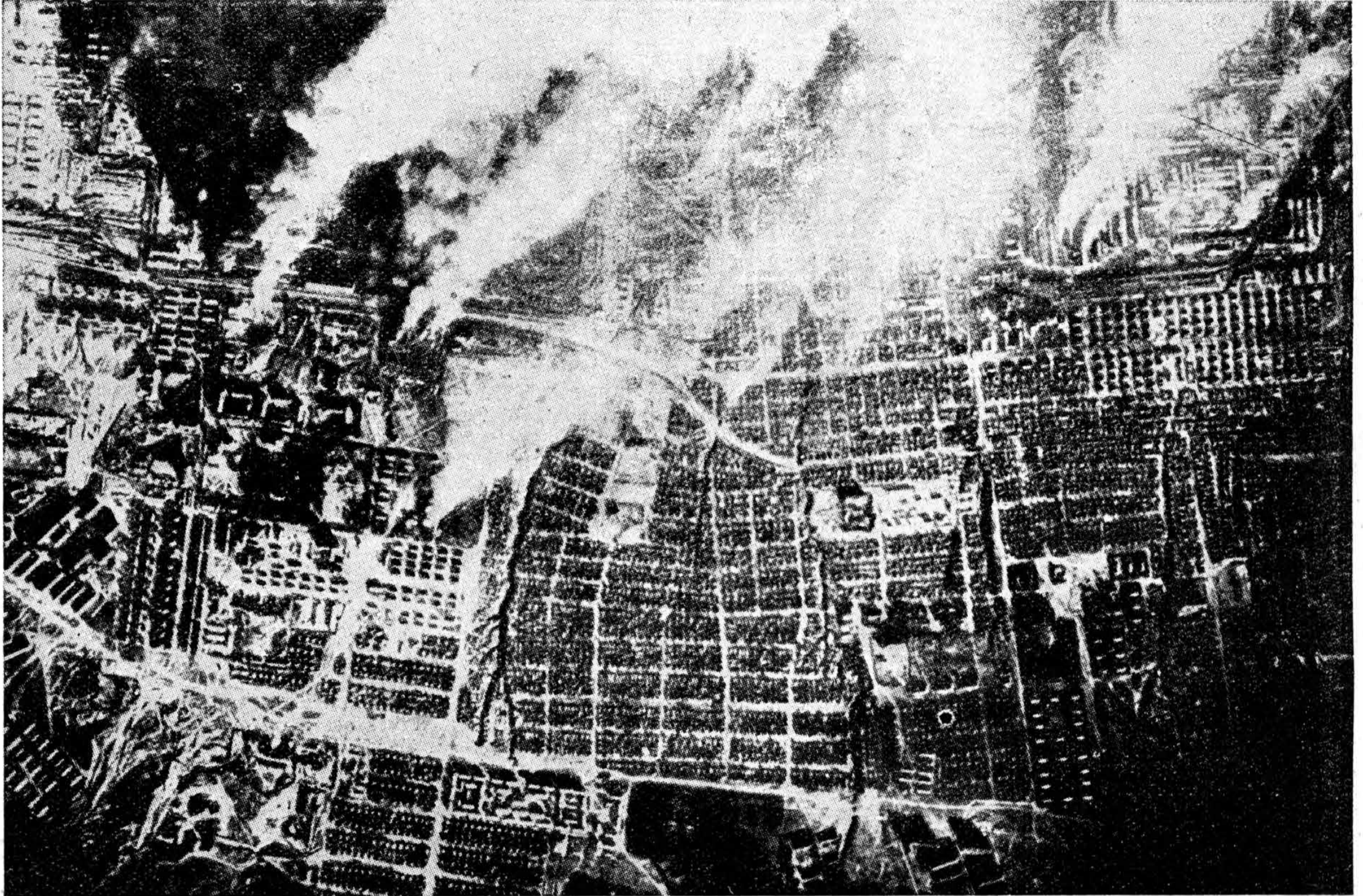
Immediately forward of the controllable gill ring, the power plant is faired off with four cowling panels. These are riveted together in pairs to form two cowl units, a port and a starboard. Two locating brackets on each cowl unit fit over the engine mounting ring, but each bracket has a rubber block cemented in place to prevent metal to metal contact with the mounting ring. The cowling is secured in position by two securing cables passing round the outer circumference of the power plant. Openings are left in the cowling for the oil pipes, the air intake control rod, the hydromatic airscrew feathering pipe and the return pipe for the cabin heating system.

These power plants can be installed or removed with or without the airscrew in position and with the tail of the aeroplane up or down. Slings gear for use with a derrick or mobile crane is provided in the Flight Tool Kit, and the power plant, without cowlings, is swung into position, and secured to the airframe with four mounting bolts, one at each airframe pick-up point of the engine mounting tube structure. When all the connections of the pipes, controls, and electric circuits have been satisfactorily made and the fuel systems and engine controls have been checked (little work in this connection should be necessary forward of the fireproof bulkhead as the controls are completely adjusted before the power plant is delivered), the fairings are placed in position on the nacelle and power plant, and the installation is complete.

For overhauls and maintenance work the whole power plant should normally be removed and replaced, so reducing the time during which any aeroplane is out of commission during rush work.

The 165th Week of

THE WAR IN THE AIR



ETERNAL CITY.—Damage to Stalingrad by artillery fire and bombs has not crushed the courage of its defenders, who are still holding out after a siege lasting more than nine weeks. This Axis photograph shows the shells of wrecked buildings.

LAND BATTLES in Egypt and before Stalingrad continue unabated and afford important evidence of the part that air forces can play in support of modern military operations. In Egypt the Allied Air Forces hold superiority, at Stalingrad the enemy has command of the air. The fact that more rapid progress is not being made by either side is an indication of the strength of modern defence in depth.

And yet, in Egypt at any rate, the superiority in the air is likely to prove decisive in the end. Rommel's supply lines are being hammered as they have never been hammered before—from Italy, all the way across the Mediterranean, right up to the front lines. Axis troops are subjected to constant air attack. Our men, who have suffered this from the enemy in the past, know just how wearing it can be.

Thus we can look on the position in Egypt with some confidence but no complacency. The chances of striking through the hard crust of the enemy's defence and thus shattering his forces appear to be relatively bright. Should a disorderly retreat begin, the strength of the Allied Air Forces can be used to full effect in harrying retreating columns down the desert coast road.

Two aims are before the Eighth Army. The first is to smash the enemy's armoured power and give him no time to recover. The second is to recapture the coastal aerodromes from which Allied fighters and bombers can begin again to win control of the Central Mediterranean. This time, if the Allied Forces can reach Benghazi they can hope to exert a far greater influence than ever before. Squadrons of Halifaxes, Liberators, Wellingtons, Baltimores, Beau-

ports, Beaufighters, Spitfires, Hurricanes and Kittyhawks can scour the Mediterranean between Benghazi and Malta and Rommel would find his supply line truly precarious.

One disappointment in this new campaign is that no effective air "tank buster" has been evolved. Certainly the true strategic purpose of Air Power is to attempt to smash as much as possible of the enemy's material before it reaches the battle front. We can look for increasing results in this direction in the development of raids such as those on Renault and Le Creusot.

Yet, tactically, the air cannot ignore the need to neutralise enemy fighting vehicles on the ground. So far the mobile land gun has proved the most effective anti-tank weapon, employed in much the same manner as were the bowmen at Poitiers, Crecy and Agincourt against the armoured knights and men-at-arms. And yet all the speed and versatility of air power could be used to still greater effect if it could be armed to smash the tanks.

At present no gun of light enough weight and high enough rate of fire has been evolved which could be used with really devastating effect from the air against the tank. The 37 mm. cannon is not big enough. The most effective solution does appear to lie in the Russian rocket bomb. Intensive development in this direction should produce a formidable weapon. A comparatively low forward velocity added to that of the aeroplane itself should provide the rocket bomb with accuracy and penetration. The need for the air "tank buster" is greater than it ever was. And until we have it we cannot exploit true air superiority to its full advantage.

The Eighth Army Advances

ALL THE GROUND won by the Eighth Army in the first week of the Allied offensive in Egypt was held. The enemy violently opposed each advance, and strove by swift and determined counter-attacks to recover every position lost, but they failed to stem General Montgomery's methodical penetration of their deep and well-prepared defences.

Official information gave no clue to the extent of the progress, or of the sector of the El Alamein front at which the main thrust was made. A German report gave a hint that at the week-end a new drive was imminent in the Northern, or coastal, sector.

Headquarters in Cairo released the barest details about the fighting on the ground, doubtless fearing another charge of undue optimism if things went wrong, or a charge of undue pessimism if they went well. Fortunately, similar restraint was not applied to the fighting in the air, and communiqués and other sources gave a full and satisfying picture of the work of the Allied Air Forces in what were clearly some of the biggest air operations of the War.

Fighting started with the Allied Forces holding a marked air superiority. The enemy speedily reinforced the Luftwaffe and the Regia Aeronautica, but neither in numbers nor in quality could they offer a serious challenge. No Focke-Wulf Fw 190s came to the aid of the Me 109, now compelled to face its old and victorious adversary, the Spitfire, over the desert. A few squadrons of Junkers Ju 87s were brought across the Mediterranean, but they could do little to mitigate the German Africa Corps' plight.

Junkers Ju 52s rushed more troops to the scene of fighting and fighters were put on guard over the vital coastal roads where Allied Air Forces found many attractive targets. Once or twice heavily escorted Stukas broke through the Eighth Army's fighter screen and bombed their objectives, but they parted from their bombs while still many thousands of feet up, and so confessed their incompetence in the face of resolute opposition from the ground. When intercepted they were invariably scattered.

By contrast, Allied light, medium and heavy bombers flew

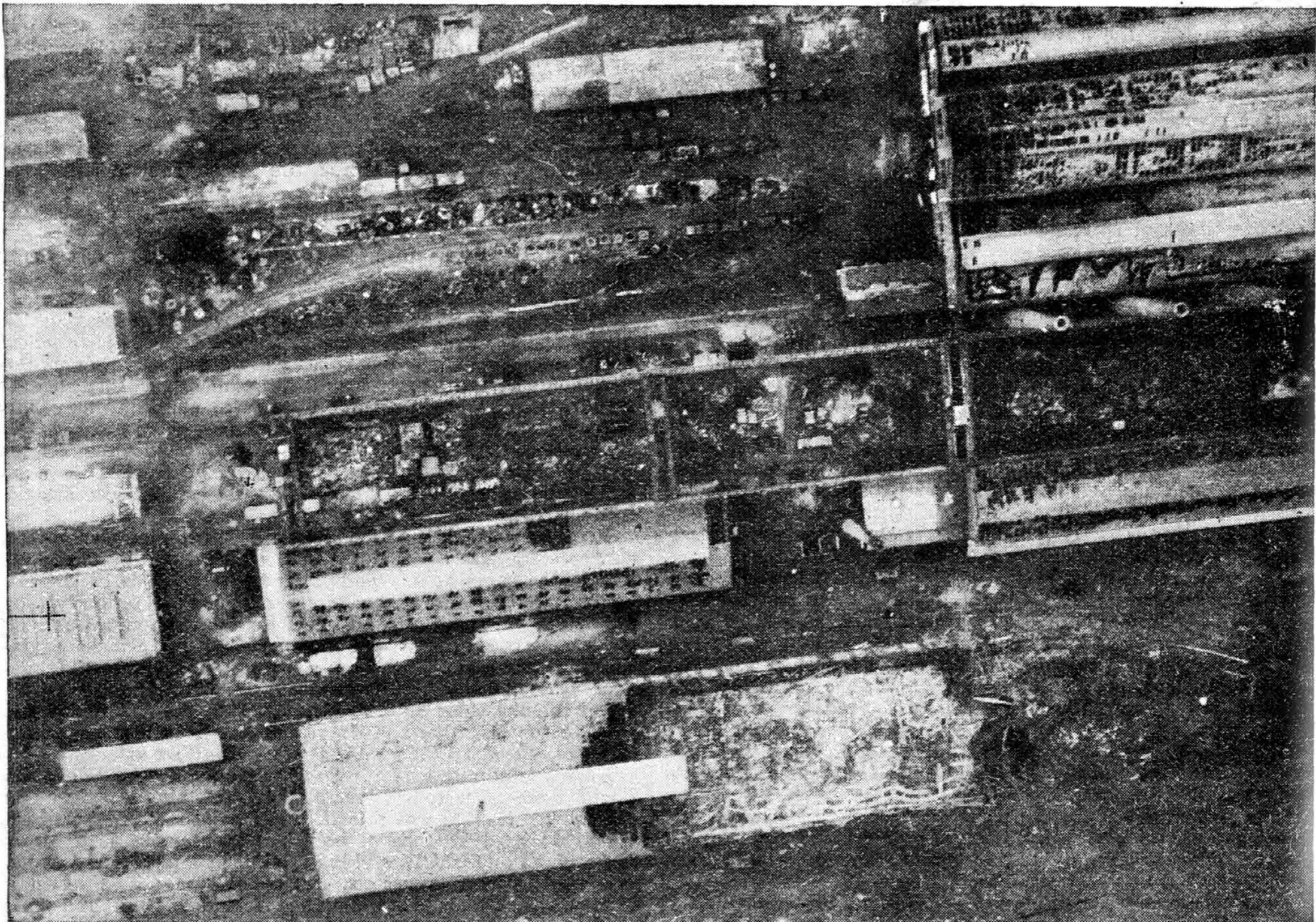
continuously over the enemy's territory, systematically bombing tank concentrations, gun emplacements, traffic on the coastal roads, and landing grounds. Explosions of extreme violence were caused on two occasions. On the first, a medium bomber, which had unloaded from 6,000 ft., was rocked by the blast of an ammunition dump it had hit; on the second, debris from another ammunition dump was flung 5,000 ft. in the air and spattered the bomber which had set it off.

Night bombers alone dropped 800 tons of bombs in the first week of the offensive in the battle area and on landing grounds. Still more were dropped in two successful raids on aerodromes in Crete. The weight of bombs dropped by day must have been even greater.

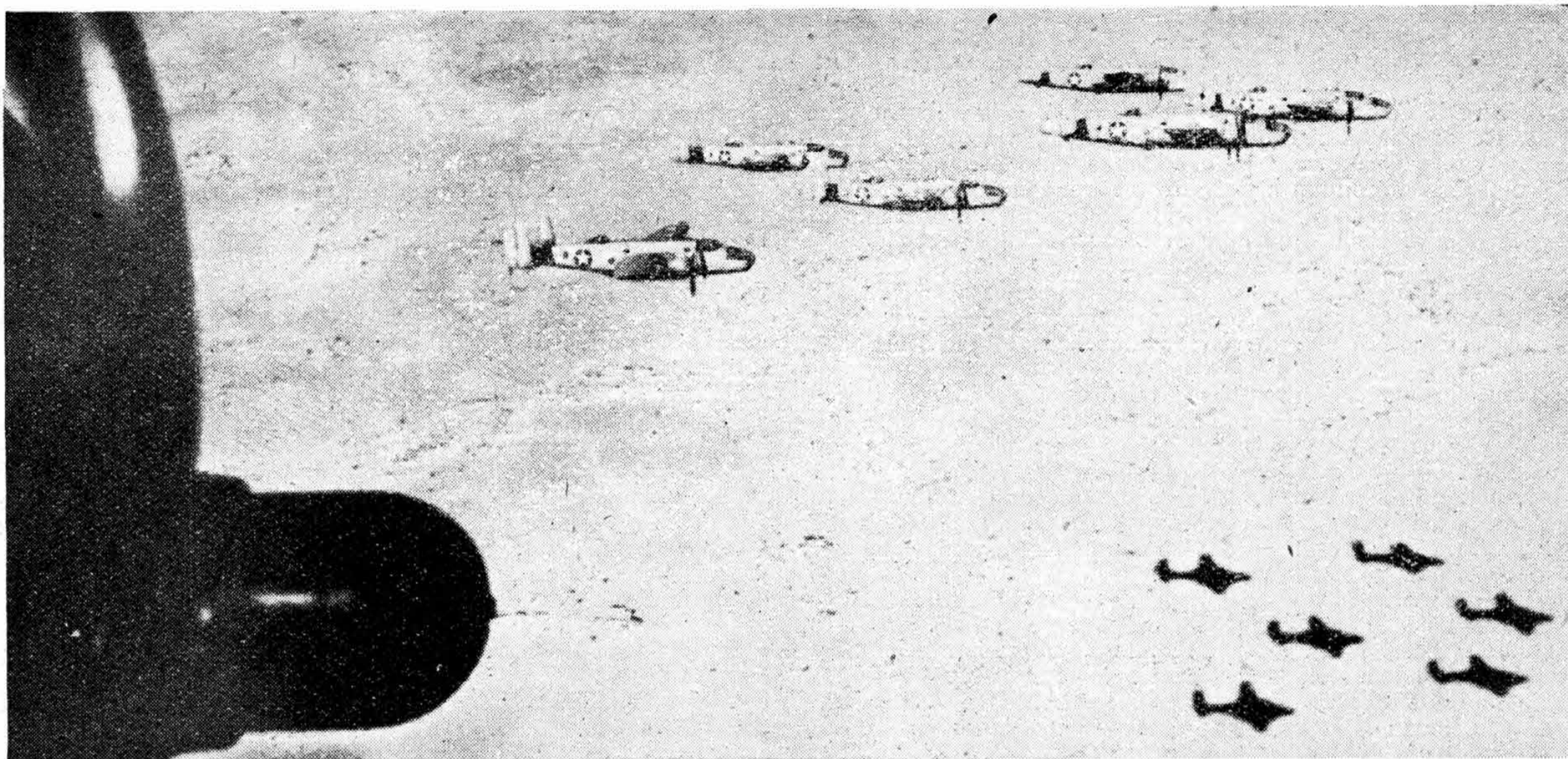
In attacks on enemy ships in the Mediterranean, two tankers and two merchant ships were sunk, and another merchant ship badly damaged. The two ships sunk both blew up and disappeared. Long-range fighters—probably Bristol Beaufighters—had a particularly happy week, not only in their raiding of the enemy's lines of communication, but in combat with the enemy's air forces. In one day they shot down two Ju 88s, a Dornier Do. 24 flying-boat, a C.R.42 Italian fighter, and four Ju 52 air transports. Later, they shot down two He 111s. Finding a merchant vessel and a destroyer in company, they attacked and left both giving off a significant trail of smoke. These two ships were later bombed.

The small number of their losses perhaps best reflected the true measure of the Allied Air Forces' superiority over the Axis Air Forces. For the Allies' loss of 32 fighters and bombers, the Luftwaffe and Regia Aeronautica lost 86. The heaviest single loss occurred when a party of Stukas, well escorted by fighters, tried to attack Eighth Army positions. Thirteen, most of them fighters, were shot down.

The Axis air offensive against Malta died down during the week. General Quade, the German broadcasting air commentator, said that the attacks on Malta could be considered as an absolute victory for the Axis. Doubtless the Luftwaffe is now praying for a few absolute defeats. In its raids last week, the German Air Force lost six fighters in the first two



THE MARK OF THE LANCASTER.—Damage at the Breuil Steelworks, le Creusot, which were attacked at dusk by Avro Lancasters on Oct. 17. A probable direct hit at the South end of the steelworks has caused partial collapse of the framework; half a warehouse has been destroyed by a direct hit; severe blast damage is also evident. As a result of this raid, the production of munitions for Germany at le Creusot will be interrupted for at least eight months.



CASTING THEIR SHADOWS BEFORE.—North American B-25Bs of the U.S. Army Air Forces on their way to harass the supply lines and bases of the Axis forces in North Africa. Aeroplanes from the United States, as well as those from Great Britain, are flown to the Middle East across a route from the coast of West Africa.

days and then gave up raiding, at first compulsorily—Spitfires intervened—then voluntarily.

Stalingrad Fights Back

For the past two months the defenders of Stalingrad have seemed to stand on the brink of disaster. A score of times the city's fall has seemed certain beneath the frenzied blows of a desperate enemy impelled onwards by a leader's reckless promise to take the town and allay the fears of an anxious people. In that time the military value of Stalingrad has grown less than its political worth to the Nazi chiefs; they are willing to pay any price to redeem Hitler's undertaking, but the displacement of von Bock suggests that the political assessment of Stalingrad's importance is not endorsed by every German general.

Von Bock must have found bitter consolation in last week's fighting if he objected to the wasteful exchange of German lives for heaps of rubble and a few hollow buildings. Never had the Germans paid so dearly for such meagre progress. In the Northern districts they secured a precarious hold upon a street here and a building there, but often they were robbed of their gains by Russian counter-attacks. They sought success by narrowing still more the breadth of their thrust, and using the largest tanks in the greatest numbers they could muster. Yet, at the week-end, the Russians had the strength to launch an offensive at the very point of the German's heaviest incursion.

This offensive followed an earlier assault in the South of Stalingrad, which forced the Germans out of some of their advanced positions and compelled them to rush up reinforcements. They also announced, probably with pained surprise, that Soviet troops were pouring across the Volga to increase the Red Army's pressure in this sector.

Meanwhile, the Red Army's relief operations continued to make slow progress towards Stalingrad from the North-West. Every yard gained was bitterly contested and had to be held against the most vigorous counter-attacks.

With all the tactical and strategical advantages on their side, the Axis forces could make but little progress in the Eastern Caucasus, where they are struggling to reach the Grozny oilfields. They succeeded in entering Nalchik, some 70 miles South-West of Mozdok, and street fighting was still in progress at the week-end, although the Germans claimed to have captured the town on Oct. 28.

At the other end of the Caucasus, battle honours went to the Russians, who succeeded in pushing forward in an area North-East of Tuapse, though fighting without air supremacy and fiercely assailed by the Luftwaffe.

There was again little detailed news about the work of the two Air Forces. Fresh supplies of aeroplanes strengthened the Red Air Fleet in the Stalingrad area, and allowed it to reduce its numerical disadvantage over the main theatre and to outnumber the enemy in the South during the initial phase of the Red Army's offensive. The Baltic Fleet Air Arm raided a railway junction in enemy hands and caused five fires, blew

up an ammunition dump and wrecked some workshops. A Stockholm report alleged that Helsinki was bombed during the week.

Berlin claimed that the Luftwaffe had started fires in Leningrad and that four ships bringing supplies to that city across Lake Ladoga had been sunk. The bombing of Russian troop concentrations in Rzhev-Lake Ilmen district was continued.

In its review of the air operations during the week Oct. 25-31, Moscow reported the destruction of 202 aeroplanes of the Luftwaffe in air combat, by anti-aircraft gunfire and by raids on aerodromes. The Russians lost 128.

The Americans Hold Guadalcanar

Japanese infantry, strongly supported by tanks and aircraft, made a determined attack on American positions on Guadalcanar Island on Oct. 25. During the day they made four attempts to break through the American's defences but failed. Twenty-two of their fighters and bombers were shot down in these operations. At the same time units of the U.S. and Japanese Navies went into action, both supported by their own aircraft.

The first to open the day's offensive were Douglas Dauntless dive bombers from Guadalcanar, which attacked an enemy naval force North of Florida Island and left a cruiser motionless in the water. Sixteen enemy bombers then attacked the aerodrome on Guadalcanar. Five were shot down. Later, nine more bombers caused minor damage. Dive bombers from Guadalcanar made another attack on the Naval force North of Florida Island. They were followed by Fortresses. Two hits left an enemy cruiser burning. Japanese aircraft also attacked American Naval vessels.

In these actions the U.S. destroyer Porter and an aircraft carrier were lost. Previously, the Wasp had been reported lost in the same area. The Japanese had two battleships hit by bombs, two aircraft carriers damaged (one seriously), one heavy cruiser badly hit and one light cruiser bombed and hit. No Naval engagement was reported, all the attacks against the ships being launched from the air. Next day the Japanese fleet steamed away from Guadalcanar. After the Japanese had failed to take their objective on Oct. 25, the Americans went over to the offensive and drove the enemy back a distance of 16 miles, speeding their retreat with strong air attacks.

Enemy shipping and air bases throughout the South-west Pacific were subjected to several heavy bombing attacks during the week. Rabaul was raided by a strong force of Fortresses, which dropped 17 tons of bombs (roughly, the load of two Lancasters) on Oct. 25, sinking a gunboat and severely damaging three merchant vessels. Rabaul was raided again on Oct. 28. Other places bombed included Buin and Faisi, Kavieng, Kupang (Dutch Timor), and Buka.

Difficult terrain, rather than enemy opposition, slowed down the Australians' advance in New Guinea. The Japanese lost Alola, and only six miles separated the Australians from the enemy's main base at Kokoda. Lae and Salamaua were both raided.

Three Japanese bombers raided Port Darwin on the night of Oct. 25-26; others attacked Port Moresby and Milne Bay the same night. At no place did they do much harm.

Eighteen tons of bombs were dropped by U.S. Army Liberators on the camp area and on the submarine base at Kiska (Aleutians) on Oct. 23. Army Fortresses raided the same targets on the following day.

Aeroplanes of the 10th U.S. Army Air Force were active over China during the week. They bombed targets at Hong Kong and Kowloon on Oct. 25 and 26, the White Cloud aerodrome at Canton and a Japanese aerodrome at Yungcheng, in South Shansi, and intercepted several escorted bomber formations of the enemy.

Japanese air raids on American aerodromes in the Dibrugarh area of Assam caused some damage to buildings and the loss of some aeroplanes, but did not seriously interrupt the ferry service between India and China. Over Burma, fighters made a low-level attack on a Japanese aerodrome in the Schwebo area. Blenheims bombed the railway station at Seywa.

In all their operations the Japanese are known to have suffered the loss of at least 49 aeroplanes in the air and at least five more on the ground.

Madagascar

British troops occupied Fianarantsoa, the most important town in Southern Madagascar. They had covered 260 miles since the capture of Antananarivo. The fall of the town was

preceded by a short engagement at Balakamisy, which resulted in the capture of 440 prisoners, including the Commanding Officers of the 2nd Light Infantry Battalion and of the Malagash Rifle Battalion.

Canterbury Fighter-bombed

Just before sunset on Oct. 31, about 50 fighter-bombers and a few bombers of the Luftwaffe swooped upon Canterbury, dropped their bombs and sped hurriedly out to sea. Not all had reached the target. Some had been intercepted and shot down on their way in; others fell on the way back. Altogether, nine were accounted for—six by fighters and three by anti-aircraft guns. Damage was caused and there were casualties, but the raid was no more than a pale shadow of the brilliant Lancaster raids on Milan and Le Creusot, which obviously inspired it.

An hour or two later the Luftwaffe began a series of scattered raids over Great Britain and lost four more bombers—three by the guns of a single Beaufighter. The loss of 13 aeroplanes in so short a space of time must have convinced the Luftwaffe that the offensive in Egypt drew none of its strength from the defences of Britain. These were as strong and as alert as ever, they discovered.

Bad weather curtailed flying and there were no outstanding Allied raids to record. A summary of the offensive operations of Fighter, Coastal and Bomber Commands of the R.A.F. and of the U.S. Army Eighth Air Force appears below.

Diary of the Week

Offensive Operations of the Fighter, Coastal and Bomber Commands of the R.A.F. and of the U.S. Army Eighth Air Force. From October 25 to 31, 1942

Sunday, October 25
DAY .. Supermarine Spitfires of Fighter Command attacked an enemy camp near Le Havre.

Monday, October 26
DAY .. Two enemy aircraft destroyed over Great Britain, one by anti-aircraft gunfire and the other by fighters. One Ju 88 shot down over the Bay of Biscay by a Beaufighter of Coastal Command.

Tuesday, October 27
DAY .. Mosquitoes of Bomber Command attacked the German port of Flensburg. A medium-sized merchant vessel was hit and set on fire. Objectives in Holland and Belgium also bombed. Spitfires of Fighter Command attacked goods train and other targets in Northern France. Two fighters lost.

Wednesday, October 28
None reported.

Thursday, October 29
DAY .. Aeroplanes of Bomber Command attacked targets in West and North-west Germany and in Holland. Fighters of the U.S. Army Air Force attacked canal barges in Belgium. Three bombers lost.

Friday, October 30
DAY .. Spitfires of Fighter Command attacked goods train near Ostend and an enemy supply ship near Cherbourg. Mosquitoes bombed aerodrome and factory in Holland and attacked ships off the coast. One Mosquito lost.

Saturday, October 31
DAY .. Aeroplanes of Bomber Command attacked targets in North-west Germany. Factories and industrial objectives in Northern France and Belgium were also bombed and many hits seen. Aeroplanes of Fighter Command, including Westland Whirlwinds, attacked railways in Northern France. Three bombers and four fighters lost. Nine enemy fighter-bombers (Fw 190s) destroyed (six by fighters, three by anti-aircraft gunfire) during a short but sharp raid on Canterbury (Kent) at sunset. Two R.A.F. fighters lost. Fighters of the U.S. Army Eighth Air Force attacked a goods train near Berck-sur-Mer.
NIGHT .. Night intruder patrols flown by Fighter Command. Four enemy raiders destroyed over Great Britain.

U.S. ARMY EIGHTH AIR FORCE
The U.S. Army Eighth Air Force suffered no losses in its fighter operations during the week. Its total losses therefore remain at nine bombers and seven fighters, and its enemy victims reported at 99 fighters.

AXIS AND ALLIED LOSSES—OCTOBER 25-31, 1942

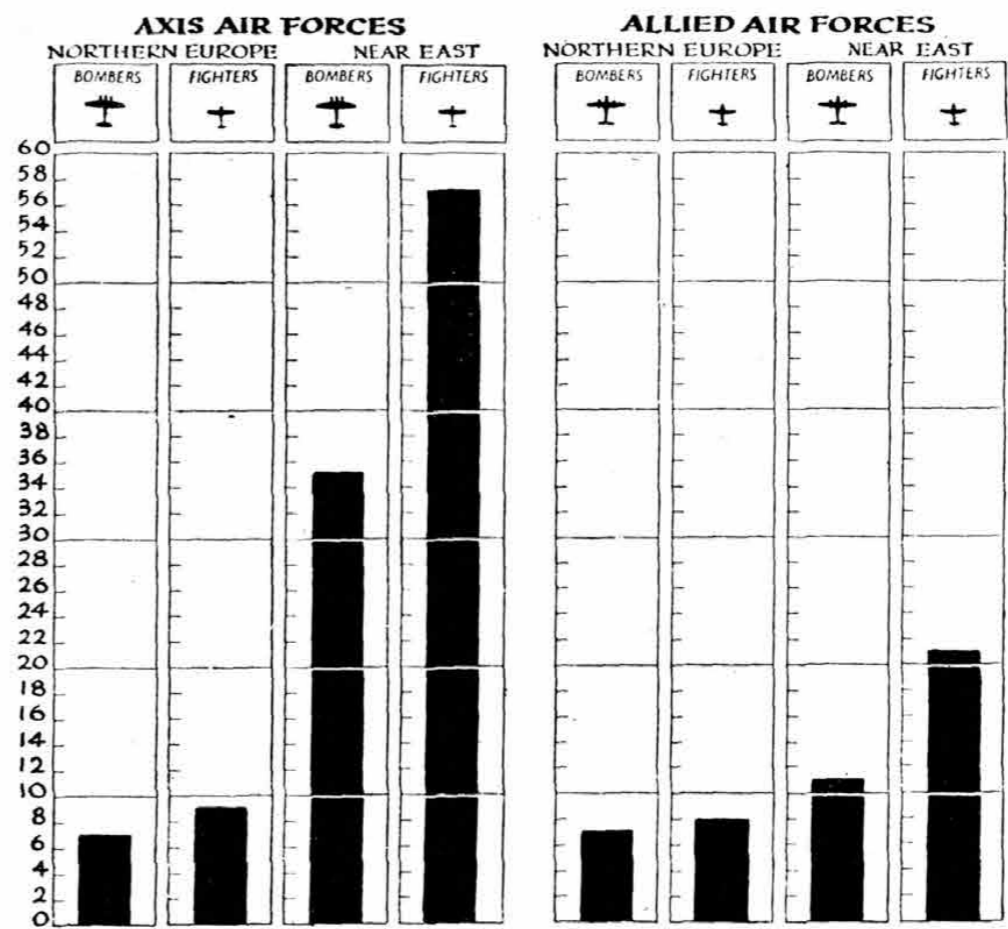
Date	Axis (N. Europe)		Axis (Near East)		Allied (N. Europe)		Allied (Near East)	
	Machines	Personnel	Machines	Personnel	Machines	Personnel	Machines	Personnel
25-10-42	—	—	18	40	—	—	3	3
26-10-42	3	12	24	55	—	—	10	26
27-10-42	—	—	19	51	2	2	6	16
28-10-42	—	—	9	9	—	—	4	12
29-10-42	—	—	4	4	3	6	1	4
30-10-42	—	—	5	8	1	2	3	8
31-10-42	13	29	13	18	9	12	5	10
Totals	16	41	92	185	15	22	32	79

TOTAL LOSSES IN THE AIR WAR* (To dawn, November 1).

	Axis Air Forces	Allied Air Forces
Machines destroyed in combat or by A.A. gunfire .. .	10,316	6,916
Personnel .. .	27,146	20,959

* Excluding Russia and the Far East.

THE WEEK'S LOSSES—October 25 to 31, 1942.



THE WEEK'S LOSSES AT A GLANCE.—The comparative losses in the Air War for the week October 25 to 31, 1942, inclusive. The chart does not include aeroplanes destroyed in Russia and the Far East or those destroyed on the ground. The figures are: Northern Europe: Axis (daylight offensive) 2 bombers and 9 fighter-bombers; (defence by day) 1 bomber; (Night offensive) 4 bombers; Allied (daylight offensive) 7 bombers and 6 fighters; (defence by day) 2 fighters. The figures for the Near East are: Axis, 35 bombers and 57 fighters; Allied, 11 bombers and 21 fighters. Approximate personnel losses are: Northern Europe: Axis, 41; Allied, 22; Near East, Axis, 185; Allied, 79.

NEWS OF THE WEEK

THE OUTPUT of aircraft in Great Britain in September rose by weight of aircraft 18 per cent. That means about six tons of aircraft in September for every five tons in August. Both figures are higher than any that have been reached in any month since the War started. These facts were given by Mr. Herbert Morrison, Home Secretary, in a speech at Cardiff on Nov. 1. He also said that Great Britain's output per head of population was greater than that of any other country, Allied or enemy; that 80 per cent. of Great Britain's war production was shipped overseas; and that the warships of the Navy and the aircraft of the Fleet Air Arm and of the R.A.F. had escorted more than 120,000 voyages in convoy and had brought safely to port 199 out of every 200 ships in those convoys.

U.S. production of aircraft in September showed an increase of 10 per cent. over the figures for August. Four-motor bombers left the assembly lines almost on schedule and the acceptance of all heavy tactical types increased substantially. The result of a marked increase in the output of heavy aeroplanes and a decrease in the production of light aeroplanes was a small overall increase. Air-screw production continues to present a serious problem and aeroplane construction may increase in the months ahead more rapidly than airscrew production unless the output of airscrews can be greatly increased. Mass-production methods have greatly improved and many engineering difficulties have been overcome. These facts were given at Washington on Nov. 1.

Thirteen enemy raiders were destroyed on Oct. 31. About 50 enemy aeroplanes attacked Canterbury during the late afternoon in one of the biggest daylight raids on Great Britain since the Battle of Britain. Nine were destroyed, six by the R.A.F. and three by anti-aircraft fire. Five of the raiders, all Fw 190 fighter-bombers, were shot down by one R.A.F. squadron before they reached the coast. Four more enemy raiders were destroyed that night in scattered raids on this country.

A Bill providing for 500,000 tons of aircraft-carriers, equivalent to 25 carriers, and for building more than 14,000 naval aeroplanes was signed by President Roosevelt on Oct. 27. The sum involved is £3,750,000,000.

Sixteen persons were killed on Oct. 26 when a machine of the R.A.F. Ferry Command crashed at Dorval, Montreal, soon after taking off. Two of the killed were members of the crew and the rest were passengers, said to include R.C.A.F. personnel and contractors' employees. The machine was reported to be on its way to Labrador.

Four-motor bombers are now being ferried by women pilots of the Air Transport Auxiliary.

The U.S. aircraft carrier Wasp was stated on Oct. 26 to have been sunk on Sept. 15 by an enemy submarine while covering the reinforcing of Guadalcanar.

Preliminary details of the de Havilland Mosquito reconnaissance-bomber were published for the first time on Oct. 27.

Thirteen aircraft carriers are being built in the U.S.A. according to a statement made at New York on Oct. 27 by Capt. L. P. Lovette, Director of Public Relations of the U.S. Navy.

Units of Coastal Command of the R.A.F. were stated on Oct. 28 to have been operating in Northern Russia since the Summer of this year, mainly on convoy protection work.

American bombs have been used by the U.S. Air Forces in the Middle East for the first time, according to a statement made in Cairo on Oct. 27 by Major-General L. H. Brereton, Commanding the U.S. Middle East Air Force.

More than 1,000 mines were stated on Oct. 30 to have been laid in enemy waters during recent weeks by aircraft of Bomber Command.

Fighters of the U.S. Army Eighth Air Force attacked canal barges in Belgium on Oct. 29. This is the first time an independent operation by U.S. fighter pilots, presumably flying British spitfires, has been mentioned.

The United States Air Forces will have two and half million men by January, 1944, which will represent about one-third the strength of the U.S. Army, according to Major-General H. H. Arnold, Chief of the U.S. Army Air Forces in a speech at Miami on Oct. 28.

Chittagong aerodrome and aerodromes in North-East Assam were attacked by Japanese aeroplanes on Oct. 25. These were the first of a number of raids on aerodromes used by the R.A.F. and U.S.A.A.F.

The Japanese fleet had retired from the scene of the Solomons battle and the U.S. forces were still in Guadalcanar occupying "every inch of ground we ever controlled" according to a statement made by Colonel Knox, Secretary of the U.S. Navy, on Oct. 30.

Air Marshal J. E. A. Baldwin is now in India and has taken up the newly created post of Deputy Air Officer C.-in-C. This was announced from Delhi on Oct. 27. The new post has been created because of the continued expansion of the air forces in India.

Eighteen American pilots who have been serving with the R.A.F. and R.C.A.F. were transferred to the U.S. Navy on Oct. 26 as commissioned officers. They were the first American volunteer pilots to serve in Great Britain and are returning to the U.S.A. where, after addressing their countrymen on their experiences in Great Britain, they will take a refresher course before going on active duty with the U.S. Naval Air Arm.

More than 100,000 men have been transferred to the work of building camps and aerodromes for the American forces in Great Britain, according to an announcement on Sept. 29.

A new bomber squadron of the R.C.A.F., composed of French Canadians, made its first operational flight over Germany as part of a strong force of R.A.F. bombers which attacked objectives in Western Germany on the night of Oct. 5.

A new type of cargo-carrying aeroplane for the U.S. Navy, which was reported on Oct. 18 to have been under construction for some time, is said to be a two-motor flying-boat and a version of the Glenn Martin PBM-3 long-range patrol bomber. All-up weight is said to be four tons more than that of the PBM-3.

The training of Canadian parachute troops in Manitoba will be delayed until next Spring because of difficulties connected with the installation of equipment. The U.S. Army will continue to train further contingents of Canadian parachute volunteers in Montana. In return the U.S.A. will be given the use of a Canadian camp for testing certain equipment during the cold weather, in co-operation with the Canadian Army. This was announced in Canada on Oct. 30.

R.A.F. pilots and crews selected for "pathfinder" duties during raids are to wear distinguishing wings made of gilt as well as the normal wings. The new wings will be similar to those worn on R.A.F. officers' field service caps, but without the crown, and will be worn on the left breast. "Pathfinder" crews are all volunteers, but are chosen for their experience of operational flying and a special ability to locate targets in unfavourable conditions. Some of these special crews remain over the target area throughout the raid so that they can give a comprehensive report on their return.

More than 6,000 airmen from New Zealand are serving overseas and, in addition, New Zealand's part in the British Commonwealth Joint Air Training Plan provides 5,000 airmen annually. The Japanese entry into the War increased New Zealand's air obligations and necessitated a great expansion of the home-based air force. Compared with December, 1941, New Zealand now has more than seven times as many air squadrons carrying 10 times the weight of bombs and 16 times as many guns. New Zealand airmen are also serving in the Solomon Islands theatre of operations. These facts were given in a report from a correspondent of "The Times" on Oct. 29.

Good Conduct badges for three years' unbroken good service are now available for certain members of the W.A.A.F. The award entitles airwomen to receive an extra 2d. a day good conduct pay. The badge is similar to that awarded in the R.A.F.

Mr. James McCullum, the joint designer, with Mr. Peter Burt, of sleeve-valve motorcar engines before the Great War, died at Evanston, Illinois, U.S.A., on Oct. 26.

Group Capt. W. D. van Vliet, R.C.A.F., one of Canada's best-known pilots, died in hospital at Ottawa on Oct. 25 from heart trouble at the age of forty-nine. He commanded No. 110 Army Co-operation Squadron of the R.C.A.F. when it came to England as the first R.C.A.F. unit to be sent overseas in this War. At the time of his death he was Director of Establishments, R.C.A.F.

Mrs. Roosevelt visited an aerodrome of Air Transport Auxiliary on Oct. 26, accompanied by Mrs. Churchill. On Oct. 27 she visited the H.Q. of the R.A.F. Fighter Command, accompanied by Air Commandant Trefusis Forbes, Director of the W.A.A.F. On Oct. 29 she visited the H.Q. of Bomber Command of the U.S.A. 8th Air Force and units of the U.S.A.A.F.

The address of the Comrades of the R.A.F. Association has been changed, as from Oct. 30, to: Hastings House, 10, Norfolk Street, Strand, W.C.2.



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ALVIS MECHANISATION LTD.

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power-operated
gun turrets;
Frazer-Nash
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Parnall
AIRCRAFT LTD

Order of the Crown of Yugoslavia, Fifth Class
 Flying Officer S. J. Madill, R.N.Z.A.F.
 Flying Officer J. A. H. Smith, R.N.Z.A.F.

Commander of the Order of Orange Nassau
 Group Captain S. L. G. Pope, D.F.C., A.F.C., R.A.F.
 Wing Commander W. E. Rankin, R.A.F.O.

Order of the White Eagle, Fifth Class
 Act. Squadron Leader W. A. Griffiths, R.A.F.
 Flight Lieutenant D. M. Rolph-Smith, R.A.F.

Soldiers' Medals
 Sergeant L. L. Barton, R.A.A.F.
 Aircraftman 1st Class J. H. Walker.

EXTRACTS FROM THE LONDON GAZETTE

Air Ministry, October 1, 1942.

ROYAL AIR FORCE VOLUNTEER RESERVE

GENERAL DUTIES BRANCH.—Flt. Lts. to be Sqn. Ldrs. (temp.):—June: R. L. Bowes, F. J. A. Chase, C. A. Wood. Sept.: D. W. Donaldson, D.F.C. (Sen. Mar. 1), T. K. Walls (Sen. June 1), G. A. Brown, L. J. C. Mitchell, E. L. Hancock, G. C. Knowles, M. T. Judd, A.F.C., A. S. Worthington, J. Hill, E. P. Lash, N. M. Browning, C. G. Higgins, C. H. N. L'Estrange, E. F. Rhodes, F. H. Hawes, H. J. Greenland, J. D. Tucker, J. C. Smyth, C. C. J. Barritt, D. M. Maw, E. L. Gosling, D. S. Gladstone, L. W. Ivey, D. M. Walbourn, E. M. Webb, A. C. Smith, D. A. D. L. Nichols, T. Carter, A. R. Craigie, W. B. Thompson, R. Rendle.

TECHNICAL BRANCH.—Sqn. Ldrs. to be Wg. Cdrs. (temp.):—Sept.: M. H. Butler, D.F.C., F. Susans, M.B.E., E. S. Steddy, W. G. Kentfield, H. Gott, D.S.M., W. Kidd.

Flt. Lts. to be Sqn. Ldrs. (temp.):—Sept.: J. W. J. Truran, J. H. C. Beard

Flg. Offs. to be Flt. Lts. (temp.):—Apr., 1941: M. L. Formby, Mar.: H. W. R. Trigg, June: R. Munro (Sen. Sept. 1, 1941), J. L. Western, T. B. Child, Sept.: W. G. Hicks (Sen. June 1), J. Armes, W. L. Gordon, C. P. L. Nicholson, L. J. Fowler, H. E. G. Richards, J. T. Woodmass, J. Tee, M.C., J. C. Coombes, A. W. Sharpe, A. Thomson, H. Mundy, A. E. C. York-Bramble, A. D. Stewart, W. E. French, R. D. Poore, A. P. Pearce, L. Cook, R. G. Macleod, H. Sacre, H. Royston, P. C. Cleaver, P. G. Richardson, M.B.E., P. M. Chettle, C. F. Croisdale, C. S. Fell, E. G. Jackson, A. H. Lynall, T. R. Robson, E. A. R. Landon, W. Barker, C. H. Shute, D. Lewis-Jones, H. J. Hart, G. J. Owen, H. W. Scott, I. D. H. Gibbins, W. Howarth, P. R. M. Barker, J. E. S. Elwell, R. Stallebrass, J. F. Elston, C. R. Guy, W. G. Eatherly, A. O. Marshall, C. J. Williams, P. F. Strouville, R. A. V. Dismore, L. S. Davies, S. J. Wood, T. N. L. Stovin, F. R. Wilson, H. F. Hudspeth, E. Armistead, D. C. Bayliss, I. A. Macdonald, M. A. Mair, C. G. Moore, C. N. Kington, E. H. M. Samson, C. A. Woodwark, E. M. Lewis, R. E. E. Barton, E. O. Robertson, A. Baker, W. McP. Barber, A. J. M. Aldwinckle, I. B. Greig, E. G. Fischeles, P. Bailey, W. A. Webb, W. P. Gregg, R. W. H. Bloxham, L. H. Mansell, G. M. Fossick, B. Samways, C. E. Edgley, S. W. P. Henton, F. J. Heath, A. H. Ratcliffe, G. A. Houghton, C. H. Targett, C. W. Morle, M.B.E., C. A. H. Goudie, P. W. Baguley, J. M. S. Adams, J. H. Bond, A. W. Bowyer, J. G. Halliday, H. L. Bird, C. L. Lauchlan, F. C. Jones, A. P. Harrison, G. S. Woollatt, R. W. Fraser, E. G. Huntley, W. G. Pyke, V. C. D. Gray, V. J. Chipperfield, G. F. Turner, G. M. McMinn, G. E. Buckley, M. R. Jackson, A. E. Jaquemet, H. W. H. Ransome, T. R. Kennedy, C. T. Freeman, D.S.C., A.F.C., R. A. Hoskins, E. L. Vaughan, J. G. Johnston, E. Gordon-Davis.

BALLOON BRANCH.—Flt. Lt. to be Sqn. Ldr. (temp.):—Sept.: R. C. Collinswood.

Flg. Offs. to be Flt. Lts. (temp.):—Sept.: B. A. Etherington, L. H. Darby, G. Kellett, R. S. Ridgway, R. G. Greaves, A. L. Sayer, H. I. Hadley, H. S. Mander, J. R. Broad, A. Kenworthy, R. P.

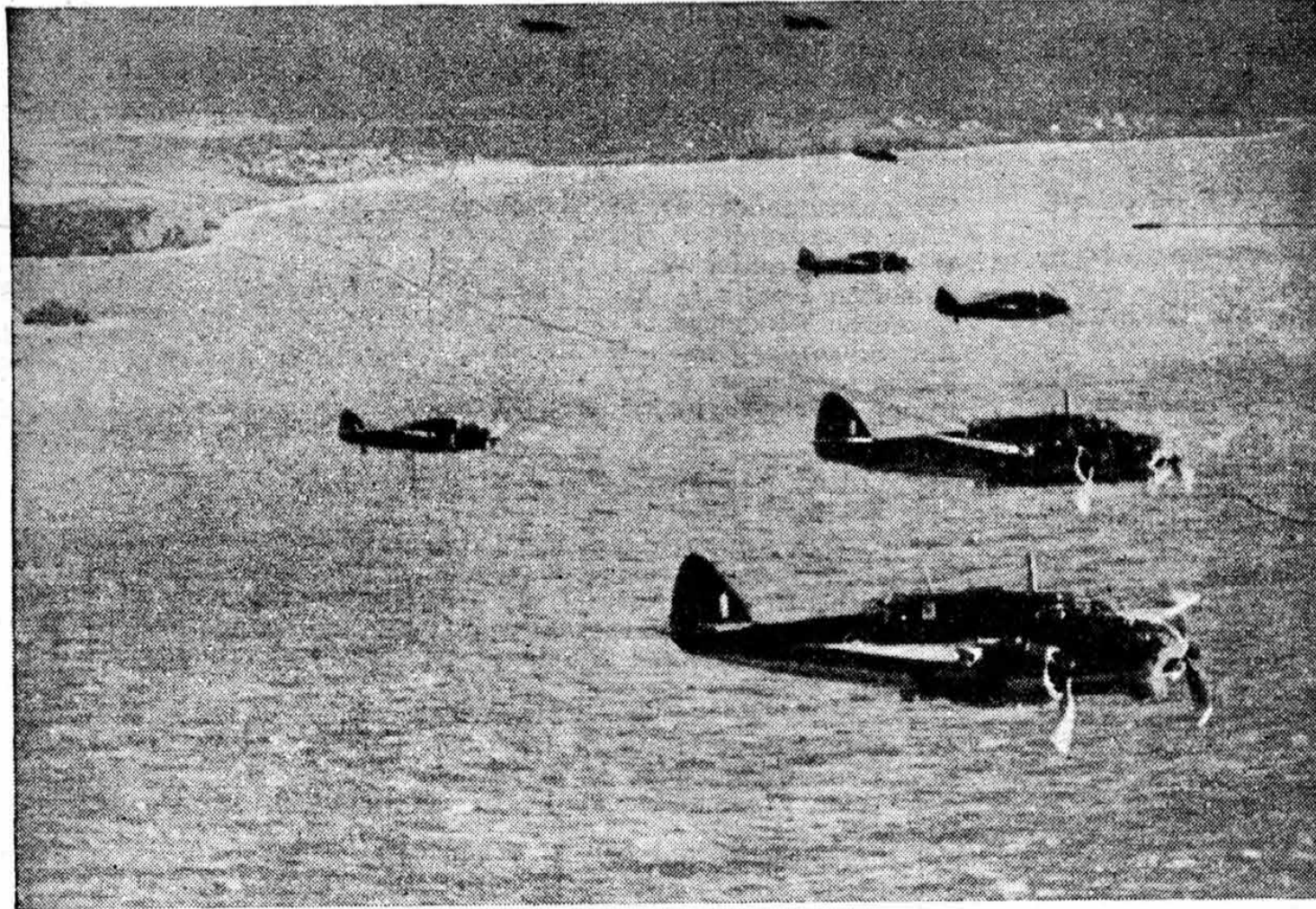
Mouldsdale, A. A. Salmon, D. M. C. Best, J. D. Buck, H. D. Buckle, R. H. Havart, A. P. Bailey, J. Eve, J. C. Johnston, S. E. Gateley, A. C. S. Eagles, R. R. Lloyd-Williams, C. B. Smith, J. J. J. Lovelady, R. M. N. Smithson, G. E. Thomas, N. F. Downing, W. G. Bennett, G. T. Benton, G. B. Earle, W. Findlay, A. C. Howatson, H. C. Liddell, F. L. Green, W. G. Larman, L. A. Smith, K. L. Thorne, H. W. Dawson, L. G. C. Sims, C. C. W. Rodd, M. R. Samuel, J. H. L. Innes, T. C. Warren, R. F. Moss, L. N. Gerahty, H. S. Samuel, C. W. Janes, R. A. Pointon, H. W. Newstead, L. B. Longley, H. G. Jackman, L. C. Chappell, I. L. Sayce, C. T. W. Hill, J. E. W. Arthur, P. L. A. Brown-Greaves, A. G. Goode, D. J. Attenborough, J. C. Turner, J. M. Mitchell, H. Muslin, W. E. R. Hendry, T. Brown, L. A. Lane, J. H. P. Briggs, G. T. Armstrong, D. R. Auld, H. Lang, J. C. Shaw, C. L. D. Guy, A. E. Webb, G. Mc. N. Miller, D. R. Weldon, R. O. Buchanan, A. S. Bates, L. C. Lovell, R. P. Edmonds, E. Kershaw, M.C. C. Norton, R. A. Green, P. C. Stone, F. G. Roberts, H. A. Emery, W. T. Martin, E. Rankin, E. Green, J. H. S. Mitchell, W. Orange, C. B. Peach, A. L. Rogers, W. H. J. Wilkie, G. V. Harding, R. A. B. Thomas, P. N. Goss, R. N. Shepherd, L. T. Fayers, A. S. Haslam, B. King, D. J. Ferguson, E. J. Hill, A. Darlow, A. T. Clay, A. A. B. Beeton, T. H. Parkinson.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—Sqn. Ldrs. to be Wg. Cdrs. (temp.):—June: J. S. Heagerty, T. E. H. Birley, G. H. Lewis, D.F.C., E. T. Rees, D.S.O., M.C. Sept.: R. A. Ford, W. R. Warden, E. J. Moule, W. G. Nicholls, D. E. Dempster, W. C. Wilson, D.S.O., O.B.E., M.C., A. J. Dow, W. H. Farrow, D.F.C., L. F. Heald, W. E. H. Muir, M.C., J. E. Hume, D.S.O., W. R. John, H. B. Maund, W. S. Dailey, C. Kerr, F. H. Bell, J. B. Beck, R. A. Angier, F. H. Bickerton, W. H. N. Shakespeare, M.C., A.F.C., L. S. Thompson, O.B.E., J. M. Watson.

Flt. Lts. to be Sqn. Ldrs. (temp.):—June: W. O. Whittick, Sept.: R. K. B. Walker, M.C., W. Small, D. M. Greene, C. F. Kennedy, W. W. Legh-Jones, L. H. Gamble, N. A. Grinstead, W. B. Calder, B. A. Bird, A. B. Fanstone, A.F.C., J. A. G. Stuart, R. G. Bradbury, J. B. McKay, J. G. P. Drummond, M.C., L. H. Wilkins, D.S.C., A. L. Horrell, J. A. Norris, H. Birchall, G. D. Ashby, C. M. G. Luxmore, C. Volk, P. C. Cabot, C. D. Griffiths, S. R. K. Glanville, K. T. Dowling, D.F.C., C. M. T. Hogg, D.S.O., J. R. Patterson, J. Duncan, A. P. C. Bruce, T. A. S. Harpham, J. D. V. Holmes, W. G. Dreschfield, A. H. Button, D. E. B. K. Shipwright, J. A. M. Faraday, M.C., J. W. Greenshields, C. F. Trench, D.S.O.

Flg. Offs. to be Flt. Lts. (temp.):—Mar.: D. B. Pinkney, June: F. C. Honey, G. M. Kingsford, J. H. Smith, Sept.: R. F. Beddow (Sen. Mar. 1), S. H. Price, F. L. Champanhac (Sen. June 1), R. M. Freshwater, M. W. Baseden, J. R. Woods, W. E. Hunt, H. C. Lavers, J. G. Orange, R. J. J. Welcomme, H. R. Herbert, C. J. Jenkins, A. H. Paget-Wilkes, R. Brockebank, N. A. J. Spencer, W. F. B. Elwen, A. W. Robertson, C. R. L. Fitzgerald, D.S.O., A. Melrose, R. T. Foster, D.S.O., R. W. Johnson, B. A. R. Shore, G. H. Tripp, F. J. N. Barber, M.C., W. S. Brundish, D. A. Raeburn, F. J. Howard, F. L. Megson,

C. W. P. Selby, F. Adams, A. T. Bell, R. S. J. Foster, H. G. Maturin, D. Skelding, S. E. May, M. A. Bentley, K. Broadley, C. W. Hart, T. Ure, W. Browning, R. Gillmore, A. T. S. C. Richardson, D. C. L. Potter, J. C. P. M. Davis, H. R. Bourne, D. H. Phillips, W. White, J. E. Hunter, J. McK. Anderson, M.C., A. E. Morgan, A. Macnaghten, V. C. Morris, E. M. Neame, T. G. N. Pearce, P. L. D. Teichman-Derville, W. C. Slade, J. G. H. de Roeper, A. S. Clayton, F. W. Ford, C. A. Ponsford, D. M. J. M. Spencer, J. H. Jennings, A.F.C., R. J. F. Burrows, C. Vaughan, T. I. S. Eeley, A. G. Hardwick, E. Ross-Hime, D. W. Dobson, J. S. Widdows, P. J. W. Cayley, B. H. Bevan-Petman, R. M. Barrington-Reinganum, Sir R. T. Leighton, Bt., S. L. Jay, H. F. King, A. O. Dickinson, C. E. W. Manning, R. A. N. Bulloch, V. D. Bercot, A. V. Darlington, W. G. Morris, E. S. Benson, H. F. W. Brooks, F. E. Chinnery, L. W. B. Teeling, E. A. A. Shackleton, A. V. N. Campbell, G. W. Stallard, N. D. Williams, N. L. Derham, B. B. A. Whitton, G. Ballance, W. E. Dowling, R. H. Kemp, E. G. Penhall, C. G. Bardswell, E. M. Grimdale, J. E. Day, P. M. Wright, R. B. Forman, F. Bracey, G. L. Walters, M. G. Milson, R. L. Rogers, R. D. J. Archer, R. H. Siddons, W. A. O'M. S. Brayton, A. A. Dawson, W. Parke, F. A. Barnes, F. S. Russell, D.S.C., D.F.C., B. P. Beamish, G. L. Selby, H. W. Wiley, L. A. Goss, C. Winslow-Taylor, W. B. Sinclair, A. Swinton-Vaughan, C. Y. McDonald, A.F.C., R. R. Merttens, J. F. Sherrard, S. C. Young, A. H. Jones, W. S. Adams, A. F. Bulkeley, R. E. Casey, C. H. Gadsden, C.I.E., L. D. Harris, C. W. Rippon, N. H. White, J. G. Collis, M. Hackforth-Jones, R. H. Warden, F. G. Roberts, O.B.E., W. L. Booty, E. G. Pinckney, S. P. J. Hill, G. B. Johnson, J. H. Herbertson, M.C., K. C. J. C. McLagien, R. C. Clifford-Turner, D. B. U. Mann, M.C., J. K. Milne, G. W. Gilbert, N. W. Waddington, J. T. Kemp, R. C. K. Smith, T. K. Waite, P. S. S. Clark, N. A. Sinanian, H. Middleton, A. Cave, C. G. Maby, D. A. Catesby, J. H. L. Bolton, S. E. Crutchfield, L. F. Hartje, G. Mewburn, E. V. Masters, E. B. Joynson, J. R. Cobb, V. A. Aibrecht, O.B.E., M.C., E. A. Dearman, S. L. Thomson, M. W. Cruse, A. C. Harper, R. D. Paul, O. F. G. Ross, W. A. Tansley, V. W. Huntington, J. F. Longrigg, W. C. Powell, A. Murray, P. G. H. Fender, F. N. Ashley, C.M.G., C. Morris, F. W. Arnold, G. E. Hansen, G. J. Harvey, R. W. Payne, B. C. Harrison, T. Magner, C. E. P. Davies, B. Armstrong, N. J. S. O'Brien, A. Phillips, D. J. Farquharson, C. C. Lilly, D.S.O., N. J. T. Holland, M. A. Sanders, J. E. Taylor, B. A. Walkerdine, B. N. Mills, V. Rodgers, R. C. Murton-Neale, R. Beard, R. E. Borneman, S. Hulme, D. C. Richardson, A. F. Tabraham, P. E. Burrell, T. S. G. Hunter, W. H. Brighton, C. Brinkman, C. J. Smith, M.C., L. W. Biggs, B. E. De La Torre, R. S. Wishlade, C. Braby, W. N. Davis, T. W. H. Galley, H. N. Roffey, E. S. Harman, J. S. C. Maughan, H. V. Cox, A. Cairns, H. Heywood-Jones, H. Massingham, C. A. Redgrave, J. Fleming, R. A. Wolverson, R. F. Graham, R. E. Pearmund, P. J. A. Scott, J. N. B. Prance, W. B. Enever, A. J. Van S. Addis, A. A. John, F. G. Phillips, A. J. L. Skelton, W. J. H. Jones, P. B. L. Coghlan, P. J. A. Calvoceressi, E. Nordberg, A. G. Barrett, R. L. Hastings, K. S. Wood, W. C. A. Meade, H. W. Knowling, I. M. Matheson, N. B. Davis, R. Catchpole, S. J. Murdoch, W. Slater, R. Duce, K. H. G. Tilley, D. F. Dunstan, E. B. Birtwhistle, H. B. Belcher, P. A. B. Branwell, R. Heymann, G. M. Phillips, G. Jacob, R. H. Phillips, D. R. Norman, H. J. T. Soper, E. H. C. Seacombe, L. T. Gilson, H. R. W. Ellison, E. T. Dangerfield, P. L. Hogan, T. W. Lloyd, D.S.O., T. D. Ross, E. O. D. Keown, E. W. Rogers, D. R. Baylis, G. H. B. Diprose, A. A. Baden-Fuller, R. C. Armour, E. L. Bourn, C. H. S. Pain, A. G. Bainton, F. Whitworth, C. V. Richardson, G. W. Collyer, B. L. I. Cameron, A. W. Baird, J. T. Crawshaw, N. D. Lansdown, D. I. W. Griffiths, J. J. F. Pennink, G. W. V. Revington, E. V. B. Bartlett, K. M. Orrin, W. Mailer, T. K. Brown, J. E. Mann, F. Eade, A. H. C. Bruce, E. S. Gemmel, J. E. Heriot, L. N. Robertson, J. R. Stafford-Langon, D.F.C., B. Elias, F. J. Ashton, D. S. Lawrence, L. S. Lovelock, A. P. Burnet, A. W. Byrne, T. D. W. T. Duffey, G. C. Laws, C. A. Rivington, J. P. Ward, J. Williams, R. H. Finch, W. G. Eager, F. H. E. Watson, K. A. Ede, R. W. Nyren, M. A. H. Christie, H. W. M. Coley, E. L. Dibben, F. E. H. G. Gibbins, J. F. Goddard, F. W. Nadal, E. H. Sommerfield, K. S. Thompson, A. E. Thornton, J. E. G. Utting, K. Barker, G. K. Green, F. S. Lamping, W. D. Melhuish, P. A. Rockey, E. J. Smyth, L. G. Speck, W. G. Hasler, G. W. Baxter, L. Harrison, S. H. Herman, S. W. Jarvis, H. O. Johnson, V. E. E. H. Lambert-Godber, D. C. L. Love, L. Malec, H. H. M. Carpenter, C. A. Moffatt, L. L. Barnard, A. W. Hickling, H. C. R. Holden, F. C. Sampson, I. F. Anderson, L. A. Hooper, J. C. B. Kimber, D. W. Pugh, R. L. Simpson, W. T. S. Lewis, O. H. Grazebrook, L. L. Ogier, A. F. Howgate, C. B. Oxberry, A. Macnicol, J. H. G. Ball, R. J. Bevington, J. F. Cabot, M. B. Cookson, F. W. Cram, J. A. S. Dalgety, R. E. Dingwall, C. H. Higson, L. H. Ingham, A. L. Murray, H. W. Ward, C. H. Wethered, J. A. W. Brooker, B. W. Clarke, J. Arch, W. H. Corkill, H. J. Downing, G. R.



OFFENSIVE PATROL.—Bristol Beaufort torpedo-bombers outward bound in search of enemy ships. The Beaufort can carry either bombs or a torpedo, and can patrol for the greater part of 12 hours.

Died on Active Service
 1558454 A.C.2 G. Alexander.
 1533649 A.C.2 J. K. Anderson.
 1258409 A.C.2 A. J. Botcher.
 922066 L.A.C. A. L. Coster.
 1534751 A.C.1 R. E. Dabbs.
 1076768 A.C.1 J. Duncaife.
 1273524 A.C.1 W. A. Evans.
 774465 L.A.C. Z. V. Fieldman.
 1477047 A.C.1 N. Gill.
 1230400 A.C.1 D. J. Glover.
 1388404 L.A.C. R. G. Gloyne.
 1372763 A.C.1 W. Hardy.
 1195635 L.A.C. C. A. Humby.
 978215 L.A.C. E. B. Ireland.
 1166150 Sgt. T. McQuire.
 1313029 L.A.C. W. F. Pearce.
 618721 A.C.1 J. Potts.
 647108 Cpl. A. Reid.
 547166 Act. W.O. F. K. G. Relton.
 987871 A.C.1 I. Shaw.
 1020344 A.C.1 G. Spray.
 1307625 L.A.C. D. Teaque.
 1402462 A.C.1 P. A. G. Warburton.
 901418 Sgt. W. V. Bodington.
 799726 Sgt. S. H. A. Cullen.
 60707 F/O D. R. Lea.
 645187 L.A.C. T. J. Moroney.
 631004 A.C.1 J. H. Neill.
 1414796 A.C.2 N. W. Pearson.
 539044 Cpl. T. W. Shand.
 1245393 A.C.1 S. W. Spurling.

Previously Reported Missing, Now Reported Prisoner of War
 1310697 Sgt. W. A. Thompson.

WOMEN'S AUXILIARY AIR FORCE

Died on Active Service
 2058675 A.C.W.1 B. Orton.
 421779 Cpl. M. C. Rice.
 2062459 A.C.W.2 C. E. Carter.
 2006409 A.C.W.1 E. Jenner.

ROYAL AUSTRALIAN AIR FORCE

Killed in Action
 Aus.402718 Sgt. R. Biden.

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

Aus.404876 Sgt. E. E. Due.
 Aus.405170 Sgt. R. E. Greenwell.
 Aus.404790 P/O C. A. Harland.
 Aus.405142 P/O S. T. Manners.

Previously Reported Missing, Now Presumed Killed in Action

Aus.11065 Sgt. P. M. Benison.
 Aus.405394 P/O C. C. Chataway.
 Aus.19034 A.C.1 T. Dorney.
 Aus.401596 P/O B. N. Gilbert.
 Aus.406179 P/O R. J. D. Jeffries.
 Aus.466 F/L M. L. Judell.
 Aus.405419 Sgt. J. V. McLean.
 Aus.3846 Sgt. E. J. Taylor.
 Aus.4089 A.C.1 F. W. Tipping.
 Aus.405093 Sgt. W. L. Winterflood.
 Aus.400029 Sgt. L. D. Orbeck.
 Aus.402259 Sgt. R. H. Simes.
 Aus.11931 L.A.C. R. G. Willis.

Missing

Aus.405145 Sgt. E. A. Bailey.
 Aus.403576 Sgt. M. M. Fitzgerald.
 Aus.402612 Sgt. W. H. Sams.
 Aus.402411 Sgt. H. M. Spence.
 Aus.14243 Sgt. W. M. Spongberg.
 Aus.404701 Sgt. J. F. Walsh.
 Aus.401086 P/O W. K. Williams.
 Aus.401359 Sgt. K. Allen.
 Aus.407818 Sgt. A. S. Bennett.
 Aus.404230 F/O W. D. Blackstock.
 Aus.403208 P/O M. J. L. Blunt.
 Aus.402917 Sgt. N. C. Darr.
 Aus.406438 Sgt. T. N. Duffy.
 Aus.403262 P/O A. H. Durrell.
 Aus.404016 F/Sgt. A. Greaves.
 Aus.407289 Sgt. R. Hehir.
 Aus.405162 Sgt. T. F. B. McKenna.

Aus.407719 P/O V. W. J. Mansell.
 Aus.403876 Sgt. J. O. O'Brien.
 Aus.404862 Sgt. R. D. Powell.
 Aus.402539 Sgt. H. W. Price.

ROYAL CANADIAN AIR FORCE

Killed in Action

R.109346 Sgt. C. W. Buchner.

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

J.15019 P/O C. H. Lomas.
 R.56163 F/Sgt. R. C. Roberts.
 R.45116 F/Sgt. H. A. Wilkins.

Previously Reported Missing, Now Presumed Killed in Action

R.59582 Sgt. J. Bradshaw.
 R.67034 F/Sgt. M. R. Chabot.
 J.5703 P/O H. W. Carke.
 R.68696 Sgt. R. B. Glover.
 R.67234 Sgt. J. J. Lynch.
 R.77068 Sgt. S. A. Morrison.
 R.56900 Sgt. E. Warburton.

Wounded or Injured in Action

R.75290 F/Sgt. A. W. Eden

Missing Believed Killed in Action

R.73034 F/Sgt. L. D. Jackson.
 R.53909 F/Sgt. S. L. Reid.
 R.57930 F/Sgt. J. A. Thompson.
 R.82814 Sgt. J. A. M. Turner.
 J.7197 P/O B. P. Cardinal.
 R.61123 F/Sgt. E. H. Coone.
 R.72104 Sgt. J. R. Cooper.
 R.75946 F/Sgt. J. L. Hutchison.
 J.15383 P/O M. D. Mackenzie.
 R.75636 Sgt. W. Pereira.
 R.77310 Sgt. A. D. Robert.
 J.7076 P/O K. H. Taylor.

Missing

J.15343 P/O R. L. Baltzer.
 J.6153 P/O L. D. Bowman.
 R.53364 F/Sgt. T. R. Cattle.
 R.54784 Sgt. T. H. Clarke.
 R.58540 Sgt. H. K. Ford.
 R.2510 F/Sgt. J. M. W. Fortin.
 J.15170 P/O F. A. G. W. Gerty.
 R.94992 L.A.C. R. D. J. MacDonald.

R.83550 Sgt. A. A. Margrett.
 J.15225 P/O S. S. Martin.
 R.69146 F/Sgt. G. R. Montgomery.
 J.15342 P/O D. G. Morris.
 R.69669 F/Sgt. W. L. Platt.
 R.60293 Sgt. A. Swinderski.
 R.91917 Sgt. L. L. Aikenhead.
 J.7321 P/O S. J. Beranek.
 J.15775 P/O D. H. Bootsma.
 R.60627 F/Sgt. R. L. Bradshaw.
 R.66299 Sgt. J. W. Brown.
 R.58481 F/Sgt. R. J. Chisholm.
 R.61096 Sgt. N. E. Costigan.
 J.15419 P/O F. R. Donnison.
 R.55404 Sgt. R. E. Fuller.
 R.76526 F/Sgt. A. H. Harris.
 J.7039 P/O J. R. Heslop.
 R.69856 Sgt. J. T. Hunter.
 J.6175 P/O W. J. Keough.
 J.6854 P/O P. C. Little.
 R.76219 Sgt. H. A. Macdonald.
 R.80200 Sgt. O. W. McKenzie.
 R.79574 F/Sgt. R. H. McRae.
 J.13159 P/O E. M. Marks.
 R.67826 Sgt. R. S. Mulhauser.
 R.78112 Sgt. R. N. Parham.
 J.5790 P/O G. F. Sanderson.
 J.6235 P/O E. A. Smith.
 J.7221 P/O T. J. Taylor.
 J.7202 P/O B. A. Trapp.

Missing Believed Killed on Active Service

R.87929 Sgt. G. J. Pearson.
 R.89236 A.C.1 E. R. Watson.

Killed on Active Service

R.64925 Sgt. A. R. Thomas.
 R.92192 Sgt. A. N. Urquhart.
 J.10151 P/O W. M. Butler.
 R.74710 Sgt. D. W. Campbell.
 R.70600 Sgt. H. L. Johnson.
 R.92048 Sgt. J. I. Mair.

Died on Active Service
 R.83437 Sgt. F. A. Pyatt.

ROYAL NEW ZEALAND AIR FORCE

Previously Reported Missing, Now Presumed Killed in Action

NZ.401753 P/O D. J. Clifford.

Missing, Believed Killed in Action
 NZ.39557 F/Sgt. T. Kay.

Missing

NZ.41574 Sgt. V. P. Cummock.
 NZ.402438 Sgt. B. J. Daley.
 NZ.404540 Sgt. R. R. A. Jones.
 NZ.402550 Sgt. A. W. Corby.
 NZ.411394 Sgt. J. A. Glynn.

Killed on Active Service
 NZ.411491 P/O M. R. Scansie.
 NZ.40328 Sgt. W. A. Shannon.

SOUTH AFRICAN AIR FORCE

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

32766 Lt. J. S. Iddeson.

Previously Reported Missing, Now Presumed Killed in Action

94294 Lt. D. G. Alexander.
 47304 2nd Lt. J. McR. Barclay.
 48065 Lt. L. B. Bensimon.
 103412 2nd Lt. E. N. Burr.
 102345 2nd Lt. R. I. Burrage.
 102514 Air Sgt. D. A. Chaimera.
 94957 Air Sgt. G. J. De Klerk.
 102918 Major T. S. Fisher.
 102620 Major M. H. Fowler.
 47217 Lt. S. Goldfoot.
 94338 Air Sgt. J. Hattingh.
 103278 Lt. O. C. Hojem.
 103652 Lt. E. B. M. Holliday.
 103226 Lt. R. F. Loffhagen.
 47234 Lt. M. A. Oberholzer.
 103464 2nd Lt. K. H. O'Reilly.
 102351 Air Sgt. S. Radomsky.
 103093 Lt. L. A. Stone.
 5569 Air Sgt. R. Viljoen.

Killed on Active Service
 102762 Lt. D. R. Thompson.

ROYAL AIR FORCE AWARDS

HIS MAJESTY THE KING has approved the following awards for courage and skill during operational flights over enemy and enemy occupied countries, including the raid on the Gestapo Headquarters in Oslo.

Victoria Cross

Flying Officer L. T. Manser, R.A.F.V.R. (Deceased)—No. 50 Squadron.

Distinguished Service Order

Act. Squadron Leader D. A. G. Parry, D.F.C., R.A.F.V.R.—No. 105 Squadron

Act. Flight Lieutenant J. R. G. Ralston, D.F.M.—No. 105 Squadron.

Flying Officer J. P. Trench, R.A.F.V.R.—No. 7 Squadron.

Bar to Distinguished Flying Cross

Act. Squadron Leader G. H. Everitt, D.F.C., R.A.F.V.R.—No. 50 Squadron.

Act. Flying Officer H. W. W. Berridge, D.F.C., R.A.F.V.R.—No. 219 Squadron.

Distinguished Flying Cross

Act. Wing Commander L. G. D. Fraser, R.C.A.F.—No. 405 (R.C.A.F.) Squadron.

Squadron Leader G. Howden—No. 68 Squadron.
 Squadron Leader R. P. Elliott—No. 83 Squadron.

Flight Lieutenant J. A. MacLean, R.C.A.F.—No. 405 (R.C.A.F.) Squadron.

Act. Flight Lieutenant G. A. Wilkins—No. 50 Squadron.
 Flying Officer A. N. Bristow, R.A.F.V.R.—No. 105 Squadron.

Flying Officer D. Grundy, R.A.F.V.R.—No. 88 Squadron.
 Flying Officer R. O. Calvert, R.N.Z.A.F.—No. 50 Squadron.

Flying Officer F. T. Coxall, R.A.F.V.R.—No. 88 Squadron.
 Flying Officer C. K. Silcock, R.N.Z.A.F.—No. 44 (Rhodesia) Squadron.

Flying Officer R. C. Hay, R.A.A.F.—No. 50 Squadron.
 Flying Officer D. D. Bonnett—No. 49 Squadron.

Pilot Officer J. A. Sears, R.A.A.F.—No. 50 Squadron.
 Pilot Officer B. W. Marshall, R.A.F.V.R.—No. 105 Squadron.

Pilot Officer G. F. Beurling, D.F.M., R.A.F.V.R.—No. 249 Squadron.

Pilot Officer V. A. Scott, R.A.F.V.R.
 Pilot Officer D. W. Schmidt, R.C.A.F.—No. 227 Squadron.
 Pilot Officer C. L. Selman, R.A.F.V.R.—No. 7 Squadron.

Pilot Officer O. R. Waterbury, R.C.A.F.—No. 83 Squadron.
 Warrant Officer J. L. Armitage—No. 139 Squadron.

Distinguished Flying Medal

Flight Sergeant P. Campbell—No. 61 Squadron.
 Sergeant S. T. Gunnell—No. 61 Squadron.
 Sergeant F. C. Bunclark—No. 61 Squadron.

Sergeant E. H. Corbett—No. 61 Squadron.
 Sergeant C. H. Coakley—No. 61 Squadron.
 Sergeant S. Smith—No. 61 Squadron.
 Sergeant S. J. Thompson—No. 61 Squadron.
 Sergeant F. A. Barker—No. 102 Squadron.
 Sergeant J. T. Bennett—No. 35 Squadron.
 Sergeant C. W. Grey—No. 50 Squadron.
 Sergeant F. M. Spafford—No. 50 Squadron.
 Sergeant R. D. Dangerfield, R.A.A.F.—No. 49 Squadron.
 Sergeant W. H. I. Myers, R.A.A.F.—No. 49 Squadron.
 Sergeant W. S. G. Belton—No. 156 Squadron.
 Sergeant I. J. Edwards—No. 7 Squadron.

THE KING has given orders for an Additional Member of the Military Division of the First Class, or Knight's Grand Cross of the Order of the Bath in recognition of distinguished services in the Royal Air Force:—
 Air Chief Marshal Sir W. F. Freeman, K.C.B., D.S.O., M.C.

The King has approved the following awards on the advice of his Canadian Ministers:—

Air Force Cross

Wing Commander H. M. Kennedy, R.C.A.F.
 Wing Commander E. H. G. Moncrieff, R.C.A.F.
 Wing Commander W. M. Penman, R.A.F.
 Squadron Leader H. W. A. Chesterman, R.A.F.O.
 Squadron Leader D. I. Macklin, R.C.A.F.
 Act. Squadron Leader D. M. Maw, R.A.F.V.R.
 Flight Lieutenant F. W. Westley, R.A.F.
 Flying Officer A. F. Madore, R.C.A.F.

Air Force Medal

Sergeant V. A. Haw, R.C.A.F.
 Sergeant S. A. Sanderson, R.C.A.F.

The King has granted unrestricted permission for the wearing of the following decorations, conferred on officers and airmen by His Majesty the King of Norway, by His Majesty the King of Yugoslavia, by Her Majesty the Queen of the Netherlands and by the President of the United States of America for valuable services during the War:—

Norwegian War Cross

Act. Group Captain K. B. B. Cross, D.S.O., D.F.C.
 Act. Wing Commander J. C. Mayhew (deceased).
 Act. Wing Commander F. D. S. Scott-Malden, D.S.O., D.F.C., R.A.F.V.R.
 Act. Squadron Leader W. J. Pond, M.M.
 Act. Flight Lieutenant H. H. Kitchener, D.F.M., R.A.F.V.R.
 Warrant Officer A. P. Reen, D.F.M.
 Flight Sergeant N. W. Kemp.
 Sergeant T. L. Humble.
 Corporal R. B. Coomber, R.A.F.V.R.

Fairbairns, E. A. Rogers, L. L. N. Vinall, A. H. H. M. Dickie, P. M. Fowler, J. C. Saxby, F. G. C. Catling, W. Whittle, S. C. Barber, J. B. Barratt, K. L. Coghlan, A. R. Cooper, L. E. de Rouet, G. W. Geldart, L. F. A. Green, R. B. Hamer, L. M. Heritage, W. E. Heworth, J. X. Hunt, J. G. Madden-Simpson, I. P. H. Preston, M.C., J. E. G. Robinson, D. Verschoye, C. H. S. Blatch, E. F. Longrigg, A. E. Thomas, C. F. C. Wilson, H. E. Wilson, F. A. Walker, P. J. W. Kilpatrick, H. E. Sargant, H. D. H. Radford, E. L. Raggett, A. H. C. Score, G. E. Smith, D. T. Summerhayes, E. W. Mynett, W. G. Clayton, J. C. Atkinson, G. M. Carter, I. H. de Wynter, J. V. P. Henniker-Heaton, H. A. Le Bas, M.C., G. D. Maughan, R. G. W. Stark, P. F. Trotter, H. S. Hydes, C. H. Charlesworth, R. A. A. Cobb, L. J. Cotton, W. B. H. Eaton, A. P. Gwynne, C. E. Porter, S. A. Bishop, H. H. Dicken, A. J. Eastwood, W. M. Iles, J. A. I. Rogers, C. Hailey, H. R. Gould, H. E. Ormond, R. P. Clarke, S. O. Crowther, F. R. Dixon, J. T. Ellis, R. Ellis, J. W. Gardner, N. E. Gladwell, E. A. Haines, D. G. Liddle, C. A. McConchie, C. E. Maiden, P. H. Maskell, G. B. Mason, J. E. Mellor, S. H. Owen, G. F. Collins, L. F. Ebbutt, H. Lenton, R. W. W. Palmer, J. Shotton, C. C. O. Stuckey, C. Frowen, A. D. R. Caroe, R. B. Elliott, R. G. Hartigan, A. C. McCartney, J. P. A. E. Sullivan, J. R. Thomlinson, G. Wallas, J. C. Wilson, F. W. Wright, A. P. Godfrey, W. G. Barron, K. S. Douglas, M.C., J. R. Barclay, M.C., S. Cooper, E. R. Evans, I. F. H. Jones, D. F. Martin-Smith, I. S. Morgan, M.C., N. L. Tuckwell, L. E. M. Wells, P. F. Mason, H. A. L. Weeks, J. F. Foggo, J. B. Willis, P. Yeoman, R. F. Archibald, C. C. d'A. Apin, H. S. Bramley, W. E. Comber, A. E. M. Corbett, A. W. Fagan, G. H. Gray, J. P. Hackett, W. J. Halifax, The Hon. E. L. Iiffe, B. M. Ivison, D. N. Kennedy, M.B.E., H. Metcalf, T. G. Poland, M.C., C. K. Squires, H. J. Bratby, A. R. Hewitt, H. W. Gammon, E. T. S. Byass, A. Campbell, J. Ratcliffe-Springall, J. J. Clarke, M. W. N. Bancroft, E. H. G. Evans, C. R. Watson, H. Seymour, F. H. Dean, J. W. Goodison, R. Mc. C. Kilgour, F. M. Mann, R. R. Stuart, T. M. Dowell, L. C. E. Howse, H. G. H. Lowe, J. F. Mead, E. A. Nodin, J. S. Tennant, A. M. Hill, W. A. Lewis, C. J. Metcalfe, E. G. Bigh, T. F. S. Burridge, W. M. Elverston-Trickett, J. A. Gibson, E. F. E. Hammond, J. E. Hardy, R. H. Hume, H. R. Jones, C. B. H. Lefroy, F. Smith, M.B.E., E. J. Stanley, J. H. Ligertwood, H. G. Donald, C. D. MacWilliams, J. A. Bright, A. E. Allan-Taylor, J. A. Beckford-Ball, J. N. Britton, R. Carnie, H. S. Chalk, R. J. K. Chattey, W. J. Cornish, E. N. Driver, E. T. King, G. C. Lees, E. V. Mayer, F. R. Milne, O. G. Simpson, G. St. P. WeMs, R. H. F. Whiteside, E. Whittingham, C. R. Crickmay, R. C. Norris, E. P. Ward, C. H. Ward-Jackson, Lord P. F. A. Brownlow, E. B. Johnson, H. I. Willis, K. H. Bain, E. Fowler, W. Biddle, R. F. V. Britnell, E. H. Cuthbert, E. H. Dunn, J. W. Fairbrother, S. F. O'G. Haslam, G. W. Latimer, E. W. Stonehouse, H. P. White, M.C., F. R. E. Clark, H. G. Suddards, P. G. Ashwin, N. F. W. H. D'Arcy, E. W. Sykes, J. L. Ward, C. A. Maie, W. Hemingway, M. M. F. Wingate, T. Jenner, A. W. Major, A. F. Vigor, H. H. Norris, E. D. Pitman, G. B. Sambidge, H. H. Goddard, C. W. Coaten, G. F. Fenwick, J. H. Kimber, G. H. C. Mackay, E. F. W. Truscott, S. R. J. Addison, G. F. H. Page, C. R. Payne, J. R. M. Brunton, G. S. Corcoran, C. H. Dredge, A. D. Evans, D. Gardiner, C. M. Gold, E. V. Pearce, S. H. Rogers, J. R. Sherburne, C. H. Waghorn, E. T. Webster, J. A. Yonge, D.F.C., R. S. Randolph, C. E. Mallam, R. W. Hanner, M. R. Hastings, E. H. Hobday, T. O. D. Steel, A. L. Owen, J. W. Gossage, W. S. R. Brooke, C. H. C. Brown, E. Cawston, B. R. Catchside, E. C. DeRougement, R. I. Fowler, S. H. Garside, G. E. J. Gilbert-Green, E. M. Heron, A. N. Hoole, S. N. Pike, D.F.C., J. D. Paul, J. A. P.owman, L. R. Ray, P. G. Rossel, E. Sankey, H. R. J. Sprinks, J. G. Strangman, A. M. Wallace, L. C. Lake, H. E. Byfield, A. W. C. Barr, K. V. Blinkworth, P. M. Heffernan, A. Lever, J. W. Limmer, W. E. Witcher, G. W. Butcher, A. F. H. Crust, J. H. Darville, C. G. H. Galloway, C. E. Gardner, F. W. Goldie, L. O. Hockey, S. G. G. Humphreys, R. D. Hyem, T. H. Wilson, W. J. Witham, R. L. W. Rons, G. C. Sturgis, R. Woodhouse, E. P. Duncan, T. H. Cotton, A. D. McLean, W. H. Bennett, G. E. Brice, R. A. G. Edwards, B. W. Goddard, B. J. Griffith, E. L. Hayward, G. D. Johnson, A. H. Kendall, J. C. MacLennan, C. L. Malcolmson, J. D. Marvin, R. A. Ratcliffe, R. O. G. Waters, G. H. White, S. B. Wilford, R. B. Williamson, F. C. Burton, W. T. Devereux, R. P. Levy, H. L. Nalty, L. B. Petley, S. L. Price, J. C. M. Tucker, A. F. C. H. Chaplin, E. O. Colcutt, J. H. E. Curling, A. P. Firth, B. B. Gillis, J. R. Purdy, H. Quindlan, B. M. Walter, P. F. O. Clarke, A. V. Britnell, G. P. Hacking, M.C., N. L. Melhuish, Hon. O. T. Farrer, R. M. Dougan, J. C. G. Gibson, O. A. G. Jackson, K. B. Wild, C. P. Zorab, A. J. Brandon, J. H. Donofield, R. J. H. Melhuish, E. N. Partington, G. F. Ridgway, M. E. Colgan, S. R. Connor, F. V. Coppewheat, R. W. Draper, I. S. Edwards, J. V. Healy, A. B. Laitthwaite, S. E. Lezard, A. R. Macmillan, D. F. MacRae, B. W. Mulrenan, D. Nicolson, J. F. Parsons, J. N. Shaw, A. E. G. Steele, F. Taylor, L. F. W. Thompson, A. Young, N. F. Harris, D. G. Carter, D. Davis, A. M. Dawson, M.C., G. A. Hoffman, R. V. Palmer, J. F. Ginnett, A. K. Allen, P. H. B. Burgoyne, H. K. Calford, E. M. H. Heanley, H. H. Keen, R. M. Kirkpatrick, J. Lord, R. H. Mathias, D. G. Moore, T. H. Nichols, V. Purvis, A. B. H. Reed, G. M. F. Stow, Hon. R. M. Watson, H. F. Wicks, T. R. Williams, E. S. B. Woolmer, C. E. Newman, W. S. Tinsley, L. H. Fletcher, J. R. Lofthouse, H. G. Phillips, G. H. M. Standing, R. F. T. Paterson, H. W. C. Davies, H. B. H. Dickinson, G. M. W. F. Fox, S. R. Painter, A. L. Swinton, W. F. Woodcock, R. M. Dewey, A. G. McCulloch, J. E. C. Slagg,



SEPTEMBER 13.—Part of the Focke-Wulf aircraft works at Neuenland, near Bremen. The buildings appear to be well camouflaged.

R. A. W. Bicknell, M.C., O. G. L. P. Powell, G. N. Anderson, A. W. Walker, J. H. Holland, M.B.E., B. L. V. Chew, R. B. Cross, J. P. Davie, R. V. Dawson, S. E. Ellis, F. E. Gilder, G. D. Hadwen, G. N. Hutchings, F. B. Lane, D. L. Partington, J. S. Streater, P. A. Thorogood, P. W. S. Waddington, N. Welch, A. Sturrock, R. N. Hawes, S. R. Cooper, M.C., D. H. Skinner, C. Bartlett, H. H. Apted, J. A. H. Hortic, A. J. C. Hoskyns-Abraham, G. H. Roberts, H. A. Thirkell, W. E. Bennett, G. Bowers, H. G. E. Greville, L. B. Hudson, O. C. Payne, B. S. Phillips, E. Rhodes, R. W. Brayne, H. J. Eley, R. A. L. Maltby, I. H. Mason, E. W. Roythorne, M. A. Tomlinson, H. E. Trett, F. B. Taylor, R. E. Sellers, R. A. P. Vallee, H. F. Bathurst-Brown, G. T. Bridgwater, A. J. W. Giles, E. H. Sharp, E. N. Wanklyn, A. R. Watson, J. McE. Bowie, W. P. Bowles, R. D. Boyd, J. R. Chamberlain, R. R. B. Chilcott, L. I. Cockerham, C. W. H. Crook, M. Finkell, A. W. Geddes, E. M. Griffin, A. W. Harrison, N. R. G. Hunter, R. A. Johnson, W. T. Jones, C. E. Kennedy, A. F. Kind, L. F. Miller, J. H. Rowse, L. Rowson, L. F. P. Walters, E. G. K. Weakley, D.F.C., J. L. Williams, J. F. Yeo, G. A. Becker, W. F. Davis, V. A. Jackson, W. N. Pomphrey, D. H. Robinson, J. A. Rushton, A. I. Braid, G. E. Daniei, P. de Haan, J. A. French, Baron Kinross, H. O. Leighton, J. S. Machin, A. D. Makins, D.F.C., J. L. Norris, G. A. M. Scott, W. H. Still, L. R. Wager, C. L. Wallace, J. H. Bastable, L. F. S. Abbott, J. F. Affleck, D. B. McDonald, F. E. M. Puxon, E. M. Smedley-Aston, W. J. B. Whiteway-Wilkinson, N. Wilkinson, B. A. Williams, G. H. de B. Wyllis, V. O. Adey, R. J. Bond, A. R. Carfrae, R. C. Cary, G. F. C. Haiahan, J. A. Hatton, C. L. Henn, F. P. Loftus, H. G. Matheson, W. H. Allen, J. C. Rattle, B. E. Chance, C. W. Fordham, B. H. Higgins, S. C. Howes, A. P. Leigh, C. H. V. Longley, T. A. Pitt, H. D. Roe, D. G. Skegg, G. I. Thomas, R. J. Tremayne, R. H. Truman, K. Turnbull, F. Wilders, J. W. Wright, H. Austin, A. J. Bridge, J. D. L. Gammie, J. A. P. Martin, D. A. Parrott, E. S. Dawkins, J. H. Bromfield, A. G. Brown, F. T. Cooke, S. Pike, L. D. Jasper, A. R. Barr, F. C. J. Carpenter, A. L. Day, J. J. Harris, T. Ness, L. E. Saxby, A. C. Castle, G. D. Cheyne, T. A. Cunliffe, H. T. B. Dew, W. H. Furness, J. A. Green, N. H. Kaye, I. H. Kerr-Cross, G. E. Dance, G. F. Bullock, H. Claye, C. L. J. Garrard, L. C. Horsler, R. D. Hunnam, J. T. Lowe, C. W. Roebuck, H. G. Bentley, J. L. Bisset, R. H. Dawson, J. A. Fox, E. G. T. Lowe, C. M. Wilson, H. J. G. Wolf, L. C. Cole, T. F. Mitchell, E. L. Robinson, J. R. Atkinson, C. M. G. Bolton, R. W. Boone, G. H. P. Buchanan, J. G. Coombes, F. W. Davies, S. H. Fitch, E. H. Goodison, H. J. Gray, C. Hackforth-Jones, J. G. Hart, P. C. Kendall, N. Lyons, W. H. McNeile, K. W. Malkin, J. A. Odam, G. J. Paddock, J. E. H. Park, G. A. McK. Phillips, D. A. Pope, R. Porter, C. H. Smith, R. M. Stephenson, W. Thomas, C. P. G. Wade, C. R. Ward, J. M. Watt, A. G. Welton, W. S. Wiggiesworth, N. Woods, J. G. Barr, R. G. Carr, H. V. Caunt, F. S. Prior, N. H. Archer, R. Greville-Heygate, J. N. Marchbank, R. B. C. Pickiner, J. C. Rawlinson, M. C. Corner, E. Cohen, T. A. John, C. S. Abbott, T. W. Bagshawe, P. A. Compeyron, J. B. Cookson, J. Denny, A. C. Elliott, A. J. D. Eton, A. C. Forbes, E. H. Frost, L. M. Gower, C. D. Heriot, D. S. Macfarlane, A. S. Melville, T. W. Sherratt, J. S. Trotman, C. S. Willmott, R. R. Wilson, R. C. Williams, S. Alder, L. H. Humpherson, S. S. Fuller.

EQUIPMENT BRANCH.—Sqn. Ldrs. to be Wg. Cdrs. (temp.):—Sept.: R. F. Wilson, J. H. Thacker, V. F. Williams, H. Sadler, J. Rodger, D.S.M., H. F. S. Lowthorpe-Lutwidge, R. D. Lambert.

Flt. Lts. to be Sqn. Ldrs. (temp.):—Sept.: J. W. J. Bates (Sen. Mar. 1), C. A. Smith, F. D. Wheeler, H. J. Lucie-Smith, D. J. Rouse, A. E. L. Cooper, E. D. W. Mercer, M. W. Fuller,

F. H. Whiteley, E. R. Turner, F. Williamson, C. E. Wratten, J. Robertson, J. F. Hinks, L. N. Saw, L. J. Ryall, F. J. Mills, E. G. Cooper, R. B. Howard-Rice, S. C. Bucknall, N. M. Walker, R. E. Fearn, B. H. Ellis.

Flg. Offs. to be Flt. Lts. (temp.):—June: E. A. Pratt, Sept.: H. G. Scott, J. Parsons, B. W. P. Green, T. F. Griffin, G. S. de Freitas, B. H. Miller, H. Ridley, H. Pattinson, J. H. Whewell, J. H. Becker, E. W. Poppy, A. G. Adams, E. A. Ball, J. F. Cardno, S. R. Holt, C. L. Hurs, P. D. May, A. G. Moulte, E. O. V. Mulley, A. Phillips, E. G. Plum, W. G. Turnbull, F. A. Addison, J. W. Fleming, A. G. Heath, J. V. Judge, K. S. Wimbush, L. J. Halley, R. A. Hyde, A. S. Orr, R. F. P. Landon, M. E. Longman, W. J. Nave, T. G. Nicoll, J. E. C. Botham, G. C. Marshall, W. A. Howitt, E. B. Pope, E. J. Finch, L. T. Gyax, S. E. Smith, H. F. Peiham, R. G. Spillam, J. R. U. Hatton, A. E. Sansom, H. F. G. Tristram, G. W. Livingston, G. A. Smith, J. G. Elliott, J. J. Brown, W. T. Selley, J. Cumpling, L. C. Woodcock, C. A. E. Andrews, W. G. Ball, J. H. Barker, P. M. Butler, A. A. Christian, A. W. Clarey, F. A. Cleary, F. Cockroft, E. R. Corbett, L. Courts, J. Cummings, G. P. Daniels, F. L. Dibben, C. P. Dickinson, W. S. Dyer, Hon. F. A. I. Eveleigh de Moleyns, J. E. Garrett, J. G. Glasgow, E. A. Goodwright, G. H. Gray, G. A. R. Green, O. A. Hacking, H. H. Hartley, W. O. Helm, C. J. Hemming, C. J. L. Herbertson, H. E. Hill, W. S. Holderness, J. Hollingsworth, J. C. Hughes, G. H. Jackman, C. B. Jewson, V. J. Kempner, W. A. Layng, J. Leadbeater, W. E. Lovesy, W. S. McClare, J. K. MacDonald, M. W. Maxwell, E. E. Miller, J. Milton, G. P. Morley, M. E. Nalty, K. D. Neil, H. Newell, G. H. Opitz, R. F. L. Palmer, K. G. Pearce, P. C. Purser, B. Raine, G. H. Ramsay, G. F. Raynor, N. G. Reeves, K. F. Rowson, Q. H. L. Saltmarsh, W. G. Sanders, W. H. Sands, W. H. Sawtell, H. S. Shears, K. F. Simmonds, R. G. Smart, S. H. Smiles, O. J. Swanson, N. E. Terry, D. R. Venables, L. J. Watts, E. N. Wernher, I. F. U. Williams, L. S. B. Williams, R. A. Williams, L. Woodhead, W. A. S. Alexander, K. M. Bryan, S. W. Dalton, H. C. Fairbrother, R. Follett, E. C. Gibbs, V. Heaton, B. A. Johnston, A. C. Jones, W. King, J. C. Lindsay, T. Mitchell, W. J. Nicholas, C. H. Norris, J. S. Poynder, N. E. Radcliffe, H. U. C. Rhodes, W. T. R. Richman, K. A. N. Roberts, A. W. C. Sawyer, R. F. Strange, D. A. Turner, B. A. Van Zwanenberg, W. J. R. Warren, J. A. H. Brooke, D. S. G. Coram, R. Efstathlou, E. L. Murrell, W. W. Stabb, D. Baber, F. W. Hornbrook, D. P. Blatherwick, J. T. Herbert, S. Proctor, L. A. Willington, J. A. Paul, F. J. D. Pring, D. W. Willington, W. G. Clegg, A. D'A. Anderson.

ACCOUNTANT BRANCH.—Flg. Offs. to be Flt. Lts. (temp.):—Sept.: S. E. Phillips, A. W. Shand, E. H. Page, B. M. Hatfield, L. G. Crosby, R. H. Wood, J. B. Sidford, D. P. Lund, E. W. B. Lewis, A. L. Thompson, R. W. Goodburn, R. F. Maggs, J. H. Henderson, A. W. Brennell, G. T. Bradshaw, R. Salomonsen, H. W. Wilson, R. H. Wills, K. V. Moss, H. M. Tiller, M. V. Baxter, G. F. H. Armson, D. V. C. Burgess, J. A. B. Boyd, J. Fry, S. Shield, A. W. Garnett, J. E. Simpson, G. J. H. Horne, J. R. Robertson, W. L. Rowland, D. K. Walker, A. E. Brown, J. M. Bailey, D. A. Marten, E. B. Beck, M. S. Dennis, R. Innell, R. Boughy, G. Wright-Anderson, C. H. Nicholson, E. Cantrell, J. E. Bilton, A. L. Woodridge, P. Green, H. R. Hunt, G. T. Jones, W. H. Wilks, G. Ruthven, M. J. McRobert, H. G. North, S. Beaumont-Smith, A. Blain, A. E. Bouch, H. Eason, J. F. Humphreys, G. C. Millichamp, B. E. Nichols, G. A. Puzey, N. W. Harper, E. M. Watkins.

MEDICAL BRANCH.—Flt. Lts. to be Sqn. Ldrs. (temp.):—Sept.: J. A. Mains, L.R.C.P. and S., L.R.F.P. and S.; W. Heath, M.R.C.S., L.R.C.P.; E. G. Dermer, M.B., B.S., F.R.A.C.S., D.L.O.; F. J. G. Jefferiss, M.R.C.S., L.R.C.P.; A. J. Owston, M.R.C.S., L.R.C.P.; B. Haring, M.R.C.S., L.R.C.P., D.P.H.; C. H. Levick, M.R.C.S.,

L.R.C.P.; C. F. H. Sergeant, M.B., Ch.B., M.R.C.S., L.R.C.P.; G. F. Rees-Jones, M.R.C.S., L.R.C.P., D.M.R.E.; R. F. Stubbs, M.B., Ch.B.; M. Pearson, M.R.C.S., L.R.C.P., L.D.S.; T. Crowley, M.B., Ch.B.; R. J. Coto, M.B., B.S., F.R.C.S.(E.); S. K. Sledge, M.B., Ch.B., D.O.M.S.; R. W. Nichol, M.R.C.S., L.R.C.P., M.R.C.O.G.; M. P. Morel, M.B., B.Ch., F.R.C.P., L.R.C.P.; H. B. Hunt, M.D., Ch.B., M.R.C.P.; C. R. McLaughlin, M.B., B.Ch., F.R.C.S.(E.); C. L. Clinton-Thomas, M.R.C.S., L.R.C.P.; C. R. E. Freezer, M.B., B.S., M.R.C.S., L.R.C.P.

ROYAL AIR FORCE REGIMENT.—Sqn. Ldr. to be Wg. Cdr. (temp.):—Sept.: A. G. Jarvis, O.B.E., A.F.C.

Flt. Lts. to be Sqn. Ldrs. (temp.):—Sept.: A. C. Vaughan, H. G. Grace, M.C., C. A. Lewis, M.B.E., D. Maclaren, W. S. Ellis, O. A. Guggenheim, J. S. Hodges, C. W. Mayhew, M.C., A. F. Wharton, C. B. Abbott, F. H. Cowley, M. A. Hale, H. P. Hamilton, A. A. W. Fowler, R. E. H. Gould, J. W. Higgins, T. Oliphant.

Flt. Offs. to be Flt. Lts. (temp.):—Sept.: H. E. Blower, H. S. Newman, T. H. Bryant, H. W. Cherry, H. B. Ware, A. G. Hart, F. V. Jobling, J. L. Purdy, R. Scott, A. W. C. Butler, T. T. Davies, D. A. Clark, R. Bell, K. W. Godfrey, W. W. Hammond, A. Sutherland, M.C., R. M. Sterndale, E. G. Waldy, F. J. A. Tanner, D. E. Wellington, J. G. Warry, P. O'B. Brunner, C. E. Browning, D.S.O., B. N. Cull, A. T. Cannon, O.B.E., M. J. Slee, P. G. Walsh, H. T. Bond, M. Gordon, J. E. D. Manlove, A. F. S. Dolman, W. J. Barclay, M.C., E. H. Briggs, M.C., H. L. Howell, H. A. Hyde, C.I.E., M.C., A. C. Beckett, A. Newman, M.C., D.F.C., E. V. Pemberton, W. G. Gow, J. P. C. Dudley, G.M., R. A. Greaves, C. Glossop, M.C., B. E. Bishop, C. L. Rayment, D.F.C., L. S. Symons, E. L. Eldridge, G. T. Heard, M.C., P. J. Newton, J. H. W. O'Kelly, E. C. Simond, N. N. E. Bray, O.B.E., M.C., A. W. Cant, D.C.M., C. A. Muscat, M.C., H. Collison, R. W. Nash, A. A. J. Wells, G. S. Brook, R. F. James, J. D. P. Watney, R. S. Beaumont, C. A. Briggs, J. Dolby, R. R. Rochat, A. M. Carrie, C. L. Evans, M.C., T. H. Loudon, R. M. Page, E. J. Swift, F. H. Usher-Smith, F. H. Fradd, G. E. Lowell, J. A. Gill, G. J. S. Segar-Owen, C. A. F. Sheppard, T. J. Tarry, S. T. D. Wallace, V.C., G. H. Wilkinson.

AUXILIARY AIR FORCE

GENERAL DUTIES BRANCH.—Wg. Cdr. to be Gp. Capt. (temp.):—Sept.: A. D. Farquhar, D.F.C. (Sen. June 1).

Sqn. Ldrs. to be Wg. Cdrs. (temp.):—Sept.: W. J. Leather, D.F.C. (Sen. June 1), Hon. M. Aitken, D.S.O., D.F.C., W. B. A. J. Keppel.

Flt. Lts. to be Sqn. Ldrs. (temp.):—Sept.: C. B. Thompson, A. H. H. Tollemache, G.C., W. A. Brown.

TECHNICAL BRANCH.—Flt. Lt. to be Sqn. Ldr. (temp.):—Sept.: A. T. Lee.

BALLOON BRANCH.—Flt. Lts. to be Sqn. Ldrs. (temp.):—Sept.: E. C. Lawledge, H. C. Radcliff, R. L. Huins, R. J. Baker-Wilbraham, P. D. Tucket, E. W. Ward, J. C. Fitzgeorge-Parker.

Flt. Offs. to be Flt. Lts. (temp.):—Sept.: S. H. Holland, G. Coppock.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—Sqn. Ldr. to be Wg. Cdr. (temp.):—Sept.: J. G. Hudson.

Flt. Lts. to be Sqn. Ldrs. (temp.):—Sept.: E. Clayton, E. J. Smart.

Flt. Offs. to be Flt. Lts. (temp.):—Sept.: J. S. Schilling, N. S. Todd, H. P. Taylor.

MEDICAL BRANCH.—Sqn. Ldr. to be Wg. Cdr. (temp.):—Sept.: F. G. Mogg, G.M., M.R.C.S., L.R.C.P.

Flt. Lts. to be Sqn. Ldrs. (temp.):—Sept.: G. A. H. Norman, M.B., B.S., M.R.C.S., L.R.C.P.; B. Rothery, M.B., B.Ch., M.R.C.S., L.R.C.P.; W. W. Walker, M.B., Ch.B.

AUXILIARY AIR FORCE RESERVE OF OFFICERS

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—Flt. Lt. to be Sqn. Ldr. (temp.):—Sept.: H. C. Newhouse.

WOMEN'S AUXILIARY AIR FORCE

The folg. promotions are made:—
Sec. Offs. to be Flt. Offs. (temp.):—Sept.: D. H. Deane, G. M. P. Morgan, B. B. McKillop, J. D. McKay, H. K. Dawson, I. McC. Watson, C. J. H. Stewart, P. H. Trubshawe, L. E. V. Delves, D. M. Taylor, C. I. M. Fuller, P. I. Lawrence, E. J. C. Train, Lady D. Bowhill, F. D. Deane, M. S. Lambie, J. A. Shuldham-Legh, E. L. E. Smith, J. A. Bannatyne, A. L. Dawson, M. I. Fuller, G. M. I. Rawsay, E. M. S. Olsen, R. D. Mould, S. L. Jones, J. C. Kingsford-Lethbridge, E. M. Judson, M. V. M. Thompson, M. H. Grierson, L. A. Robinson, K. E. Bagley, M. E. G. Maclean, V. Russell, J. M. Wrigley, R. S. Ross, S. Peek, M. E. K. Wherry, J. Pilgrim, H. L. M. Gibbs, D. E. Roxburgh, A. B. Morris, M.B.E., S. M. Laidlaw, N. E. M. Raymond.

Air Ministry, October 2, 1942.

ROYAL AIR FORCE

GENERAL DUTIES BRANCH.—Flt. Off. (prob.) E. Mayne confmd. in appt. and to be Flt. Lt. (war subs.). Aug.

Plt. Offs. (prob.) confmd. in appts. and to be Flt. Offs. (war subs.):—June: L. A. Clark (Sen. Dec. 7, 1941), J. A. Bulcraig, D.F.M., M. H. Farmer, July: A. A. Rollo, A.F.C., D. B. Halcro, D.F.C., G. W. T. Hossent, B. Bardega, D.F.M., E. Strachan, T. W. J. Hatton, D.F.M., J. F. Marshall, S. J. Arnfield, Aug.: C. Chrystall, V. L. Gotham, W. K. Branch, A. E. Palmer, N. H. Wilson, R. G. Bullock, N. T. Evans, J. D. L. Hall, D.F.M., T. G. Smith, J. E. Tate, C. P. Townley.

Gp. Cpts. (temp.) granted the rank of Wg. Cdr. (war subs.):—Sept.: J. Warburton, J. D'A. Keary, H. W. Pearson-Rogers, G. Bartholomew, R. H. Donkin, O.B.E., H. J. G. E. Proud, R. R. Nash, A. A. Wheeler, N. R. Buckle, M.V.O., N. C. Pleasance.

Wg. Cdrs. (temp.) granted the rank of Sqn. Ldr. (war subs.):—Sept.: F. L. Newall, R. N. Cook, C. G. Isacke, G. F. Watson-Smyth (Capt. D.C.L.I.), O. E. Slee, A.F.C., W. M. Brisdee, J. R. Davenport (Lt. R.A.), H. B. Johnson, R. J. P. Prichard, A.F.C., C. H. Simpson, A. M. Taylor, V. C. Darling, A. M. Bentley, W. P. Shand, W. H. Ingle, P. M. Astley, J. H. Humphris, R. J. M. Bangay, H. R. Goodman, M. G. F. Pedley, J. H. Greswell, D.F.C., C. E. Drapper, K. Slater, J. R. I. Bell, P. A. Tipping, D. J. McGlinn, J. Butterworth, B. G. D. Nathan, E. M. Ware, D.F.C., B. J. Sandeman.

Flt. Offs. to be Flt. Lts. (war subs.):—Apr.: R. A. Lenton, July: D. R. Keenan, E. V. Lawson (2nd Lt. The King's R.), C. M. Price-Owen (2nd Lt. R.A.), M. DeL. Wilson (2nd Lt. Dorset R.), Aug.: L. Graves, D.F.C., R. M. McT. D. Lucas, B. L. Duigan, D.F.C., R. M. Martin, G. B. Gillie (Sen. Aug. 14), M. Papworth, A.F.C. (Sen. Aug. 19), R. G. Honeyman (Sen. Aug. 21), E. Bailey (Sen. Aug. 19), W. R. Haskell, D.F.C. (Sen. Aug. 21), Sept.: J. G. Strauss (Sen. Aug. 19), N. P. Simmons.

Flt. Off. L. Lewington to be Flt. Lt. (war subs.), May (Sen. Feb. 21). (Subs. for notifi. of July 3)

Plt. Offs. (prob.) to be Flt. Offs. on prob. (war subs.):—Apr.: R. T. Langton, D.F.M., R. Woodhouse.

TECHNICAL BRANCH.—Plt. Offs. (prob.) confmd. in appts. and to be Flt. Offs. (war subs.):—May: R. J. Robinson (Sen. Mar. 3), July: A. W. J. Foley (Sen. June 16), Aug.: A. C. Beattie (Sen. June 16).

Plt. Offs. (prob.) confmd. in appts., May, and to be Flt. Offs. (war subs.):—Aug.: H. B. Salter (Sen. Apr. 2), J. L. Lendrem (Sen. May '31), A. W. Skingsley (Sen. Apr. 6).

Plt. Off. (prob.) T. A. M. Pritchard confmd. in appt., Aug., and to be Flt. Off. (war subs.), Aug. (Sen. July 23).

Plt. Off. (prob.) A. Thorrell confmd. in appt., Aug., and to be Flt. Off. (war subs.), Aug. (Sen. July 25).

Plt. Off. (prob.) S. F. W. Martin confmd. in

appt., June, and to be Flt. Off. (war subs.), Sept. (Sen. Jan. 24).

Plt. Off. (prob.) D. J. C. Logan confmd. in appt., July, and to be Flt. Off. (war subs.), Sept. (Sen. Aug. 5).

Plt. Off. (prob.) J. H. Spencer confmd. in appt., July, and to be Flt. Off. (war subs.), Sept. (Sen. July 26).

Gp. Cpts. (temp.) granted the rank of Wg. Cdr. (war subs.):—Sept.: C. Rapley, V. G. A. Hatcher, O.B.E., A.F.C., H. A. Evans-Evans, C. A. Bell, J. Marson.

Wg. Cdrs. (temp.) granted the rank of Sqn. Ldr. (war subs.):—Sept.: T. E. J. Fitton, W. Webster, M.B.E., F. J. A. Willis, H. Cadman, A.F.M., W. Squires, A. E. Clayton, A. Marks, D. J. Day, A. G. Williams, F. F. S. Mattingley, F. A. Kirk, W. McCarthy, H. E. Brushwood, F. Stevens, R. Herrick, P. G. G. Begrie, W. J. Scrivener, J. Bradshaw, G. H. Harrison, R. L. Bell, F. H. Catton, W. Moore, H. L. Millyard, M.B.E., L. Davey, M. W. Moore, R. J. Kemsley, L. Maxwell-Muller, J. H. Styles, H. H. Laurie, O.B.E., W. E. Wendon, J. Lindsay, M.B.E., H. J. Macted, D. McLaren.

Flt. Offs. to be Flt. Lts.:—Sept.: D. S. Fisher, M.B.E. (Sen. June 19), E. Plowright (Sen. June 19).

Plt. Offs. (prob.) to be Flt. Offs. on prob. (war subs.):—Feb.: W. C. Clements, Mar.: R. G. Brown.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—May: G. C. C. Lass (Sen. Mar. 21), T. L. Reeves (Sen. Apr. 10), June: D. L. Martin (Sen. Apr. 12), July: J. C. Parry-Jones (Sen. June 15), S. Potterton (Sen. Mar. 25), H. G. Atterwill (Sen. May 13), H. G. Gilbert (Sen. May 20), C. Jordon, T. D. Spener (Sen. May 27), Aug.: W. J. Dunn (Sen. May 11).

The notifi. of May 26 concern, H. W. G. Lyon is cancelled.

The notifi. of June 30 concern, C. H. C. Down is cancelled.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—Flt. Off. (prob.) H. G. Baker confmd. in appt. Sept.

Plt. Off. (prob.) J. Shiland confmd. in appt. and to be Flt. Off. (war subs.), July (Sen. July 10).

Plt. Off. (prob.) H. J. Compton confmd. in appt., June, and to be Flt. Off. (war subs.), Aug. (Sen. July 5).

Plt. Off. (prob.) W. P. Palmer confmd. in appt., June, and to be Flt. Off. (war subs.), Aug. (Sen. July 1).

Plt. Offs. (prob.) confmd. in appts., June, and to be Flt. Off. (war subs.):—Aug.: T. Molloy (Sen. July 5), F. B. Sykes (Sen. July 19).

Plt. Off. (prob.) F. E. C. Roberts confmd. in appt., July, and to be Flt. Off. (war subs.), Sept. (Sen. July 16).

Flt. Off. P. F. Picton to be Flt. Lt. Aug.

Plt. Off. (prob.) E. F. Long to be Flt. Off. on prob. (war subs.), May.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—Sept.: R. C. Flowerdew (Sen. Aug. 22), Aug.: E. C. Ireland (Sen. Jan. 13), Sept.: E. C. Robertson (Sen. Jan. 12), L. J. Mitchell (Sen. Feb. 6), A. C. Wyatt (Sen. Feb. 6), H. G. Welland (Sen. June 15), R. G. Moffat (Sen. July 27), G. R. Raylor (Sen. Aug. 18), A. E. Bacon (Sen. Feb. 3), B. F. Price (Sen. Aug. 30).

EQUIPMENT BRANCH.—Wg. Cdrs. (temp.) granted the rank of Sqn. Ldr. (war subs.):—Sept.: T. A. G. Hawley (ret.), J. Hobbs (ret.), C. J. Polden (ret.), J. R. Gardiner (ret.), R. G. Sims (ret.), L. T. Sanderson, D.S.M. (ret.), R. F. Folley, D. H. M. Graham, J. E. Garwood, F. G. Metcalf, R. W. Ware, J. W. Lamb.

Sqn. Ldrs. (temp.) granted the rank of Flt. Lt. (war subs.):—Sept.: J. B. Conolly, A. McI. Peacock, J. W. Noble, N. B. Silk, D. Stuart, E. Towers, R. W. Clark, J. B. Quarrington, D. H. Wood, J. Hamilton, R. W. Head, J. M. Howard, 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, S. R. W. Amor, E. M. Sopwith, A. P. H. Slogrove.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—Sept.: J. E. Smith, J. H. Thorpe (Sen. Apr. 2).

ACCOUNTANT BRANCH.—Flt. Off. (prob.) R. D. Thomas confmd. in appt. Aug.

Plt. Off. (prob.) E. R. S. Fendick confmd. in appt., June, and to be Flt. Off. (war subs.), Aug. (Sen. July 4).

ROYAL AIR FORCE REGIMENT.—Plt. Off. (prob.) C. J. Hickton confmd. in appt., Aug., and to be Flt. Off. (war subs.), Oct. (Sen. July 12).

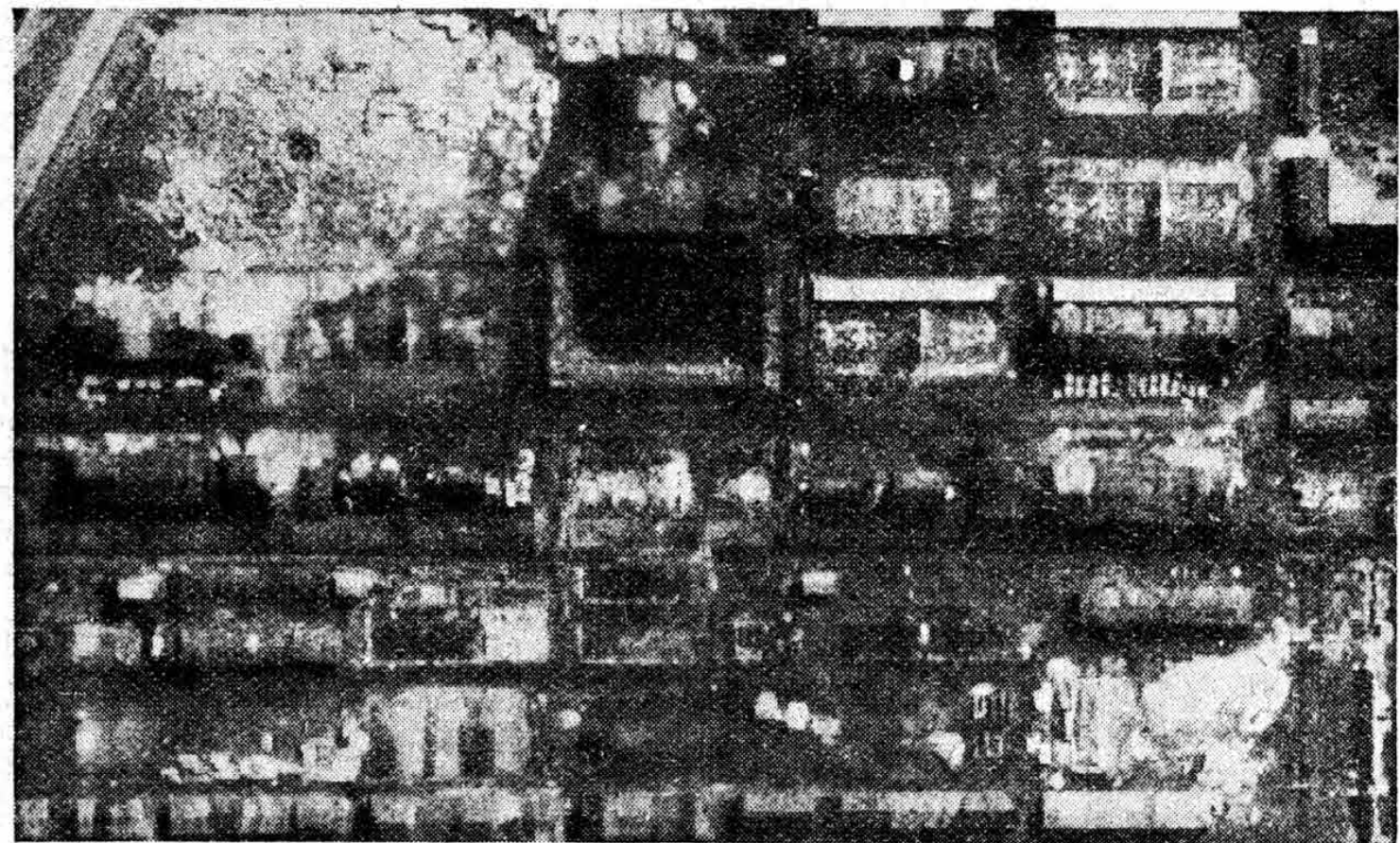
RESERVE OF AIR FORCE OFFICERS

GENERAL DUTIES BRANCH.—Wg. Cdrs. (temp.) granted the rank of Sqn. Ldr. (war subs.):—Sept.: J. A. Field, A.F.C., M. W. B. Knight, D.F.C., A. D. Annand, G. F. P. O'Farrell, H. R. Black, A.F.C., C. L. Gomm, D.F.C., E. G. Jones, D.S.O., D.F.C., J. B. Burnett, G. D. Jones, D.F.C., W. H. Biddell, D.F.C., P. Hadfield, B. E. Dobb, R. B. Brown, E. P. P. Gibbs, D.F.C., G. P. Seymour-Price.

The folg. are granted the rank of Sqn. Ldr. (war subs.):—Sqn. Ldrs. (temp.): Feb.: B. J. E. Lane, D.F.C. June: J. D. Warne, D.F.C. July: E. C. LeMesurier, D.S.O., D.F.C., E. J. Morris, D.S.O., G. P. Gibson, D.F.C., B. R. O'B. Hoare, D.F.C., Flt. Lt. F. J. Letzer (Subs. for notifi. of Sept. 11).

EQUIPMENT BRANCH.—Wg. Cdr. (temp.) J. H. Bentham is granted the rank of Sqn. Ldr. (war subs.), Sept.

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



SEPTEMBER 14.—The same area of the Focke-Wulf factory as that shown on the previous page, after a visit from the R.A.F. The crater in the top left-hand corner is about 15 feet across and the area of damage extends about 70 feet in all directions.

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

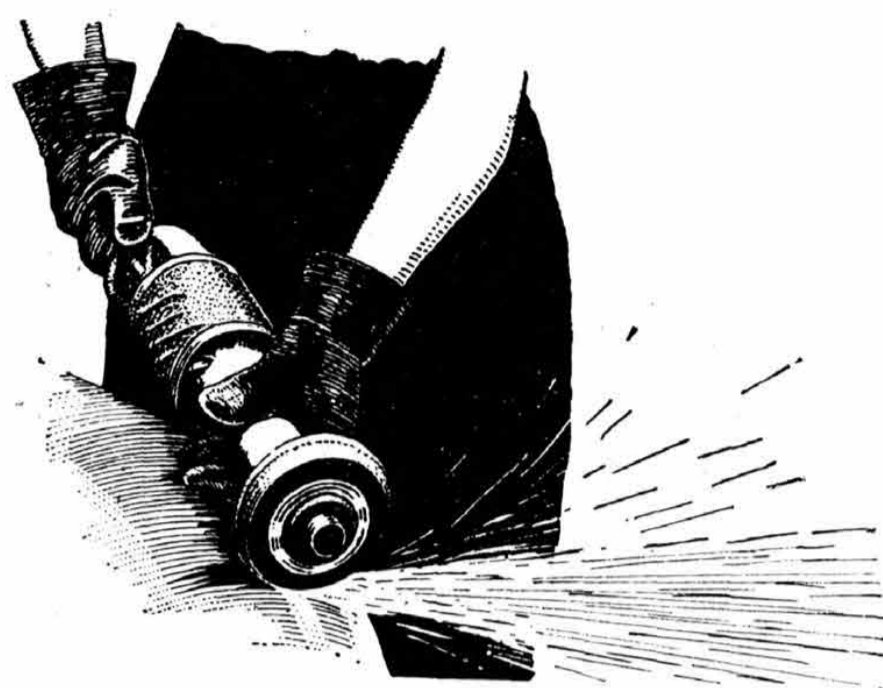


GLASS BLOWING



Lightness... and Strength

... the lightest structural metal is
MAGNUMINIUM
by MAGNESIUM CASTINGS & PRODUCTS LTD
SLOUGH



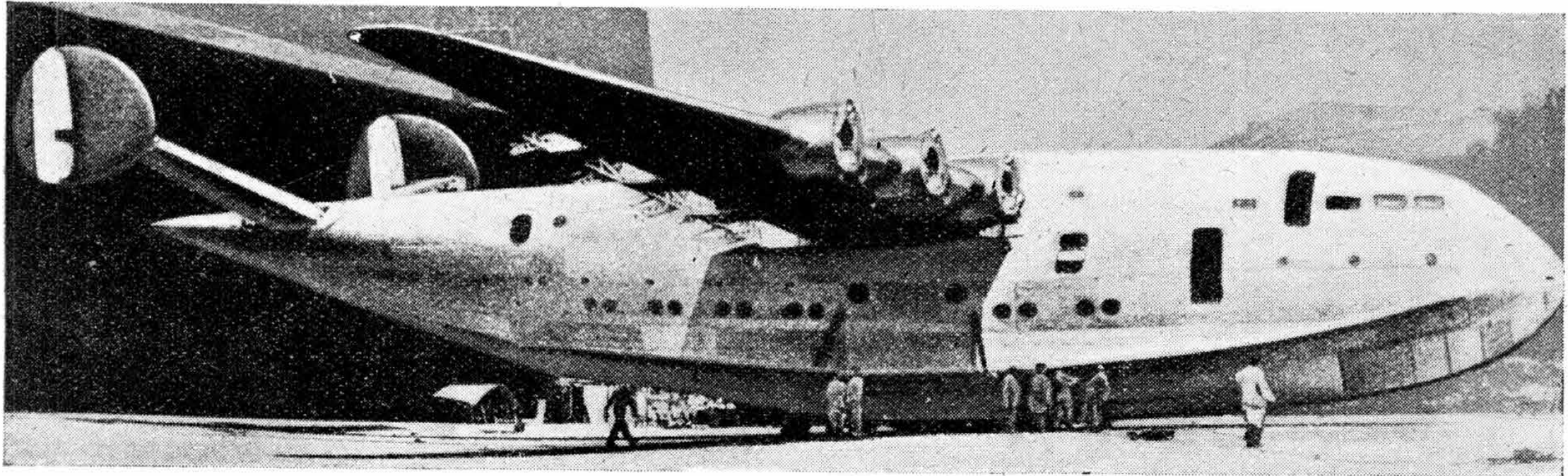
down to the ground...

is one of those all embracing expressions which appeals to us because it implies a complete fitness for something or other, and the something in our case is engineering production work. Every phase of it suits us, from the high altitudes of technical planning down to the ground level of the smallest manual operations. Mark you, in spite of our insatiable energy, we do not consider our work to be a grind. We are enthusiasts, therefore difficulties merely add zest to our labours instead of impeding us. By giving the full benefit of our system to every contract we receive we keep more than our noses to the grindstone — and to a very good purpose as those who value efficient workmanship and timekeeping are aware.

METALAIR

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AIR TRANSPORT



A VICHY FISH.—The SE.200, originally known as the LeO H49, ready for launching in Vichy France. It has six Wright Double Row Cyclone motors, accommodation for 40 to 70 passengers, an all-up weight of 145,200 lb., a range of 3,726 miles and a cruising speed of 186 m.p.h. It was originally designed in 1937.

The Lockheed Constellation—C-67

FORTY Lockheed Constellations, which have been given the U.S. Army transport designation C-67, are being built by the Lockheed Aircraft Corporation.

The Liberator Transport

A TRANSPORT VERSION of the Consolidated B-24 Liberator is being built in large numbers at a new Consolidated factory in Texas on a mechanised assembly line which is said to be the longest in the World. Modifications include an unglazed nose, the removal of the gun turrets, provision of windows in the sides of the fuselage where the bomb bay was located and a navigator's hatch on the top fuselage deck.

The Liberator transport is said to be capable of carrying a maximum cargo load of more than 10 tons and to have a maximum range of nearly 4,000 miles. The four motors are equipped with turbo-superchargers.

Competition in Sweden

SVENSKA-LLOYD, the Swedish Shipping company, has announced that it intends to operate a regular air service between Gothenburg and London so soon as the War situation allows. The Company has asked the Swedish Government for a licence to operate a daily service in each direction.

L.A.T.I. Equipment for the U.S.A.

SIX SAVOIA-MARCHETTI tri-motor aeroplanes belonging to L.A.T.I. in Rio de Janeiro were bought by the U.S. Defence Supplies Corporation when the Italian company's services across the Atlantic from Rome to Rio de Janeiro were stopped early this year by Brazil. The machines are being overhauled by Pan-American-Grace Airways at Lima, Peru, and are expected to be flown to the U.S.A.

According to "American Aviation" of Sept. 1 the U.S.A. did not get a bargain in this equipment, which is described as "not much above the 'junk' category, especially without spare parts." The six machines are said to be powered with Alfa-Romeo motors of about 800 h.p., but each machine is a different type and the all-up weight varies from about 22,000 lb. to 34,000 lb. They are said to be good for freight carrying, but not for passengers; to be slow, but good for long-range operations and payload is reported to be "not bad."

Italy began its South Atlantic service in December, 1939, with 11 S.M. 83s (three 750 h.p. Alfa-Romeo 126 R.C. 34 motors), eight in service and three in reserve. Two versions of the S.M. 83 were built for the South Atlantic; the S.83A for the continental sections of the route with six passengers and 2,200 lb. of mail at an all-up weight of 26,730 lb. and the S.83T for the Atlantic crossing with 1,100 lb. of mail and a loaded weight of 26,730 lb. Both are believed to have cruising speeds of 248 m.p.h. on 70 per cent. of power.

Traffic figures for the first two years of operation on the South Atlantic route, published by L.A.T.I. recently, show that a total of 211 ocean crossings were made with 424 passengers, 69.7 tons of mail, and 129 tons of freight. A total of 2.6 million kms. were flown.

Wanted—An Anglo-Canadian Air Mail

THE NEED for a trans-Atlantic air mail service to be established by the British and Canadian Governments has been stressed by Col. Mulock, Canadian Postmaster-General, who returned to Canada from a visit to Great Britain on Oct. 14. Col. Mulock was referring to mails for the Canadian Forces overseas and said that the capacity on the Atlantic air mail services operated by the U.S.A. was strained by the increased volume of mail for the American Forces overseas. The space available for Canadian mail on these services was limited.

The Postmaster-General in London announced recently that because of the weight of the traffic air mails for Canada, the U.S.A., and beyond, had sometimes to be sent by sea and that the trans-Atlantic air mail should only be used for the most urgent correspondence.

Replaced Airgraphs

DUPLICATES of the Airgraphs which were on board the flying-boat Clare when it was lost in September have now been received from the countries of origin and delivered to the addressees. A similar course is to be adopted in future as a normal arrangement in the case of Airgraphs lost in transit. Provision for such emergency has always been made by the Airgraph Section of the G.P.O. since the Airgraph service was first introduced.

Light-weight wooden boxes are now being used instead of the former metal containers for carrying airgraphs, and an extra 100 letters have been added to each roll of film. Each film now holds 1,600 letters and weighs, in its case, 5 oz.

Anxiety About Air Transport

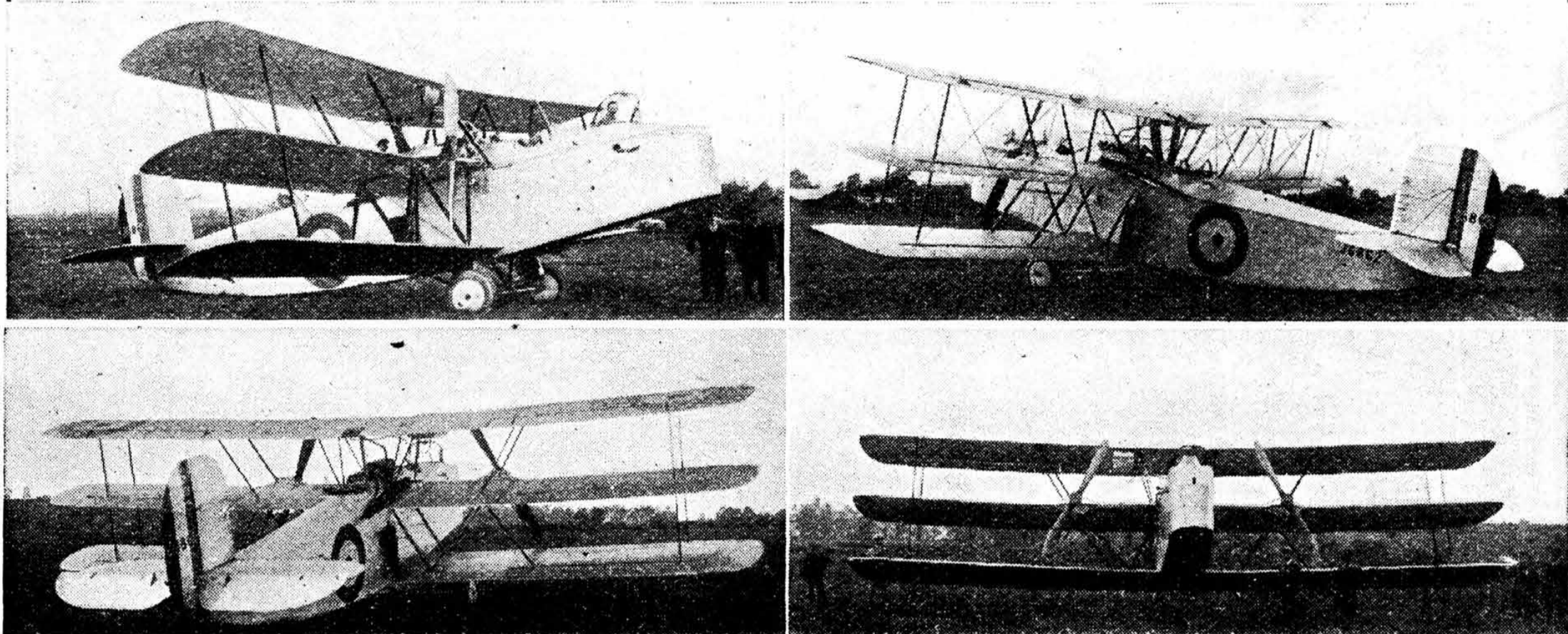
A SERIES of articles dealing with the future of Air Transport and, in particular, British Air Transport, is being published in the weekly magazine "Great Britain and the East." The main theme is that air transport on a large scale is essential during the War and, that if British Air Transport is to exist on a scale proportionate to the needs of Great Britain and the Empire, the groundwork for post-War air services should be laid now.

No really concrete proposals have as yet been put forth in the articles, but an editorial in the issue of Oct. 31 insists rightly that the question of a policy for British Air Transport is urgent. Some uneasiness is expressed at Captain Balfour's statement in the Oct. 3 issue that for two or three years after the War, Great Britain would have to make do with converted military aeroplanes. The editorial advocates placing British Air Transport under some other authority than the Air Ministry and states: "Finally, the British aircraft industry must be placed in a position in which its designers, whose genius produced the World's finest heavy bombers, can be free to design transport aircraft unfettered by official restrictions or lack of enterprise."

The New Civil Heinkel

OUR reference to the new civil Heinkel should have read He 274. By an error this was given as He 174.

SIDELIGHTS FROM THE PAST—XLIV



THE PARNALL POSSUM—1923.

THE IDEA of special cargo-carrying aircraft, now much to the forefront in aeronautical development, is, in the archives of the British Air Ministry, at least 20 years old; older, in fact, than many pilots and other members of air crews now fighting on the battle fronts or bombing rear areas of enemy territory. But those early ideas for the construction of special cargo aircraft were not followed up, and the first experimental efforts now lie (historically) buried, deep under subsequent strata, like the remains of Mesozoic creatures under the geological overlay of the earth's crust.

During the first four years of the Great Peace (or the intervening years between the two Great Wars) three special cargo aeroplanes appeared. One was the Bristol Tramp, with four Siddeley Puma water-cooled motors mounted in pairs in an engine-room inside the fuselage. That engine-room was remarkably like one in a ship. The four engines drove, through gears and shafts, two outboard airscrews. Another cargo aeroplane, built by Boulton and Paul, had two engines mounted fore and aft in the fuselage. The third in this category was the Possum, designed by Mr. Harold Bolas and built by George G. Parnall and Co., Ltd., of the Colosseum Works, Bristol.

Bolas's work always bore the stamp of originality in design. A graduate of Manchester University—and, incidentally, an enthusiastic lacrosse player—he was commissioned in the R.N.A.S. during the Great War and was at first concerned with the design of naval seaplanes at the Admiralty. He began his career in the A.I.D. at Farnborough and in the early days made some of the modifications to the airships which were built there. Before the Great War ended he became designer to Avery's of Bristol (who built Avro 504s, One-and-a-half Strutters, and other aircraft) for whom he produced the Panther ship aeroplane with the big Bentley rotary engine, folding fuselage, undercarriage with hydrovanes, and floatation bags. When the War ended Avery's ceased to manufacture aircraft, but one of the partners, George G. Parnall, broke away and continued the activities of the firm for himself under the style of George G. Parnall and Co. Ltd. His firm made money out of high-class shop-fittings, and expended part of the profits on the construction of aircraft during the lean years from just after the Great War until 1935, when the present firm of Parnall Aircraft was formed and George Parnall retired from the aircraft world.

The Parnall Possum was first known as a Postal aeroplane, and was intended presumably for the carriage of mails. But the Possum was completed as a military type, with Scarff gun-mountings in the fore and aft cockpits.

The Possum had a rather stubby-tailed flat-sided plywood fuselage. Its 12-cylinder 450 h.p. Napier Lion water-cooled motor was housed longitudinally inside the fuselage, approximately on the centre of gravity, with the

upper parts of the three-cylinder blocks exposed. Two airscrews were driven by shafts from the single, central motor, and the triplane structure of the wing design permitted the central wing to house the drives from fuselage to airscrews. The shafts were totally enclosed within a casing and carried between the leading edge of the wing and the front spar.

The two outboard wooden two-bladed airscrews contra-rotated and were driven through reduction gears. At cruising speeds the r.p.m. of the airscrews was so low that the eye could distinguish the blades as they turned. The shaft drives and reduction gears were produced by D. Napier and Sons, Ltd., makers of the engine.

The Lion motor was cooled by water flowing through radiators mounted externally on each side of the fuselage; the radiators were hinged so that the radiating surface could be turned head on to the airflow or into line with it to vary the rate of heat loss. The water header-tank was carried in the centre section of the top wing, under which a large gravity-feed petrol tank was slung.

Most aeroplanes of that period employed tail-skids to support the rear end of the fuselage when standing on the ground or taxiing tail down, but the Possum had a swivelling tail wheel fitted with an automatic brake whose friction increased progressively with the load on the tail wheel. A lever in the pilot's cockpit released the brake completely when required. With this arrangement the Possum was exceptionally easy to handle on the ground and could be driven in and out of hangars and manoeuvred inside them with astonishing ease, control over speed on the ground being made easy by the large diameter, slow-speed airscrews.

The Possum carried a crew of three—observer-gunner and pilot in cockpits in front of the motor and an engineer-gunner in a cockpit behind the motor.

Symmetrically balanced ailerons were fitted to all three wings. Aileron control was rather heavy. Rudder control was light, and at first insufficient. Elevator control was highly sensitive. The knowledgeable student will be able to deduce the reasons for these characteristics from the photographs.

The Possum made its first test flight at Filton aerodrome on June 19, 1923, and a number of subsequent flights while undergoing tests throughout that year, after which it went to Martlesham for R.A.F. trials. Characteristically, Bolas himself flew as a passenger on the first flight test. In some respects the Possum was before its time—an interesting milestone on the road of aeronautical progress.

The Possum was built to the order of the Air Ministry as an experimental type and never went into production. Performance figures were not released, but the weight loaded was 6,300 lb. and the main dimensions were:—Span, 46 ft.; height, 13 ft. 9 in.; length, 39 ft.; and wing area, 777 sq. ft.



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FORTHCOMING EVENTS

- Nov. 6.—**Huddersfield**.—S.C.49.—A.R.P. Hdqrs., South Parade.—19.00 hrs.
- Nov. 6.—**Hoddesdon**.—S.C.128.—The Clock House.—19.30 hrs.
- Nov. 6.—**Preston**.—S.C.249.—Central Police Stn.—19.30 hrs.
- Nov. 8.—**Lincoln**.—R.O.C.C. Branch 39.—St. Martin's Hall.—14.45 hrs.
- Nov. 8.—**Orsett**.—R.O.C.C. Branch 40.—The Hospital.—10.45 hrs.
- Nov. 8.—**Barrow-in-Furness**.—R.O.C.C. Branch 83.—John Whinerah Institute.—11.00 hrs.
- Nov. 8.—**Bedale**.—R.O.C.C. Branch 91.—Black Swan Hotel.—10.30 hrs.
- Nov. 8.—**London**.—Institute of Economic Eng.—Paper on "The Function of Time Study in Industry," by A. Griffiths, A.W.M.A.—At the Waldorf Hotel, W.C.2.—14.30 hrs.—Visitors invited.
- Nov. 8.—**Reading**.—S.C.53.—Abbey Gate Way.—19.15 hrs.
- Nov. 8.—**Plymouth**.—S.C.299.—Toc. H., Gilwell Street.—11.00 hrs.
- Nov. 10.—**London**.—M.H.S. Course for Club Training Officers.—170, Queen's Gate, South Kensington.—19.00 hrs.
- Nov. 10.—**Southend-on-Sea**.—S.C.1.—A.R.P. Training Centre, 37, Southchurch Rd.—19.00 hrs.
- Nov. 10.—**Streatham**.—S.C.13.—St. Joseph's College, Room 6, Crown Point.—19.00 hrs.
- Nov. 10.—**Newport**.—S.C.40.—Newport Corn Exchange.—19.30 hrs.
- Nov. 10.—**N. London**.—S.C.156 (Islington).—Northern Polytechnic, Holloway Rd., N.7.—19.00 hrs.
- Nov. 11.—**London**.—M.H.S. Course for Club Training Officers.—170, Queen's Gate, South Kensington.—19.00 hrs.
- Nov. 11.—**Hastings**.—S.C.47.—White Rock Pavilion.—19.50 hrs.
- Nov. 11.—**Rickmansworth**.—S.C.81.—112, High St.—19.30 hrs.
- Nov. 11.—**Sheffield**.—S.C.178.—Geo. Senior and Sons, Ltd., Ponds Forge, Sheaf St.—19.00 hrs.
- Nov. 11.—**Newcastle**.—S.C.272.—Crows Nest Hotel.—19.30 hrs.
- Nov. 12.—**Doncaster**.—S.C.106.—Trades Hall, North Bridge.—19.15 hrs.



BACK TO UNCLE SAM.—United States airmen who joined the R.A.F. or the R.C.A.F. two years ago are now being transferred to the United States Naval Air Force. Here Capt. F. B. Kauffman, United States Naval Attaché for Air (right) is seen with U.S. airmen in London during the swearing-in ceremony.

Sir Frank Spriggs's New Directorship

SIR FRANK SPENCER SPRIGGS, Chairman of A. V. Roe and Co. Ltd., Air Service Training Ltd., Armstrong Siddeley Development Co. Ltd., Armstrong Siddeley Motors, Ltd., Gloster Aircraft Co. Ltd., Hawker Aircraft Ltd., Sir W. G. Armstrong Whitworth Aircraft Ltd., and Managing Director of the Hawker Siddeley Aircraft Co. Ltd., has accepted a seat on the West End Board of the Eagle Star Insurance Co.

Salvage of Non-ferrous Metals

AN URGENT APPEAL has been issued by the Ministry of Supply for all unused non-ferrous metal such as copper cable, electrical parts and fittings, sheathing, tube, wire and turnings, zinc sheet and turnings, lead-covered cable, pipe, sheet, etc., bronze bearings, bushes, etc., brass pipe, sheets, etc., whitened anti-friction metal, solder waste, and aluminium and its alloys. Scrap should be taken to depôts specially provided by the Local Authority, or to a scrap metal merchant.

Paper Economy Committee

A COMMITTEE to investigate the economical use of paper, rather than the salvaging of waste paper, has been formed by the Ministry of Production, with an address at 3, Central Buildings, Westminster, London, S.W.1. The members are Mr. L. W. Farrow (Chairman), Mr. H. C. Tingay, and Mr. B. C. Westall. Communications will be welcomed, but will not be acknowledged unless further information is required.

A.T.C. Gliding School

ON Sunday, October 25, Air Commodore A. D. Warrington Morris, C.M.G., O.B.E., Deputy Director of the A.T.C., opened the second gliding school to be established in the Eastern Command of the A.T.C.

A large part of the equipment of the school, including two gliders, four sailplanes, and a Kronfeld Ground Trainer, was used in a gliding display given by both pupils and instructors, among whom were an A.T.A. pilot and members of the London Gliding Club.

This, the fourth flying ground to be set up in the area of Wembley, Harrow and Hendon, will serve to continue a long line of historical associations starting in 1909, when A. V. Roe (now Sir A. Verdon-Roe, O.B.E.), set up his workshops on the present site of the Empire Stadium.

Jane's "All the World's Aircraft"

THE AEROPLANE would like to buy issues of Jane's "All the World's Aircraft" of 1933 and 1935. Will readers who have copies in good condition kindly write to the Editor, stating the price at which they are prepared to sell.

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.

PERSONAL NOTICES

BIRTHS

- Allom**.—On Oct. 21, at Bleichingley, to Pamela, wife of Wng. Cmdr. M. J. C. Allom, R.A.F.V.R.—a daughter.
- Banks**.—On Oct. 17, at Perth, to Dorothy, wife of Plt. Off. W. H. Banks, R.A.F.—a daughter.
- Barrie**.—On Oct. 22, to Pat (née Cunningham), wife of Plt. Off. A. Stuart Barrie, R.A.F.V.R.—a daughter.
- Browning**.—On Oct. 20, at Danbury Nursing Home, to Peggy (née Buxton), wife of Flt. Lt. H. L. Browning, R.A.F.V.R.—a daughter.
- Clarke**.—On Oct. 19, at Birmingham, to Margery (née Forrest-Hay), wife of Flt. Lt. Michael Clarke, R.A.F.V.R.—a daughter.
- de la Haye**.—On Oct. 23, at Kingston County Hospital, to Joan (née Rossiter), wife of Flt. Lt. G. E. de la Haye, R.A.F.—a son.
- Fox**.—At Bulawayo, to Yvonne Patricia (née Gaunt), wife of Flt. Off. S. Allen Fox, R.A.F.V.R.—a daughter.
- Griffiths**.—On Oct. 25, at Cardiff, to Myra (née Edwards), wife of Flt. Lt. T. Ellis Griffiths, R.A.F.V.R.—a daughter.
- Mills**.—On Oct. 21, at Stanmore, to Judy (née Mathers), wife of Sqdn. Ldr. F. Leo Mills, R.A.F.V.R.—a son.
- Nicholls**.—On Oct. 22, at Fulmer, Bucks, to Grace (née White), wife of Sqdn. Ldr. J. P. V. Nicholls, R.A.F. (lost on operations in March)—a daughter.
- Norman**.—On Oct. 27, to Pauline (née Davenport), wife of Flt. Lt. H. W. Norman, R.A.F.V.R.—a son.
- Rhodes**.—On Oct. 18, at Hull, to Ida, wife of Flt. Lt. H. Rhodes—a son.
- Smith**.—On Oct. 20, at Bristol, to Pamela (née Penson), wife of Plt. Off. Alan Smith, R.C.A.F.—a daughter.
- Stratton**.—On Oct. 20, at Derby, to Valerie, wife of Flt. Lt. H. A. Stratton, R.A.F.V.R.—a daughter.
- Turton**.—On Oct. 25, at West Kirby, to Marjorie Mary (née Oliver), wife of Flt. Lt. H. W. Turton, R.A.F.V.R.—a daughter.
- Whitaker**.—On Oct. 25, at West Kirby, to

- Margaret (née Rigby), wife of Flt. Lt. S. T. Whitaker, R.A.F.V.R.—a daughter.
- Woolfrey**.—On Oct. 23, at Fulmer Chase, to Doris (née Buswell), wife of Flt. Lt. A. R. G. Woolfrey—a son.

FORTHCOMING MARRIAGES

- Hamblin-Bond**.—The marriage arranged between Gp. Capt. Richard Kaye Hamblin, son of the late R. E. Hamblin, I.C.S., and the late Mrs. Hamblin, and S/O Elizabeth Catherine Harwyse Bond, W.A.A.F., daughter of Major-General R. L. Bond, C.B.E., D.S.O., M.C., and Mrs. Bond, will take place very quietly at 11.30 on Nov. 12 in Durham Cathedral.
- Harvey-Watt**.—The engagement is announced between Plt. Off. Philip Harvey, R.A.F.V.R., second son of the Bishop of Cashel and Mrs. Harvey, Bishopsgrove, Waterford, and Patricia Edith, daughter of Mr. and Mrs. W. F. Watt, of Cliff House, County Waterford.
- Houédard-Turner**.—The engagement is announced between Plt. Off. Louis Houédard, elder son of the late Mr. and Mrs. A. P. Houédard of Guernsey, and Molly, younger daughter of Mrs. Turner and the late Joseph R. Turner, of Lanes.
- Krish-Moiseiwitsch**.—The engagement is announced between Plt. Off. Felix Krish, R.A.F.V.R., second son of Mr. and Mrs. Serge Krish, and Tanya, elder daughter of Mr. Benno Moiseiwitsch and Daisy Kennedy.
- Overton-Dunlop**.—The engagement is announced between Sqdn. Ldr. Charles Nevil Overton, D.F.C., youngest son of Mr. G. S. Overton, of Lincoln, and Sybil, daughter of Mr. G. C. F. Russell, of China.
- Verney-Tollemache**.—The engagement is announced between Reynell Henry Verney, C.B.E., R.A.F. (ret'd.), of Warwickshire, second son of the late Rev. the Hon. Walter and Mrs. Verney, and Dorothy Ceciley, elder daughter of Lord Tollemache and the late Lady (Wynford) Tollemache.
- Wallace-Mold**.—The engagement is announced between Sub-Lt. (A) K. Gordon Wallace, R.N.V.R., elder son of Mr. and Mrs. K. Wallace

of Gosforth, Newcastle-on-Tyne, and Joan Margaret, only daughter of Mr. and Mrs. L. E. Mold, of Gosforth, Newcastle-on-Tyne.

Wickham-Shute.—The engagement is announced between Sqdn. Ldr. Peter Reginald Whalley Wickham, D.F.C., son of the late Mr. and Mrs. E. H. Wickham, of Kenya, and Mrs. Sheila Margery Shute, daughter of Sir Hector Macneal and the late Lady Macneal.

MARRIAGES

- Logan-Bilham**.—On Oct. 6, at Golspie, Sutherland, Flt. Off. David J. C. Logan, of Kirkcudbrightshire, to Cpl. Audrey J. Bilham, W.A.A.F., of Hove, Sussex.
- Maidment-Drysdale**.—On Oct. 19, Flt. Off. J. C. H. Maidment to Morag Drysdale.
- McArthur-Henderson**.—On Oct. 16, Flt. Lt. A. J. Dennis McArthur, A.A.F., son of the late Allan McArthur, J.P., and of Mrs. McArthur, of Bristol, to Pamela Mary, W.R.N.S., elder daughter of Cmdr. and Mrs. Henderson.
- Meadows-Hankinson**.—On Sept. 17, Flt. Lt. John Pierpont Meadows, R.A.F.V.R., younger son of Col. and Mrs. C. A. Meadows, of Suffolk, to June, only daughter of Dr. and Mrs. C. H. Hankinson.
- Rutherford-Sanders**.—On Oct. 23, at Newcastle-on-Tyne, Flt. Lt. R. J. Rutherford, F.R.C.S., R.A.F.V.R., only son of Dr. and Mrs. Robert Rutherford, to Dr. Elizabeth Howard, daughter of Mr. A. G. and the late Mrs. Sanders.
- Stebbings-Warren-Roberts**.—On Oct. 24, at St. Annes-on-Sea, Victor Barry Stebbings, R.A.F.V.R., son of Mr. and Mrs. H. V. Stebbings, of Herne Bay, to Dorothy Freda, younger daughter of Mr. and Mrs. C. E. Warren-Roberts of Lytham.
- Thomas-Ketley**.—On Oct. 20, at Helston, Cornwall, Plt. Off. J. W. Hendy Thomas, R.A.F., only son of Mr. and Mrs. W. Hendy Thomas, of Keyworth, Notts, to Claudine, daughter of Major W. J. B. Ketley, of London, and Mrs. H. S. Woolley, of Nottingham.

CORRESPONDENCE

Fire Power and the Tail Turret

YOUR NOTES on the relative fire from fighters and bombers are most interesting, but I do not agree with you. It appears to me that the point at issue really boils down to the fact that you assume, while I do not, that the conditions obtaining when two aeroplanes are hung in a 320 ft. per sec. wind in a tunnel are identical with those affecting the *relative* functions of two aeroplanes flying in the open. In the first case (wind tunnel) the flow of air is absolutely continuous and, save for local disturbances caused by the presence of the aircraft, on the whole an even one; in these conditions your thesis seems to me to be perfectly correct, since the only abnormal factor is the air current, which is moving in a known direction and at a known speed.

I cannot, though, see that, in the case of two aeroplanes flying, say, 200 yds. apart in the open, there is likely to be any continuous stream of air covering the entire distance between the two aeroplanes. The analogy that one thinks of most easily is that of the wake of a ship—this is an area of disturbance, but not of backward movement. It is the ship that moves forward not the water that moves back; again, any photograph of tracer projectiles shows the resultant smoke hanging in the air, and not shooting backwards at a speed equal to that of the projectile.

Therefore I maintain that the only practical (apart from theoretical) factors affecting the *relative* muzzle velocities of the machine-guns are the speed of the aeroplanes carrying those guns; these speeds impart inherent velocities to the bullets—320 ft. per sec. negative in the case of the bomber, and 320 ft. per sec. positive in the case of the fighter—which are exactly neutralised by the opposite velocities of their targets.

R.E.C.E.

[This is a typical example of the many letters we have received on this subject. The argument above fails to appreciate that two aeroplanes flying on the same course at the same speed are in fact influenced by exactly the same conditions as two aeroplanes in a wind tunnel—which was suggested as a convenient method of appreciating the problem clearly.]

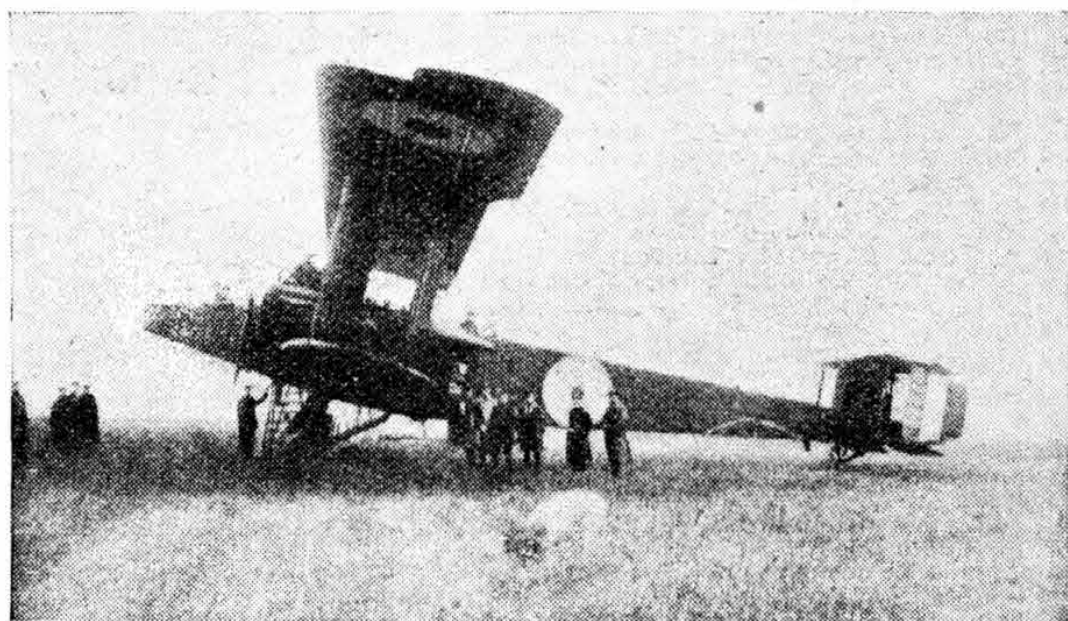
The real point is that the fighter firing forward adds its own forward velocity to that of the muzzle velocity of its bullets, thus increasing their resistance, whereas the bomber firing backward must subtract its own velocity from the muzzle velocity of its bullets, thus reducing their resistance, although both sets of bullets travel between fighter and bomber with the same initial velocity. The longer the range the greater the effect because the resistance of the bullets varies by more than the square of their speed through the atmosphere.—Ed.]

Regenerative Cooling

I RECENTLY came across a photograph of the old Supermarine F.7/30, and noticed that the power plant was a Rolls-Royce Goshawk steam-cooled engine. This engine, and the method of cooling, has raised rather a controversy in the large engineering drawing office where I work.

Various explanations of the exact method employed have been put forward, and if you could let me have an explanation of how steam is generated and employed to cool a petrol engine, I should very much appreciate it; also what are the advantages, if any, of this method of cooling over the liquid-cooled types? And could you mention any other machines to which a steam-cooled engine was fitted? G. BUXTON.

[Steam cooling was tried out extensively by Rolls-Royce Ltd. some years ago and was installed in the Goshawk motor not only in the Supermarine F.7/30, but also in the Hawker Hart, Hawker Super Fury and other contemporary types. The idea was to allow the water to boil and then pass it through a



HANDING IT TO THE ENEMY.—A German photograph of a Handley Page V/400 in enemy hands in 1917, one of the several notorious events of this nature.

condenser before returning it to the jackets, using the latent heat of evaporation for cooling and allowing the motor to run at a higher temperature. Glycol cooling superseded steam cooling as it entails less complicated installations.—Ed.]

The Origin of the Gotha G.IV.

IT IS STATED in "Sidelights from the Past, XXXIV," that the General Officer commanding the German military Air Service undertook to have 30 Gotha G.IVs ready to make daylight raids on London by Feb. 1, 1917. This being so, it is difficult to see on what grounds you base your claim that the Gotha "owed much to the Handley Page 0/400, one of which had been captured by the Germans," since the 0/400 did not fly until 1917, and went into squadron service for attacking Rhineland targets in October of that year.

Surely the H.P. 0/400 which was so unfortunately landed intact in the enemy's lines did not meet its fate until long after the Gotha was in service and spreading destruction in our cities. In fact, I have an idea that it was not until early 1918 when this happened—at any rate it was not much before April, 1918, when Richthofen flew it. ABOUKIR.

[The Handley Page 0/400, one of the first of its type, landed by mistake because of faulty navigation near Laon in France, territory then held by the enemy, early in 1917. The photograph illustrates this machine in German hands. A similar case occurred when an F.E.2d with the first Rolls-Royce Eagle motor mistook the Lille aerodrome for St. Omer and handed this prize also to the Germans. The enemy also published with little haste a photograph of this crash.]

The prototype Handley Page heavy bomber, the 0/100 was flying round about Christmas, 1915, and the production version, the 0/400, was delivered to the Royal Naval Air Service heavy bomber squadrons at Dunkirk at the beginning of 1917. The Gotha types were reputed to be developed from data acquired from the captured Handley Page and appeared in daylight raids on this country in the Summer of 1917. The Zeppelin raids had by that time been defeated decisively and the enemy had once more to think again, as happened after the Battle of Britain of recent memory.—Ed.]

More Film Blemishes

I HAVE recently read with interest your remarks concerning the inaccuracy of a film presented to the British public and which was supposed to show the life of Mitchell.

I thought you might be interested to hear the following:—

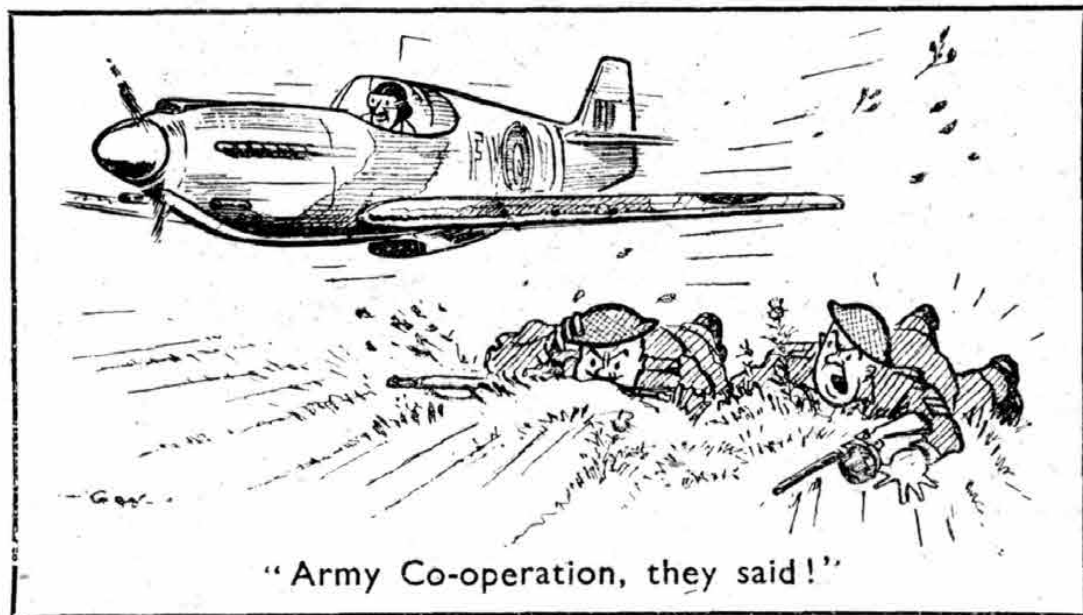
I recently went to a News Theatre at Piccadilly and a news reel was presented entitled "The Bombing of the Renault Works." It was obviously revived because some films had come out of France showing the destruction of the works, which were most interesting, but the publisher thought fit to attach some films of what he called the machine shop before the raid, as well as the assembly lines of cars and the return of the raiders, etc.

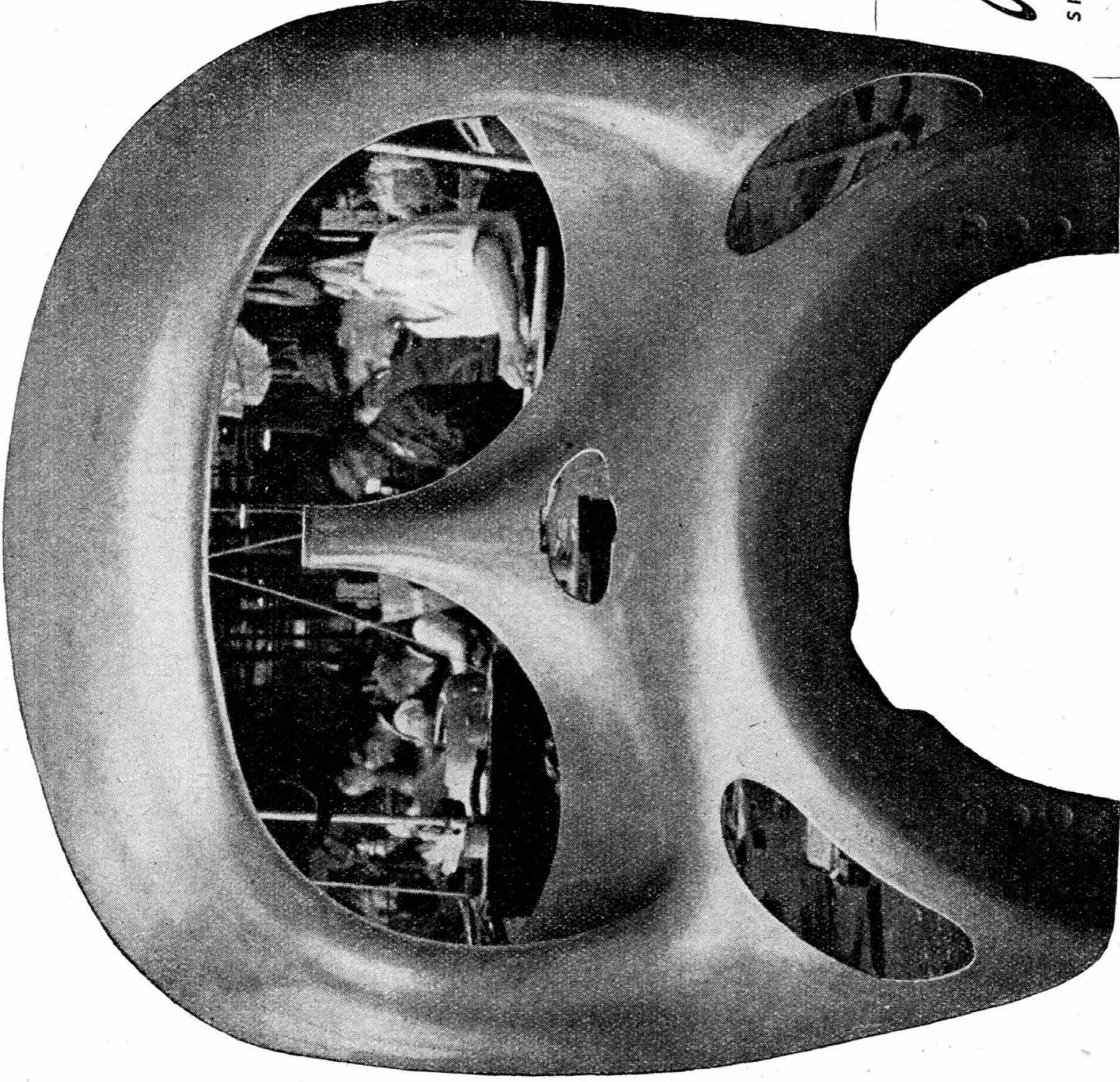
As far as I am concerned, the machine shops shown were not the Renault machine shops or, if they were, they must have been filmed before or just after the last war. These shops were crowded with overhead drives, belts, etc., and neither the Works nor the type of stoves used looked French. The cars assembled were not Renault but Rosengart.

The return of the raiders showed some Bostons in flight and, as far as I know, the Renault Works were neither bombed in the daytime nor by Bostons.

I feel the Renault raid has been most effective, and I think it is a pity to spoil it such a long time afterwards by showing something which is obviously inaccurate and does not add anything to a successful operation. L.S.A.

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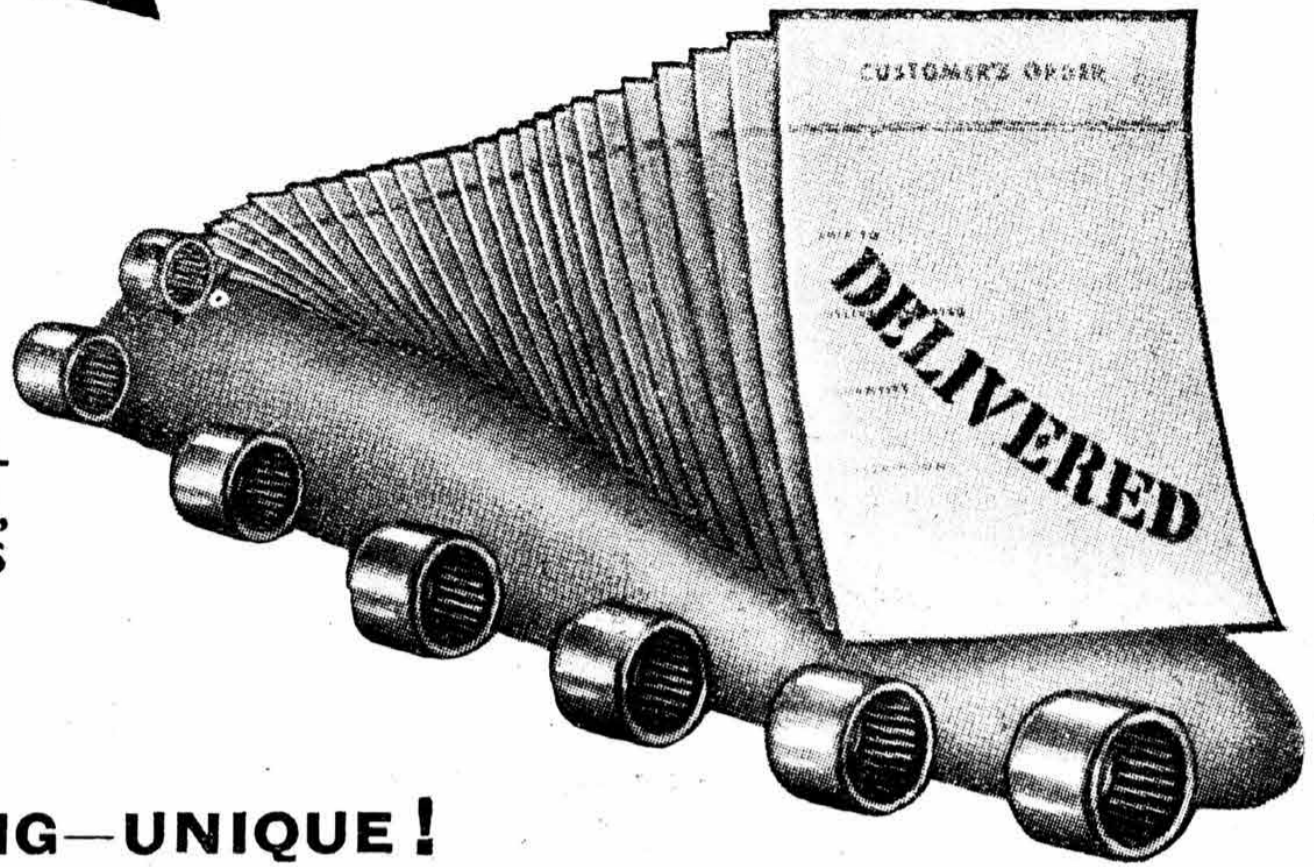
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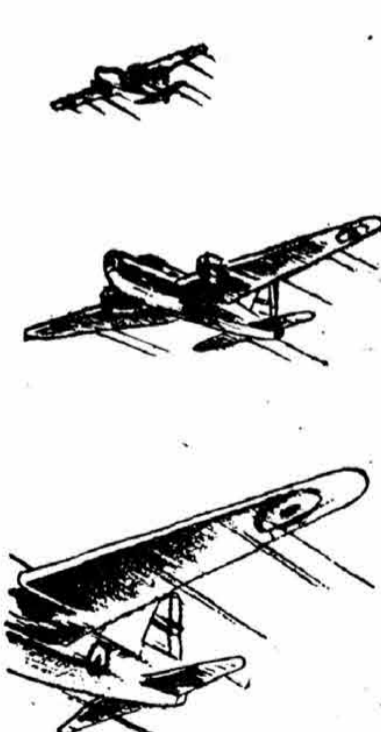
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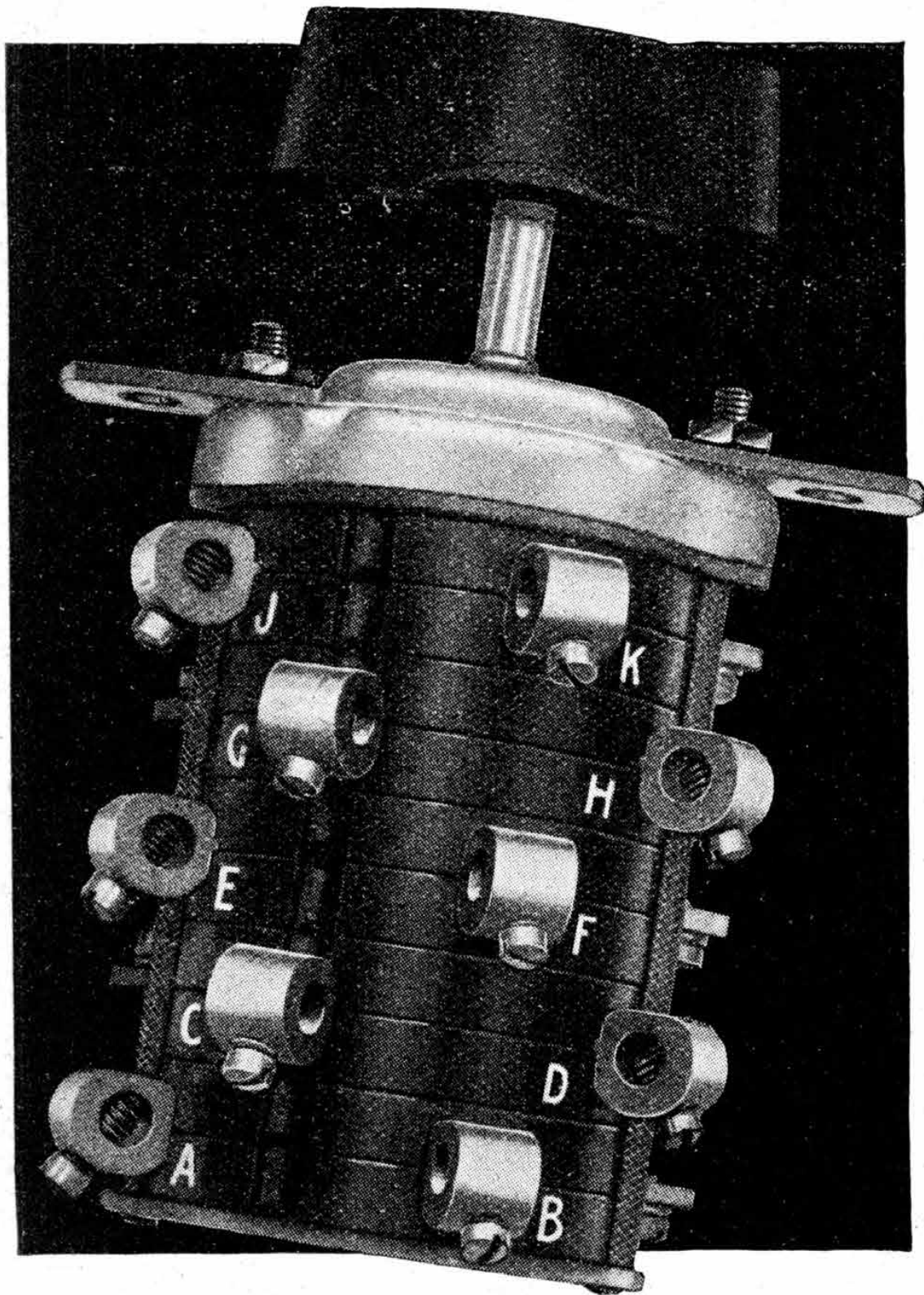


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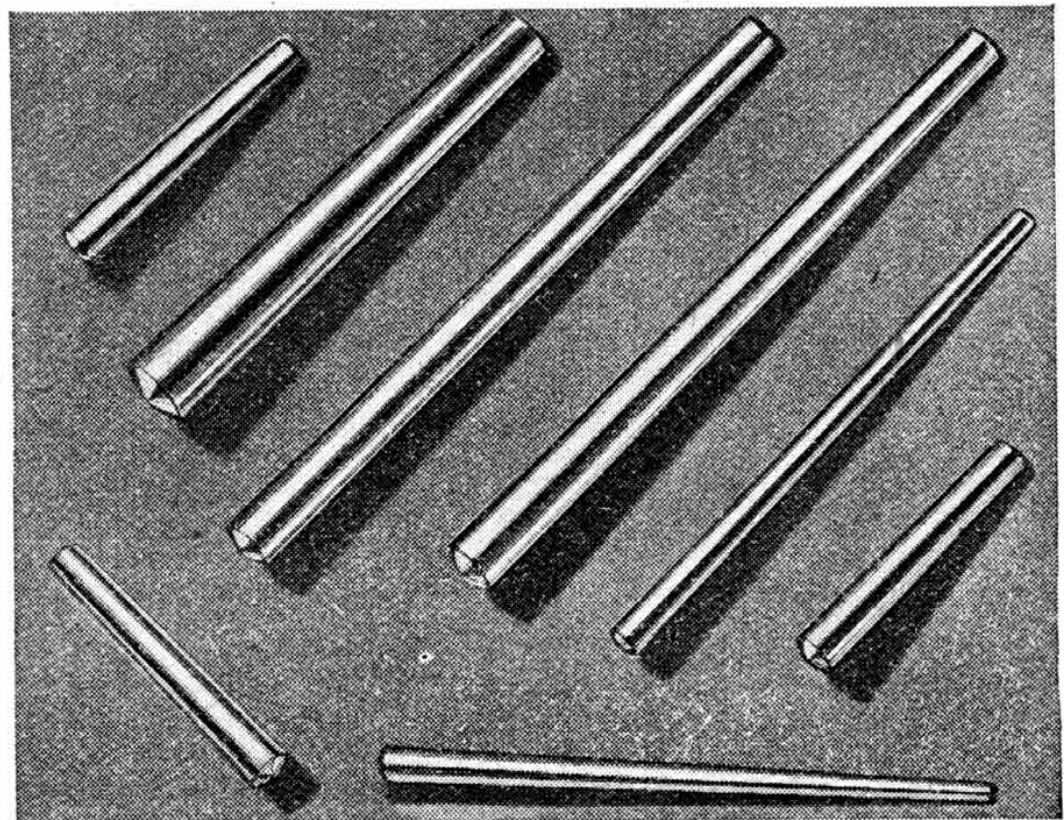
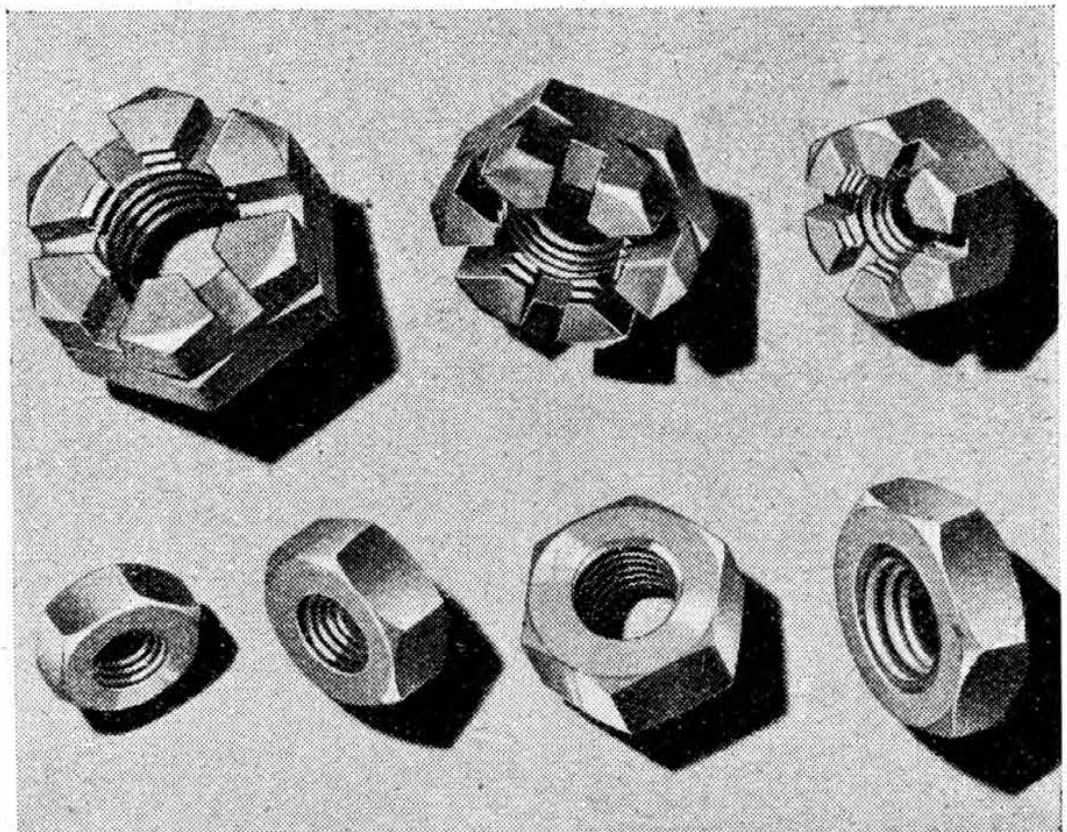
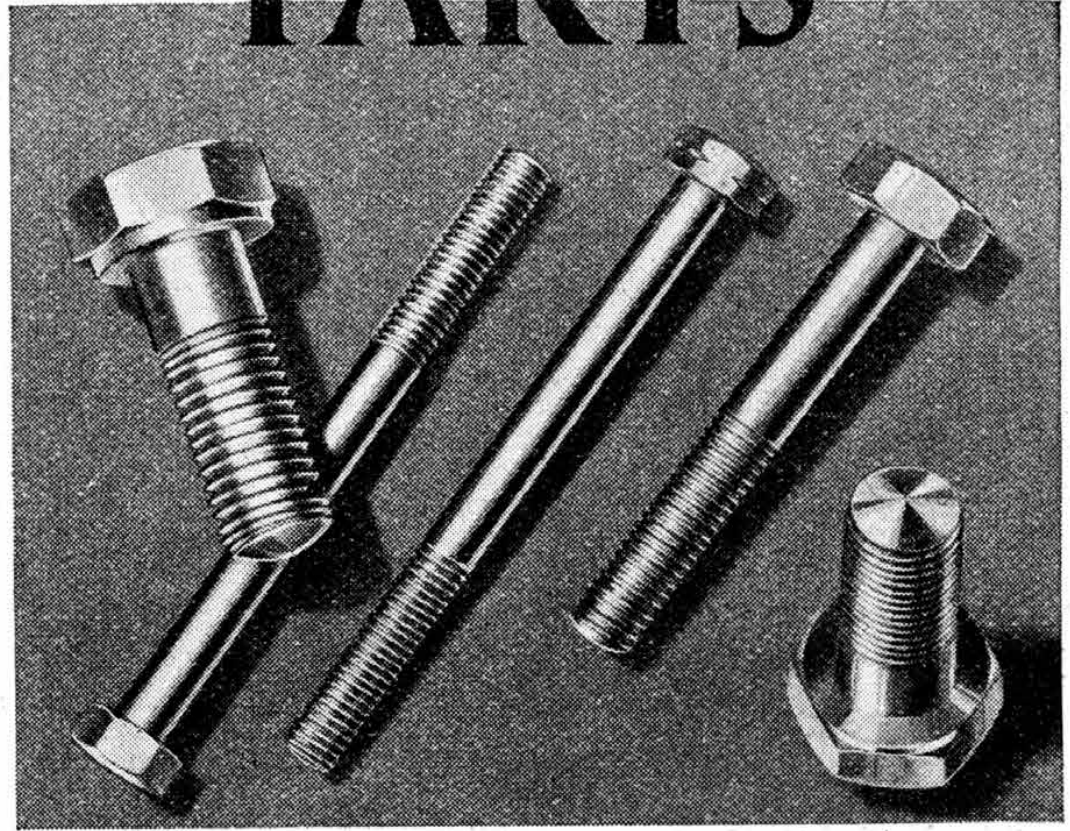
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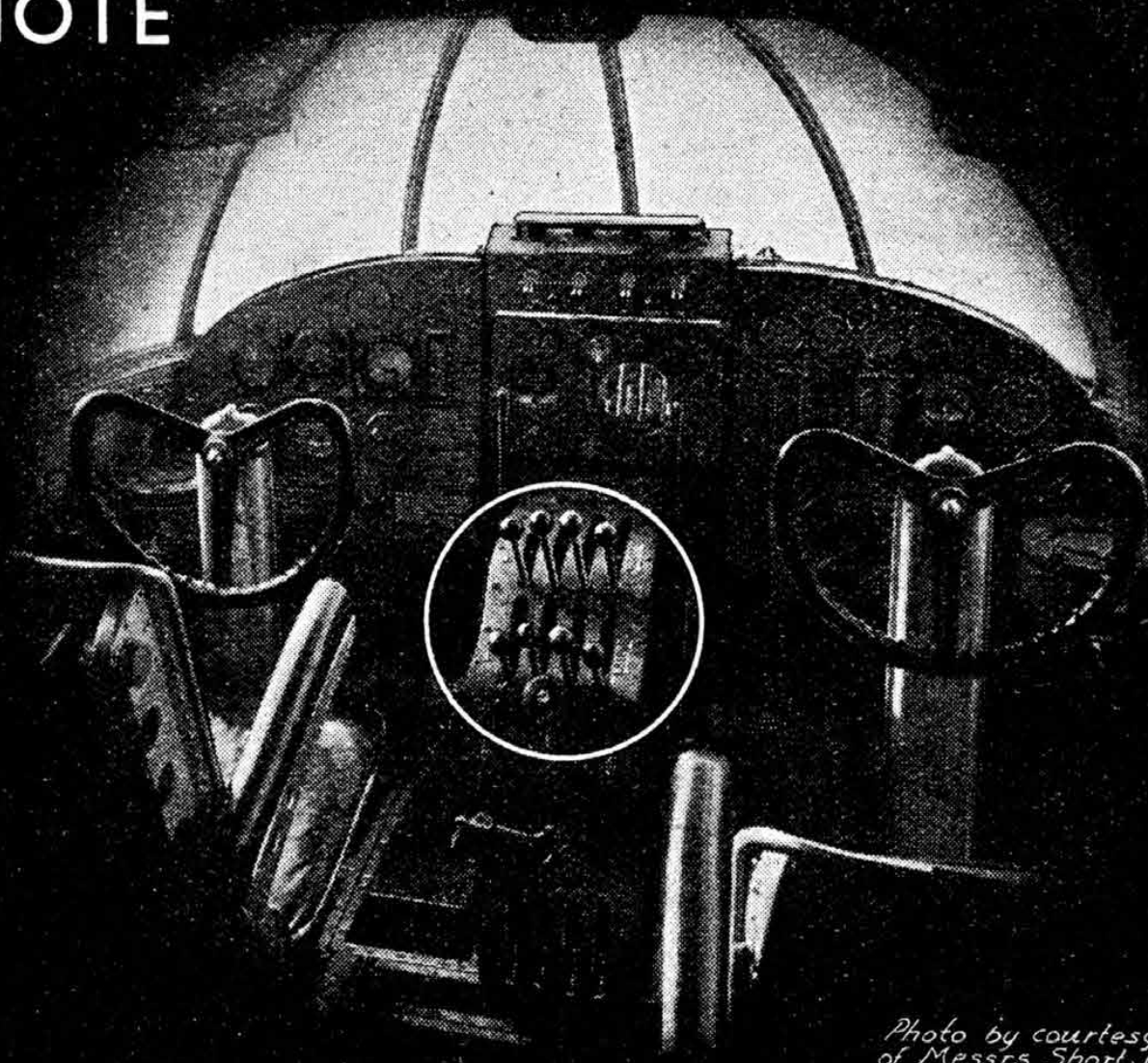


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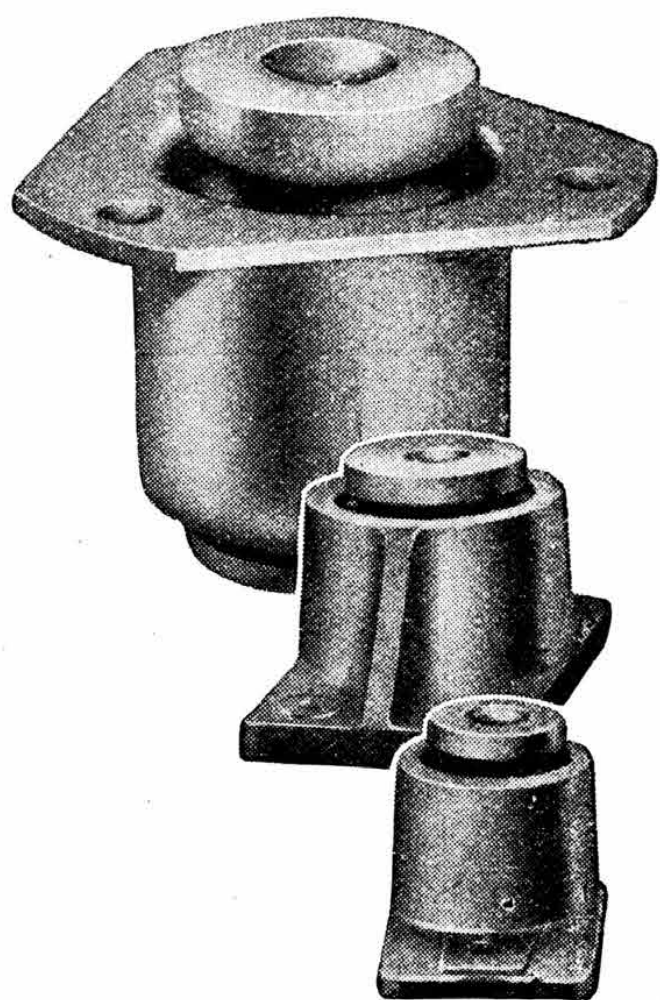
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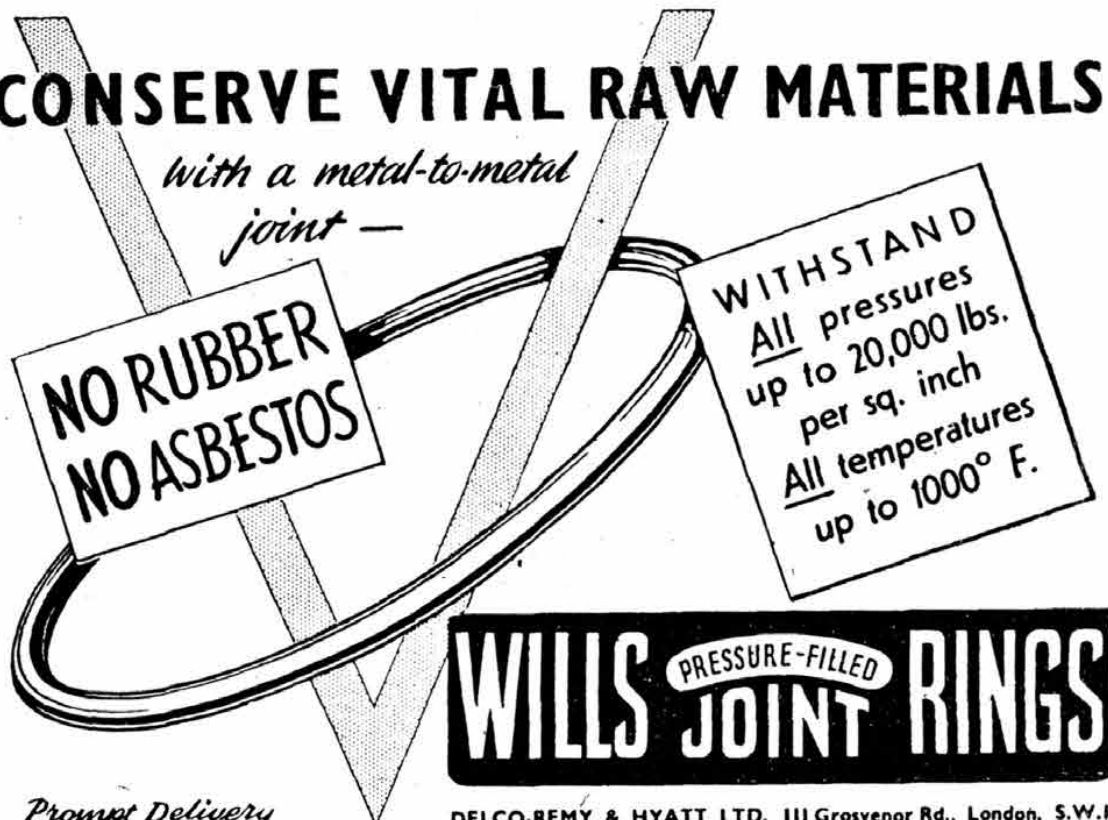
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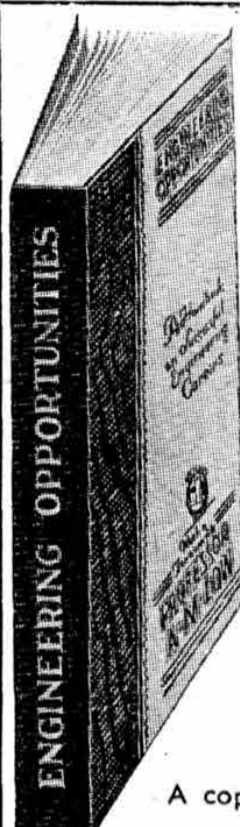
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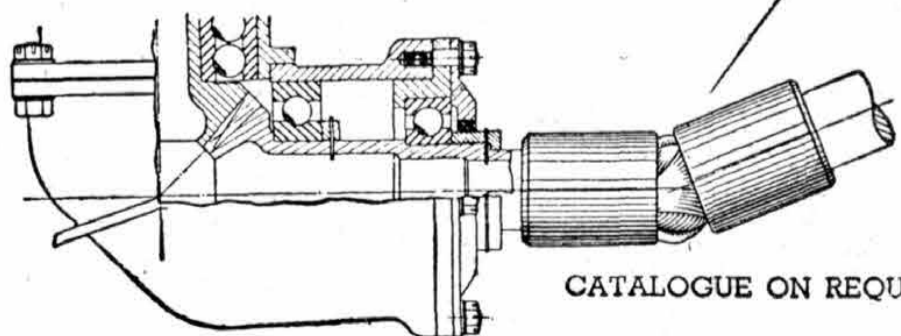
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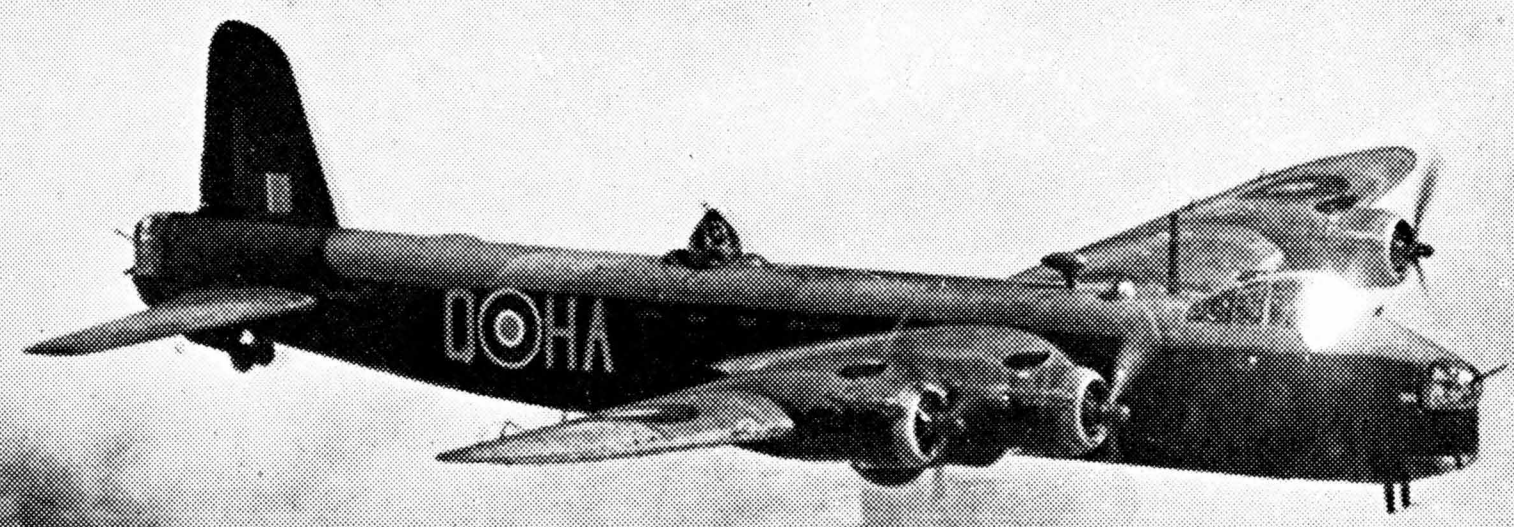
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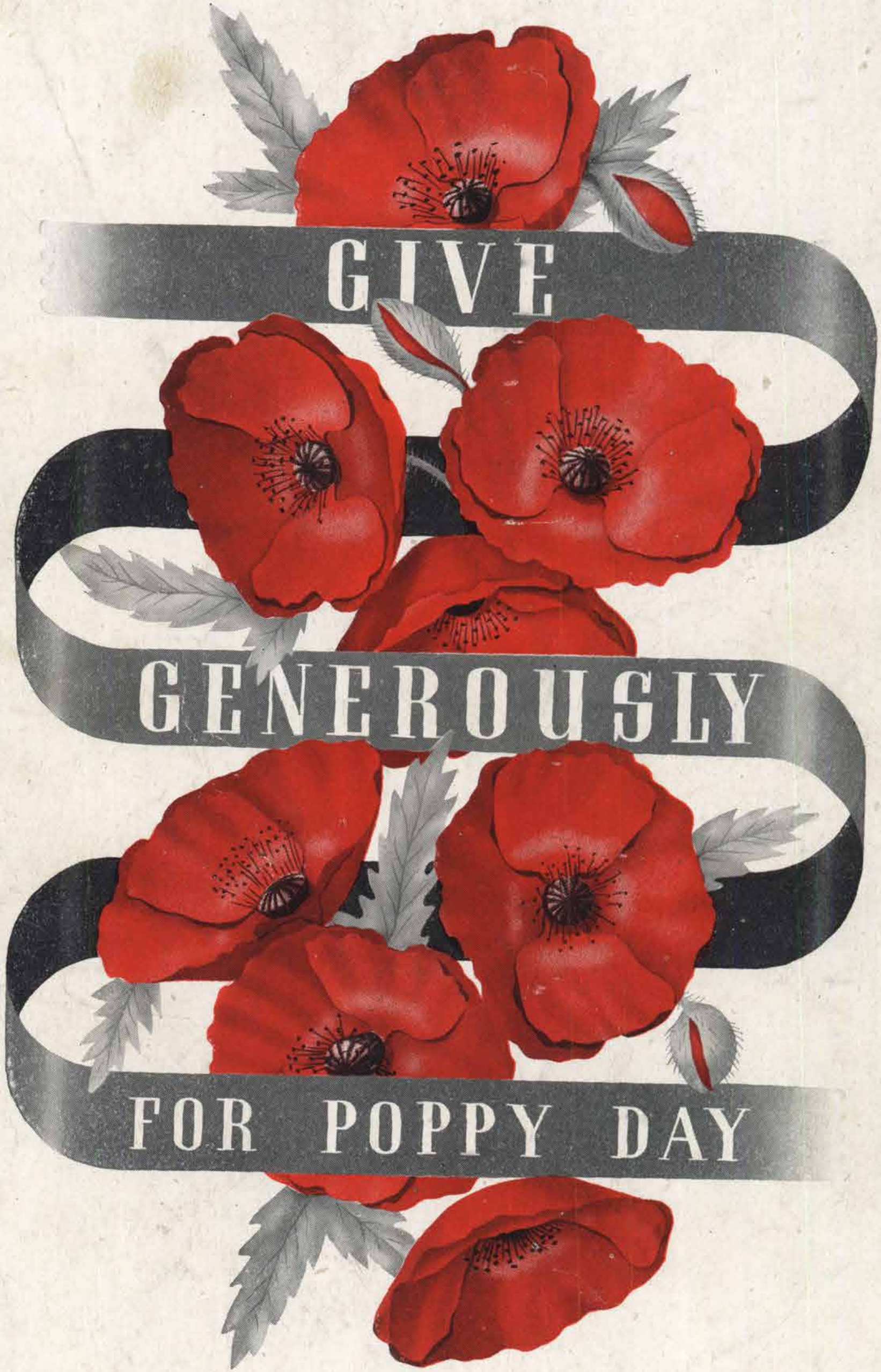
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