

A section of Spitfires "beating up" their aerodrome for the benefit of pressmen. This practice is normally discouraged except after a victorious action.

FIGHTER STATION

With the Spitfires in Scotland

By H. F. KING

Illustrated by "Flight" photographs

AT Creçy we had long bows; on the Somme the tanks; and in this war we have the eight-gun fighters.

Our Spitfires and Hurricanes may not be of such a revolutionary character (though their success is attributable to certain unique qualities), but their designers have given our defences that "extra little something" which is lacking in the *Luftwaffe*: tractable fighters which can be used with impunity by day or night and which have a superiority in armament over any single-seater fighters yet in service.

These machines are as popular with their pilots and the public as they are dreaded by the Germans. In six months their names have become everywhere familiar, and their qualities and accomplishments are known to errand boys, kitchen maids, fishermen and bankers.

The Air Ministry is well satisfied, and we suspect that it was not without a certain pride that *Flight* was invited to visit a typical fighter squadron in Scotland. We say typical, though actually it belongs to a sector which can claim the biggest bag of enemy aircraft since the war began: nine Heinkels and Dorniers out of sixteen interceptions. Two pilots have been awarded the D.F.C. Units from the station tackled the raids on the Firth of Forth, and it was from the same aerodrome that a Spitfire squadron took off and brought down an He IIIK off St. Abb's Head. Another of the Spitfire squadrons housed there shot down the first German bomber to fall on British soil; this was the Heinkel which made a crash landing on the Lammermuir hills near Dalkeith. Before the war the unit was a squadron of the Auxiliary Air Force, manned by young Glasgow men.

Such stations as this are administered by the Fighter Command, R.A.F. (Air Officer Commanding-in-Chief, Air Chief Marshal Sir Hugh Dowding) and are responsible for close defence at Home from air attack. Up to the moment, although forty German bomber or reconnaissance machines have been destroyed by the Fighter Command, not one of our fighters has been brought down.

The modern fighter pilot is the first to admit that air defence to-day is essentially a matter of team work. Particularly does he praise the

patient, watchful enthusiasts of the Observer Corps who report his every movement. Here we may interpose the story of the *Ogle Pogle*.

Before this inelegant sobriquet was conferred on a particular Spitfire its pilot, patrolling at a great height over point A, had been directed, on information from the Corps, to investigate a machine over B. Arriving there he was redirected to A for the investigation (unbeknown at that time to himself or the Corps) of his own aircraft. By the time he had reached A he had again been signalled to B, where his presence had been duly reported. And so round he went in circles like the fabulous Ogle Pogle bird which, history tells us, flew in ever-decreasing circles, finally performing an astounding feat of contortion.

Students of Service jargon may wish to note that to be "ogle-pogled" is to become involved in one of these roundabout patrols.

Other machines were inscribed *Harpo*, *Groucho*, *Chico* (probably one of the flight leaders is a student of Marx), *Sheepdipper* (was this inspired by *The Lion Has Wings?*) *Bogus* and *Duck*.

As for the station itself we could not, even if permitted, give a very vivid picture as it is purposely made as featureless as possible. Despite the architectural drabness, the place is pervaded with an air of alertness.

The Officer Commanding, Group Captain Kearey, received us in the ante-room of the mess and led us out on a personally conducted tour. On the way to the Link



Scale models of German aircraft are used for instruction in zones of fire. Gun positions are represented by small illuminated bulbs.

Trainer rooms, in which the pilots spend three hours a month on blind-flying or Lorenz beam practice, the C.O. drew our attention to the comprehensive system of Tannoy loud-speakers through which instructions and warnings can be broadcast to every part of the aerodrome buildings. On the wall of one of the Link rooms was a photograph of German Air Force pilots receiving instruction on what appeared to be almost identical equipment. In the parachute section (in charge of a corporal and run on a "station," rather than a "squadron," basis) we recalled also that the German parachutes are similar in design to our own.

Later, in a sombre Bellman hangar through which we passed (this is a lofty corrugated iron affair which is quickly erected and dismantled) we saw fitters removing a cylinder block from a Merlin engine. Six others—two to a blade—bore off the big De Havilland v.p. airscrew.

Relaxation

A walk between the hangars beyond brought us to the rest room used by the pilots commanded by Wing-Commander Farquhar, one of the station's D.F.C.s. Within, this was essentially homely and the mural decorations were not all aircraft-identification charts; obviously the pilots' appreciation of streamlining is not confined to their Spitfires.

The "stand-by" pilots receive action warnings over the loud-speakers. If not relaxing on one of the beds they may divert themselves with a game of chess. In daytime they are normally released for meals, but if this is impractical food is sent from the mess in thermos containers.

More impersonal, though to our mind of supreme interest, was the armoury, where a Warrant Officer spared himself no trouble to explain his deadly charges.

That its thin insect-like wings can house so unobtrusively such a destructive concentration as eight 0.303in. Browning machine guns with their long ammunition belts, feeding, heating and firing arrangements, is but one of the remarkable points of the Spitfire.

On both the Spitfire and the Hurricane the eight guns, which are fired by compressed air, are housed entirely within the wings although the grouping is different in each machine. On the Spitfire there is one gun just outboard of the airscrew arc; then there is a considerable space before the leading edge is pierced by a pair of closely spaced ports; and

Relaxation in the pilots' rest room. As will be seen in the lower view *Flight* identification drawings are in evidence though these—be it said—are not the decorative motif!



On the left is Group Captain C. R. Keary, Officer Commanding a fighter station in Scotland. In black overalls is Wing Commander A. D. Farquhar, D.F.C., who has three Heinkels to his credit.

beyond these is another wide space, the fourth gun being well out toward the wing tip. The belt boxes (or "ammunition tanks" as they are sometimes called) are loaded into the wing from beneath, being held in place by spring clips, and the first round of each belt is pulled through with a piece of webbing, being loaded from the top surface of the wing, which has detachable panels. The webbing idea was first thought out in the squadron concerned, and is now standard throughout the Service. It is said to effect a considerable saving of time in rearming.



The rate of fire is approximately 1,200 rounds a minute per gun.

The Warrant Officer told us that he is continually impressing upon his men the importance of their work. We watched them coating the Brownings with anti-freeze oil, cleaning the barrels and making up ammunition belts. Obviously, they are conscious of their responsibility.

The belts are composed of cartridges held together by metal links. Each round is a finger-tight fit into its link, but the final alignment to ensure correct feeding is done on an ingenious machine. Evenness of feed is absolutely essential, for the guns, being placed in the wings, are not accessible from the cockpit and it is not considered worth while to



The pilots in the group above are appraising the take-off of a flight of Spitfires on a practice interception.

Below a Spitfire pilot demonstrates the use of the reflector sight with which our fighters are fitted.



fit them with remotely controlled cocking handles. The actual make-up of the belts (i.e., proportion of armour-piercing and tracer to "ordinary" ammunition) is secret, though it can, of course, be varied to suit the particular requirements of Fighter Command. Empty cases and links are ejected through apertures in the bottom of the wing. Contrary to what might have been thought the empties do not damage the fabric-covered ailerons.

Heating for the guns is provided by a hot-air duct from the engine. The gun compartments are made more or less air-tight until the first burst is fired by patches of fabric which cover each port. These also improve the performance of the machine and decrease the chances of corrosion. After an action they are replaced, if time permits, before the next engagement. Fitters, riggers and sometimes even pilots assist in the rearming which, together with refuelling, can be completed in less than ten minutes.

We were also shown the standard reflector gun sight in which the illuminated image of a ring sight is projected on to an oval mirror in front of the pilot's eyes and behind the armoured windscreen. If the pilot knows the span of

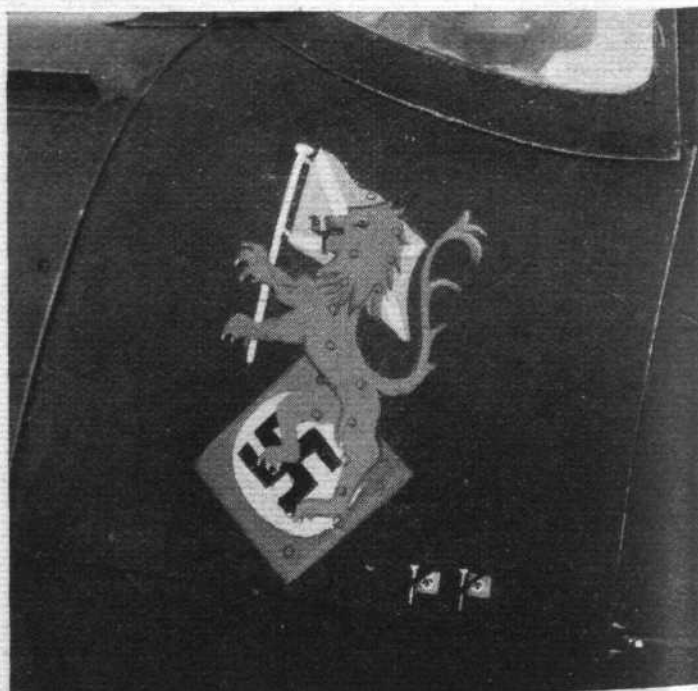
All for one: A Spitfire's eight 0.303 in. Browning guns, each capable of firing 1,200 rounds a minute, after overhaul in the armoury (below).



his adversary he can adjust his sight "to fit" and knows immediately he is within range. Ordinary ring and bead sights are provided in case the electric supply should fail.

As is now generally known the lines of fire of the eight guns converge at a set point in front of the machine and harmonise with the sight.

Fighters are now going into action carrying their ciné-camera guns which use 16 mm. film and prove or refute a pilot's combat report. The camera gun works only while the machine guns are firing and secures an amazingly detailed record of a combat. Sqn. Ldr. Farquhar's last engagement with an He IIIK was reproduced faithfully by his ciné-camera; it was possible to see oil spurting from



The Spitfire usually flown by Wing Commander Farquhar is marked with a British lion trampling underfoot the Nazi swastika. It will be seen that two small Nazi flags are "cancelled"; actually the Wing Commander has accounted for three Heinkels to date.



A thirty-hour inspection is a more pleasant task if performed in sunshine. Here are fitters and riggers engaged on this routine task in the doorway of a Bellman hangar.

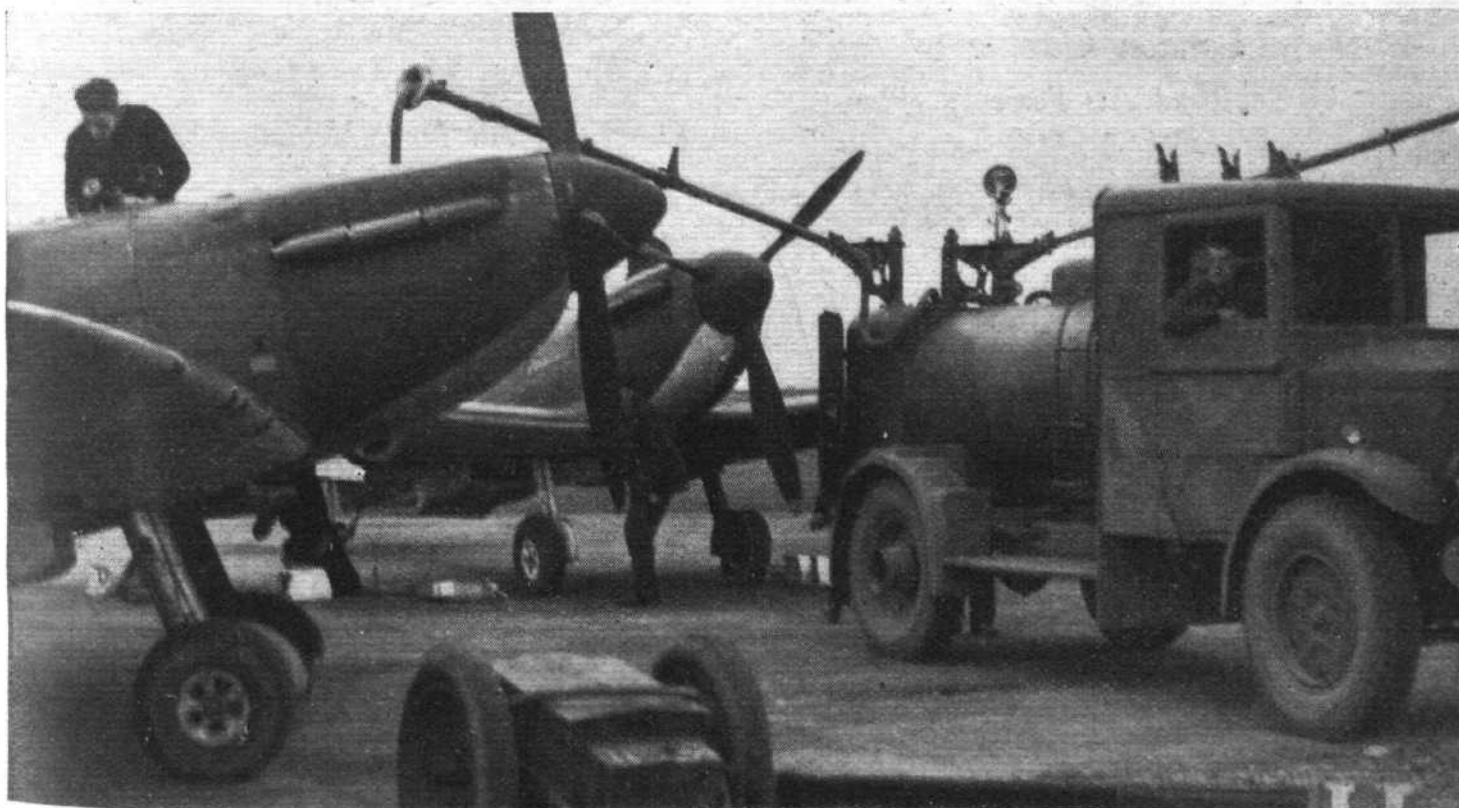
an engine nacelle after the machine had been hit. Having some film remaining after the Heinkel had hit the water the Squadron Leader flew low over the wreck and secured some further views.

This unique strip of celluloid we were not shown, though for our benefit four practice films were screened. A circle is first projected to represent the gun sight reflection ring and a cross marks the centre. The first film recorded a mock attack on a Spitfire from astern; the second a similar attack on a Blenheim; and the third and fourth attacks by a section of Spitfires on another section from the beam (here the aiming off was well demonstrated) and from astern. The accuracy of aim was remarkable despite the

obvious effect of the quarry's slipstream in the stern attacks. Training with the camera gun alone does not, of course, reproduce faithfully actual conditions, for the recoil of the eight guns naturally causes a decrease in speed and a dropping of the nose.

At the butts we saw and heard (standing just in line with the leading edge) three Brownings fired simultaneously. The shattering crackle was accompanied by cascades of cases and links which danced about the tarmac, and the smell of cordite, as smoke poured from the apertures in the wings.

The C.O. had arranged for a fighter Blenheim to come
(Concluded on page 295.)



Hundred-octane fuel surges along the triple arms of a Zwicky unit into the tanks of Spitfires.

The following Pilot Officers on probation are confirmed in their appointments and promoted to the rank of Flying Officer on the dates stated:—(Aug. 27, 1939) F. D. Luzard; (Sept. 1, 1939) T. W. K. Hider, T. W. Sheppard; (Sept. 8, 1939) R. A. Bradford, D. R. Gillie, G. S. Myers, J. R. Pearson; (Sept. 9, 1939) E. D. Skepper, V. A. Stoneham; (Sept. 11, 1939) E. J. Tippet; (Sept. 13, 1939) S. S. Kirsten; (Sept. 24, 1939) O. L. Day; (Oct. 16, 1939) A. J. Macnab, M.C.; (Nov. 4, 1939) H. B. Jenkins.

Pilot Officer on probation H. G. Bradshaw takes rank and precedence as if his appointment as Pilot Officer bore date Nov. 12, 1939. Reduction to take effect from Feb. 24.

F/O. J. G. Critchley resigns his commission (Feb. 19). The commission of Pilot Officer on probation L. W. B. Winship is terminated on cessation of duty (March 13).

Equipment Branch.

G. A. Chittock is granted a commission for the duration of hostilities as Pilot Officer on probation (Oct. 12, 1939). (Substituted for notification in *Gazette* of Nov. 28, 1939.)

The following are granted commissions for the duration of hostilities as Pilot Officers on probation on the dates stated:—(Sept. 29, 1939) T. C. Noble; (Nov. 13, 1939) A. F. J. Copson, G. P. Debono; (Nov. 20, 1939) V. H. Quinn. (Substituted for notification in *Gazette* of Dec. 5, 1939.)

The following Pilot Officers are promoted to the rank of Flying Officers on the dates stated:—(Nov. 17, 1939) J. R. Turnbull; (Dec. 28, 1939) E. D. B. Payne; (Jan. 5) A. E. B. Rich; (Jan. 26) M. J. P. F. H. D'A. de Froberville, E. J. Vince; (Feb. 2) A. H. Seymour; (Feb. 16) H. C. Kendall; (Feb. 23) G. S. Sawtell; (Feb. 29) H. F. R. Temple; (March 6) F. H. Whiteley; (March 13) J. F. Hinks, T. ap Simoh.

Accountant Branch.

A. Siddall is granted a commission for the duration of hostilities as Pilot Officer on probation (Sept. 3, 1939).

Medical Branch.

The following Flying Officers are promoted to the rank of Flight Lieutenant on the dates stated:—(Feb. 21) M. P. Morel, M.B., Ch.B., M.R.C.S., L.R.C.P., F.R.C.S.; (Feb. 28) C. L. Clinton Thomas, M.R.C.S., L.R.C.P.

Chaplains' Branch.

The following are granted commissions for the duration of hostilities with the relative rank of Squadron Leader on the dates stated:—(March 5) The Rev. J. C. Salisbury, the Rev. B. H. C. Wilson, B.A.; (March 7) the Rev. D. Johnston.

Errata.

In the *Gazette* of Feb. 23, 1940. For 747816 D. S. Waller read 747816 D. S. Wallen.

In the *Gazette* of Feb. 27, 1940. For L. E. Pierrard read L. E. Pierard.

Auxiliary Air Force

General Duties Branch.

No. 608 (NORTH RIDING) SQUADRON.—F/O. H. J. Williams is transferred to the Administrative and Special Duties Branch (Dec. 9, 1939).

No. 920 (WEST LANCASHIRE) SQUADRON.—F/O. W. Joanes, M.B.E., relinquishes his commission on account of ill-health (March 1).

No. 949 SQUADRON.—Lt.-Col. Lord H. Scott, C.M.G., D.S.O., D.L., is granted an honorary commission as Air Commodore (March 19).

The notification in the *Gazette* of Feb. 2, 1940, concerning Flt. Lt. G. A. W. Garland is cancelled.

Administrative and Special Duties Branch.

No. 603 (CITY OF EDINBURGH) SQUADRON.—A. Wallace is granted a commission as Pilot Officer with effect from Feb. 20, 1940, and with seniority of Nov. 29, 1939. (Substituted for notification in *Gazette* of Feb. 23.)

Women's Auxiliary Air Force

The following are appointed Assistant Section Officers (March 9):—Cpl. Miss U. M. Bradley, Aircraftwoman 1st Class Miss B. A. Brock, Aircraftwoman 2nd Class Miss H. A. Craig, Cpl. Miss D. Y. Delius, Aircraftwoman 2nd Class Miss A. V. Hamilton-Grace, Aircraftwoman 2nd Class Mrs. C. M. Moor, Cpl. Miss M. E. Prestwich, Aircraftwoman 1st Class Mrs. M. H. D. Russell Roberts, Cpl. Miss R. P. Watson.

Assistant Section Officer Miss N. M. Lloyd relinquishes her appointment, on account of ill-health (March 5).

Flight Officer Mrs. J. Graham relinquishes her appointment (March 15).

Flight Officer Mrs. J. E. Holcroft relinquishes her appointment on ceasing to be employed (March 15).

Erratum.

In the *Gazette* of March 12, 1940. For Cpl. Mrs. M. Ives read Cpl. Mrs. H. M. Ives.

Professor Hill's Appointment

PROFESSOR A. V. HILL, M.P., O.B.E., F.R.S., has been appointed as Assistant Air Attaché, Washington, for special scientific liaison duties. The appointment is a temporary one and has been accepted without remuneration.

FIGHTER STATION (CONCLUDED)

over and play the rôle of an enemy bomber. The Bristol flew across the aerodrome full out, which led one to suggest that, like the Spitfires' Merlins, the Mercurys were burning 100-octane fuel. But the Spitfires overhauled it and one by one simulated a stern attack "opening fire" at what must have been 400 yd. range. As one pilot broke off his attack and wheeled away another Spitfire closed in to cover him.

In the afternoon a flight of Spitfires staged some plain and fancy "beat-ups" of the aerodrome in formation (excellent vic and echelon) and singly after a peel-off. This

pastime is normally frowned upon, though a certain amount of *joie de vivre* is countenanced if the machines concerned are returning from a victorious interception or if they are demonstrating for pressmen. Here, again, the 100-octane fuel (which enables the Merlin to receive no less than 12 lb. boost in emergency) must have been an asset.

After this manifestation of power we found it restful to inspect small models of enemy aircraft which, although not entirely up to date, suffice to demonstrate, by means of luminous bulbs, the gun positions on the various machines. Thus the blind spots can be pointed out.

CO-OPERATIVE



The new Ryan YO-51 light army co-operation machine built to the Fieseler Storch formula. Fully slotted and flapped, it can be operated from extremely small spaces and is enabled to fly very slowly for artillery spotting.