

DECLASSIFIED Air Operations Against Sardinia And Corsica

JULY TO OCTOBER, 1943

A GLANCE AT the map is enough to indicate the strategic value of *Sardinia* to the enemy in the Mediterranean. From the air aspect, in particular, it provided good bases for the operation of torpedo-bombers against our Central Mediterranean shipping and for aircraft engaged in protecting enemy shipping en route to *Tunisia*. After the loss of *Tunisia*, Sardinian airfields were used as the bases from which long-range bombers attacked our North-west African ports.

In addition to the island's strategic position its lead and zinc industries provided the major part of the Italian output of those essential minerals.

From February onwards, the attacks by the North-west African Air Forces on Sardinian ports, bases and airfields were continuous and on an ever-increasing scale until July, when events obliged the enemy to concentrate his main Central Mediterranean air forces in *Sicily* and *Italy* — and later on the Italian mainland exclusively — leaving a depleted garrison force only in *Sardinia*.

Some idea of the scale of the North-west African Air Forces' bombing effort against the main Sardinian ports during the first half of 1943 is given by the following high-lights of the air activity against the port of *Cagliari*.

Forty-six U.S. Fortresses attacked the port on 28th February; 24 U.S. Fortresses on 31st March; and 107 U.S. Mitchells on 13th May, followed up by 22 Wellingtons during the night. The attacks on the 13th and the night 13/14th May practically neutralised *Cagliari* as a port.

Meanwhile, the harbours at *Terranova*, *La Maddalena*, *Carloforte*, *Golfo Aranci*, *Alghero*, *Porto Scuso*, and *Porto Torres* also felt the weight of Allied bombs.

The bombing of Sardinian airfields was particularly intensive during April and the week following the completion of the Tunisian campaign, 15th to 21st May. During April, for example, 130 tons of bombs were dropped on *Decimomannu* airfield and during the week 15th to 21st May the airfield received a bomb load of nearly 90 tons. Similarly, the *Elmas*, *Monserato*, *Milis*, *Venafiorita (Olbia)*, and *Alghero* airfields were all heavily attacked. In particular, the May attacks on the Sardinian airfields forced

the enemy to remove his long-range bomber force, which had been amassed for attacks on our ports at *Bone*, *Djidjelli* and *Oran*, to safer bases in *Southern Italy*.

The attacks on *Sardinia* from February to June, inclusive, seriously impeded the provisioning of the island, dislocated to some extent the railway communications, and greatly reduced the enemy's air strength. The following account covers our air effort during the closing stages of the enemy's occupation of both *Sardinia* and *Corsica*, from 3rd July to 4th October.

Reduced Bomber Effort

The heaviest bombing of Sardinian targets during the period under review occurred on 3rd July, when concerted attacks were made on some of the enemy's main airfields. These attacks, however, should be considered as the finale of the May and June effort and constituted the last big "crack" at Sardinian airfields before the more pressing commitments of the Sicilian campaign and subsequent invasion of *Italy* demanded the almost exclusive attention of the Allied and enemy air forces alike. On the 3rd, U.S. Fortresses flew 38 sorties against *Chilivani* airfield; U.S. Mitchells flew 68 and 36 sorties against the airfields at *Milis* and *Alghero*, respectively; and 25 U.S. Marauders attacked *Capoterra* airfield. The estimate of the damage caused was not so precise as for previous attacks because haze prevented the taking of photographs suitable for interpretation. Results were unobserved in the *Chilivani* raid but considerable damage appeared to be inflicted on the other three airfields attacked and strike photographs taken over *Milis* showed that of 43 aircraft present on the ground two medium bombers and four single-engined aircraft were destroyed. A Mitchell and a Marauder failed to return from these missions, but on the asset side Mitchells reported the shooting down of five enemy fighters over *Alghero*. Two nights later came *Villacidro* airfield's turn for a visit from seven Wellingtons and the attack was renewed the next night, 5/6th July, by eighteen more R.A.F. medium bombers; on each occasion the target seemed to be well covered by bomb bursts.

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The enemy's Sardinian air forces, however, had already been considerably reduced. Our air reconnaissance of the principal airfields at the beginning of July indicated that the German Air Force on the island numbered about 155 to 170 aircraft of operational types and the Italian aircraft 125 to 140, excluding a few Army co-operation and coastal aircraft; the above totals included approximately 150 ME.109s and FW.190s and about 120 MC.202s, 200s and RE.2001s. At the end of the following week, on the eve of the Sicilian invasion, air reconnaissance revealed a further reduction in air strength; in particular, the combined total of German and Italian fighter and fighter-bomber aircraft had fallen to about 230. By the end of the next week (16th July) it was clear that the fighter strength had been still further reduced; as there had been no Allied air attacks on the Sardinian landing grounds during that period, and aircraft had not been moved to new unknown landing grounds, it was certain that fighters had been removed from the island. From 16th July to the end of the Sicilian campaign, 17th August, the enemy's Sardinian air strength remained practically stable: the total number of operational aircraft (excluding a few Italian CA.311/313 Army Co-operation and CZ.501, 506 and RS.14 coastal aircraft) averaged about 190, of which 65 were ME.109s and FW.190s and 100 MC.202s, 200s and RE.2001s.

It followed that heavy bomber attacks on the enemy's Sardinian airfields were not necessary and the fighter sweeps and fighter-bomber attacks, mentioned in the following section, were sufficient to keep down the strength of the Sardinian defensive fighters.

Similarly, heavy attacks on the Sardinian ports could be dispensed with as our air reconnaissance made it clear that the enemy was employing only *La Maddalena* harbour, in the northern tip of the island, on a considerable scale and the wide dispersal area of the roads there presented an unsatisfactory target. The Wellington attacks on the barracks and railway station at *Cagliari* on the nights 30th June/1st July and 1st/2nd July, when 71 effective sorties were carried out, and the bombing of *Olbia* marshalling yards and military stores by 36 Wellingtons on the following night represented the finishing touches to the previous series of attacks before the entire Wellington effort was required against *Sicily* and *Italy*.

The Warhawks Take Over

In the latter part of July fighter sweeps over *Sardinia* by U.S. Warhawks of the Strategic Air Force became increasingly frequent and on several occasions the enemy's fighter opposition was on a greater scale than that encountered on missions over *Sicily* and *Italy* during the same period.

On 22nd July, for example, 48 U.S. Warhawks strafed gun emplacements and the railway station at *La Maddalena*, south of *Cagliari*, set

some large factories on fire south of *Villasor* and strafed schooners and road transport at other points. Twenty-five to thirty enemy aircraft were encountered of which seventeen were reported destroyed: two Warhawks failed to return. Four days later a force of 48 U.S. Warhawks again swept over *Sardinia* and of the ten MC.202s and two ME.109s encountered over the *Cagliari* area, one German and four Italian fighters were destroyed without loss. On the 28th a similar force continued their activity over the island and destroyed two MC.202s and probably destroyed another; one Warhawk was shot down by flak, but the pilot baled out. The following day 52 Warhawks swept over southern *Sardinia* without incident.

On 30th July the Warhawks of the 325th Fighter Group scored really sensational victories over the enemy's intercepting fighters. The story deserves to be told in some detail. Twenty Warhawks of the 317th Squadron took off at 08.00 hours and flew up the west side of *Sardinia* and then across the coast to due west of *Sassari*. As they turned to fly southwards over western *Sardinia* they were attacked near *Sassari*, about 20 miles to the north of a point fixed for a rendezvous with Warhawks of the 319th Squadron which were to arrive from the east. The attack was made at 09.35 hours by 25 to 30 ME.109s which were reinforced by nearly 20 more fighters, including some MC.202s, as the battle went on. The enemy first attacked from the north-west at the same height as the Warhawks were flying—9,000 feet. Almost immediately four ME.109s were seen to crash and in the next few minutes several more were shot down. As a result of a 20 to 30 minutes running fight 21 ME.109s were destroyed and three ME.109s and two MC.202s probably destroyed for the loss of one American fighter. The latter was believed to have accounted for four of the enemy before going down. The enemy pilots were courageous but undoubtedly "green", as their tactics and evasive action were poor in the extreme. It is possible that the enemy formation was made up of students from a training unit: at any rate, it was a veritable "slaughter of the innocents".

When the U.S. Warhawks made their next offensive sweep over *Sardinia* on 2nd August not a single fighter was airborne to meet them. The same tale was true of several other sweeps during the month.

Of the August offensive sweeps which resulted in combats with enemy fighters two of the most successful were carried out on the 7th and 28th, respectively. On the former occasion the Warhawks shot down two ME.109s without incurring any loss and on the latter enemy fighter casualties amounted to six ME.109s destroyed and four probably destroyed for the loss of one Warhawk which crash-landed in *Tunisia*.

For the first week in September, as indicated in the next section, the U.S. Warhawks concentrated on bombing and strafing attacks; during

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the next week several offensive fighter sweeps were carried out, but enemy fighters, which were now almost entirely confined to the central and northern landing grounds, refused to rise to the bait. Enemy air resistance over *Sardinia* was to all intents and purposes extinct.

Fighter-bomber and "Cannon Mitchell" Attacks

On a number of occasions the U.S. Warhawk sweeps over *Sardinia* were carried out with the primary object of delivering fighter-bomber attacks.

On 20th July, for example, seventeen escorted Warhawk-bombers successfully attacked dispersed aircraft on *Decimomannu* airfield and, in addition, shot down five of the twelve enemy fighters which intercepted them at the cost of one aircraft missing. The most successful of the fighter-bomber attacks in the following month was that delivered by 44 U.S. Warhawk-bombers on a factory and smelting plant at *Fluminimagiore* on the 28th; a by-product of the raid was the shooting down of six ME.109s without loss to the Warhawks.

During August, also, occurred the first "cannon Mitchell" (B.25 G) attack in the Mediterranean theatre of war. The attack in question was made on 5th August by four U.S. Mitchells, equipped with 75 mm. guns, on the large electric power switching station near *Guspini*. Three power lines entered the station and it was believed that these lines provided power for a large area in south-west *Sardinia*. The Mitchells, escorted by U.S. Warhawks, approached the target "on the deck", pulling up to 300 feet at a selected point about 4,500 yards north of the target; the building could not be identified, however, until the Mitchells were within 2,000 feet of it and fire was opened at this range. Nine rounds of high explosive shells were fired and direct hits were scored on the target; a ball of fire and flashes like lightning were seen to come out of the building and flashes and sparks ran along the power lines.

In early September the U.S. Warhawk-bombers turned their attention to *Pabillonis* landing ground, north of *Villacidro*, which accommodated a number of single-engined aircraft. In all, on 5th, 7th and 8th September a total of 112 U.S. Warhawk-bombers dropped 672 x 20 lbs fragmentation bombs on the dispersal area and runways with good results.

Fighter-bomber attacks, meanwhile, were made on industrial and other targets, and Wellingtons extended their leaflet dropping activity to the Sardinian east coast and over *Cagliari* and *Sassari*. On 1st September a small force of U.S. Warhawk-bombers scored direct hits with 500 lb. G.P. bombs on the *Iglesias* zinc plant. Two days later thirteen U.S. Warhawk-bombers attacked the radar installations at *Pula* and *Cape Carbonara*; one and a half tons of bombs were dropped at *Pula*, scoring five near misses, and slightly more at *Cape Carbonara*, where four

direct hits were claimed on what was believed to be a Freya surrounded by a blast wall. On the 5th the attacks on the *Pula* installations were renewed by four U.S. Mitchells (B.25 Gs), escorted by 36 U.S. Warhawks, which dropped a small number of 30 lb. bombs and fired sixteen rounds of 75 mm. shells. The attack was delivered from a height of approximately 200 feet and cannon fire was opened at 5,000 yards continuing to the target, where the bombs were dropped at minimum altitude. Direct hits were scored with the bombs but the result of the shelling was unobserved.

Attacks on Enemy Shipping

While the attacks on land targets in *Sardinia* mentioned in the above section were in progress, sea reconnaissance Wellingtons, Baltimores and Marauders kept up a continuous watch for enemy shipping off the Sardinian and Corsican coasts and according to the information collected air and sea forces were briefed to deliver attacks.

The most successful shipping strikes off *Sardinia* in July were made on the 26th. Shortly before noon three Beaufighters of No. 415 (U.S.) Squadron on armed reconnaissance along the east coasts of *Sardinia* and *Corsica* sighted and attacked seven barges covered with canvas awnings; as a result of cannon strikes one barge was left with smoke rising from it and another with its cargo on fire. A few minutes later four torpedo and four anti-flak Beaufighters of No. 144 Squadron on "rover strikes" in the same area destroyed a couple of ME.323 transport aircraft at the cost of one Beaufighter shot down by escorting enemy fighters. The torpedo-Beaufighters carrying on with their patrol then sighted and attacked an enemy convoy; one merchant vessel of 1,500 tons was blown up.

One of the most successful air attacks in Sardinian waters during August was that delivered by U.S. Strategic Air Force Warhawks on the 5th, when returning from escorting the "cannon Mitchell" (B.25 G) attack on *Guspini* switching station. A surfaced enemy submarine was sighted off the south-west tip of *Sardinia* and two Warhawks went in to attack; hits were scored on the conning tower causing a big explosion which was followed by flames and smoke visible at 5,000 feet. The submarine listed 20 degrees to starboard and went down by the bows with the stern pointing upwards. A third Warhawk then made an attack and the submarine disappeared, leaving a streak of yellow-green foam and oil. The submarine was chalked up as a "probable".

The September attacks on enemy shipping engaged in the evacuation of *Corsica* are mentioned later.

The Evacuation of Sardinia

The first definite signs that the enemy was getting ready to evacuate *Sardinia* were provided by the 3rd Photographic Group's coverage of the

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Sardinian airfields on 25th August. It was clear that the landing grounds at *Elmas*, *Monseirato* and *Capoterra* in the south had been rendered unserviceable and the reduced fighter force was then almost entirely concentrated in the north of the island. Later, after the capitulation of *Italy*, steps were taken to make all airfields and landing grounds unserviceable or ready for speedy demolition. Immediately prior to the evacuation of the island, also, the Germans destroyed such aircraft as could not be flown out; in particular, air photographs taken on 19th September revealed 47 additional destroyed aircraft on *Olbia/Venafiorita* airfield, including 40 believed to be Italian fighters. Later evidence suggested that these aircraft were destroyed when Italian pilots refused to fly them to *Corsica*.

Photographic coverage of the Sardinian ports in September also pointed to an imminent evacuation. During the first week of the month far less merchant shipping was reported to be entering *La Maddalena* and during the week ending 17th September an increased traffic in "F"-boats and Siebel ferries heralded the evacuation of the island, *Corsica* being used as a stepping stone to the Italian mainland.

During the week ending 25th September the German evacuation of *Sardinia* was completed and Allied troops and officials were landed. Of the three Italian infantry divisions on the island only one elected to co-operate with the Germans after the announcement of the Armistice and was evacuated first to *Corsica* and then to *Italy*.

Attacks on the Corsica Evacuation Route

In the latter part of September when it became evident that *Corsica*, also, was in process of being abandoned, the Strategic Air Force struck heavy blows at the enemy's evacuation route from *Corsica* to the Italian mainland. In particular, the Corsican port of *Bastia*, the port of departure for enemy troops (including those previously in *Sardinia*), and the reception port of *Leghorn*, *Northern Italy*, were heavily attacked. On the 21st, the newly-arrived U.S. Liberators made their first attacks from *North-west Africa*; 32 of the heavy bombers dropped 95 tons on *Leghorn*, hitting several of the small craft plying the evacuation route and damaging harbour installations, and 20 more dropped a bomb load of 55 tons on *Bastia* harbour, scoring hits on several vessels. The attack on *Bastia* was continued during the

night by 75 Wellingtons, which dropped 125 tons of bombs starting fires visible for 70 miles on the return journey.

In the last days of September a further attack was made on *Bastia* by 36 U.S. Mitchells, which attacked the airfield, and 80 Wellingtons bombed *Leghorn* harbour. On the 4th of the following month 35 U.S. Mitchells made the last attack on *Bastia*, dropping 53 tons of bombs on shipping and harbour installations.

Meanwhile, attacks were carried out on the enemy's evacuation craft in transit from *Corsica* to the mainland. In this connection the activity of U.S. "cannon Mitchells" (B.25 Gs), attached to the Coastal Air Force for shipping strikes, was particularly interesting. The method of attack was for four of these aircraft to approach the vessel selected for attack simultaneously. Cannon attacks were made at a height of 100 feet at about 5,000 yards closing in to 1,500 or 1,000 yards before a sharp break-away. Each aircraft also carried two 500 lb. bombs for skip bombing lightly defended vessels. During the week ending 24th September, in particular, the Mitchells flew fourteen sorties firing thirty-six 75 mm. shells at shipping targets between northern *Corsica* and *Elba* and scored hits on a destroyer and many small craft.

At the same time Coastal Air Force Beaufighters and Marauders attended to the enemy's transport aircraft playing their part in the evacuation. Thus on 24th September, in particular, Beaufighters of No. 242 Group shot down a total of nineteen JU.52s at various points between *Corsica* and the Italian mainland.

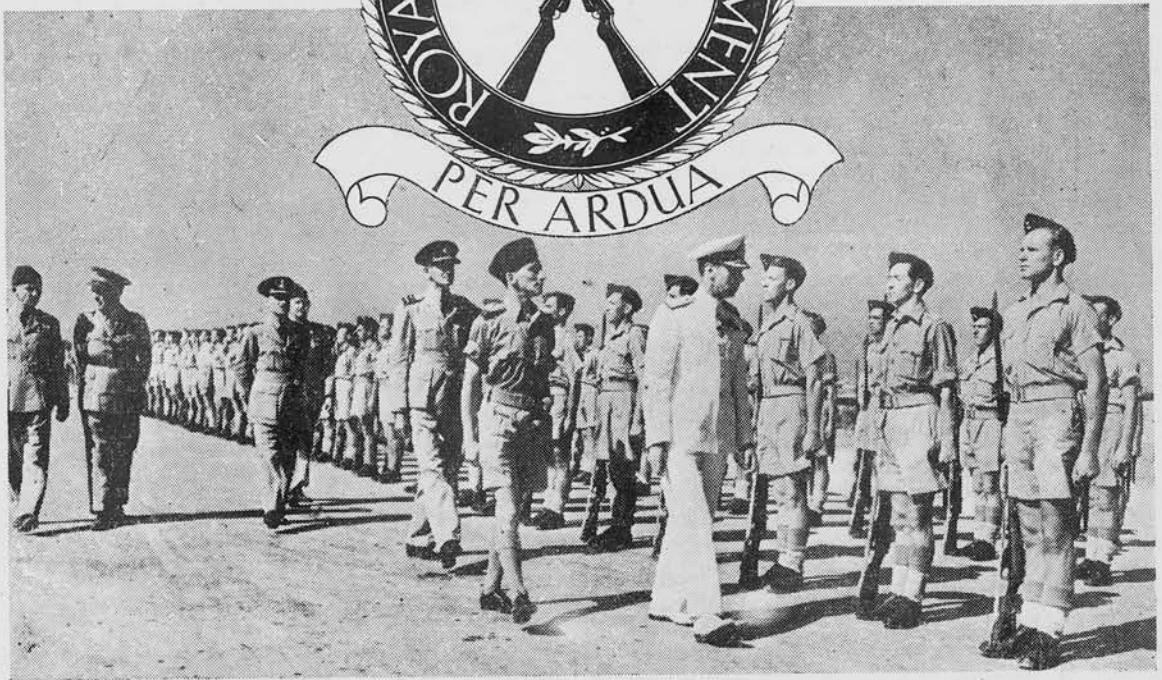
The Allies Take Possession

While the Germans were defending their final bridgehead around *Bastia* in the early days of October the Italian forces on *Corsica*, in the main, co-operated with the local patriots and resisted the German attempt to disarm them. Meanwhile, French reinforcements from *North-west Africa* were landed to increase the pressure on the withdrawing German forces. On 4th October *Bastia* was captured while the final evacuation took place from *Marmi di Luri*, twelve miles north of the city.

The four main island bulwarks — *Pantelleria*, *Sicily*, *Sardinia* and *Corsica* — were now in Allied hands.

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THE ESSENTIAL TASK of protecting the bases from which air forces work, driven home so terribly in *Europe* in the early stages of the war, led to the formation of the Royal Air Force Regiment.

In the critical days after *Dunkirk* the R.A.F. formed its own Station Defence Force to assist the Army to defend the airfields of *Britain*, then gravely threatened. This force, composed though it was of excellent material with a good leavening of ex-Army Officers and N.C.Os, was necessarily a make-shift expedient. It had neither the up-to-date training nor the equipment needed to meet the expected attack by the German Army. It was an alleviation of the situation, but Army garrisons still had to be maintained on important airfields.

The Regiment Formed

In order to release troops for the Field Army, however, the R.A.F. took over the whole responsibility for local defence of its airfields in *Britain*, and in February, 1942, the Station Defence Force was expanded into the R.A.F. Regiment. The R.A.F. still acted as agent of the Army and only within the radius of its airfields. The local Military Commander was still in supreme control.

The newly-formed Regiment was supplemented by the machine-gunners of the A.A. flights, which had long been established on R.A.F. Stations. The Army gave generously of experienced officers and N.C.Os, of training facilities and of equipment. The Regiment was constituted, however, as an integral part of the R.A.F., so that its offi-

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officers and men would fit harmoniously into the general life of the station. Its units were given Air Force names and its personnel carried Air Force ranks.

In *Britain* the functions of the R.A.F. Regiment were, and still are, chiefly to garrison static airfields against ground or low-flying attack. The units are trained in mobile defence, not on the old lines of a pill-box scheme. In these days of man-power shortage, it is impossible to strengthen them sufficiently to make the defence of every airfield their sole charge. The station personnel, officers and men of the Air Force, engaged in the many ground tasks, are also trained and armed to defend their own airfield in time of need. The Regiment works alongside them, as the hard core of the defence, and administratively it is organised in common with all other Air Force units on a station basis.

Misemployed in the Middle East

In the Middle East the R.A.F. Regiment was rather slow in getting into its stride. From the end of October, 1941, to the beginning of 1942 there were approximately 5,000 ground gunners in the command, who formed a useful nucleus. During February and March, 1942, drafts from the United Kingdom brought the strength up to approximately 8,000 men. Little training, however, could be carried out, as the gunners were normally used as static guards by night and misemployed — even in such capacities as mess or latrine orderlies — by day.

Better progress was made after September, when a Middle East Order formed the 8,000 odd gunners into 226 flights. The establishment for each flight was one P/O or F/O and 360 N.C.Os and airmen. The gunners were armed with rifles, light machine-guns and Sten guns. This formation into flights enabled mis-employment to be stamped out and organized training to begin.

One of the facts brought out by the formation of the gunners into flights was an acute shortage of officers — a deficiency of 65 per cent. An R.A.F. Regimental O.C.T.U. was, therefore, formed at *Amman* in October, and the officer shortage gradually lessened.

Conditions are Different

When the Regiment was founded in the Middle East its personnel were scattered over an immense territory, on airfields in such widely separated places as the Western Desert, *Iraq* and the *Sudan*. To weld them into an unified force with a regimental pride was a task indeed in such circumstances; moreover, the officers in command had to suffer all the growing troubles of lack of equipment, shortage of officers, and so on. These difficulties were all met, and though they have by no means yet been entirely overcome, the R.A.F. Regiment in the Mediterranean area has been turned already into something much more than a generic name for a number of scattered units.

As in *Britain*, the Army was generous in its help, providing first-class officers and N.C.Os to conduct training, and the highest standards were set for the training of the men.

In the Middle East, where conditions were different from those in England, the functions of the R.A.F. Regiment varied considerably. Airfields in this theatre for the most part were not static bases. They moved with the speed of an expeditionary force. In the Middle East and North Africa, therefore, the Regiment has regarded as its duty the performance of every possible service on the ground in the protection of the mobile squadrons of the R.A.F.

The primary aim the Regiment set itself was to speed up the advance of the air forces by giving their ground convoys protection on the move, and by going ahead of them to clear landing grounds of the enemy. To these functions they later added that of clearing runways of land mines. It was found that complete clearance of the mines was impossible for the sappers, who were compelled always to be moving on; special units of the R.A.F. Regiment were, therefore, trained in this essential task.

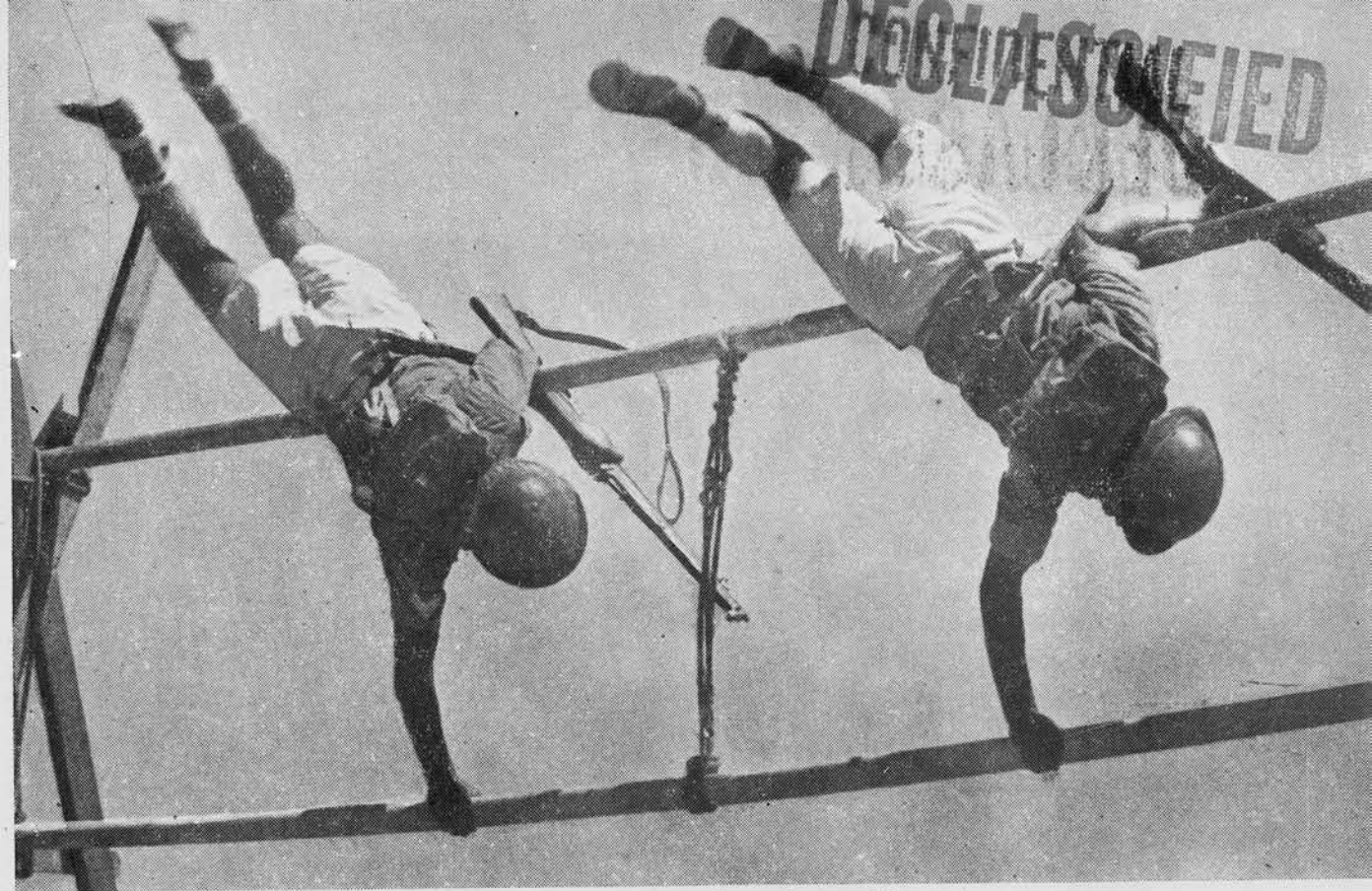
The October Advance

The manoeuvres in which flights were trained were put into operation in the Western Desert autumn offensive of 1942. They advanced over the desert with the squadron convoys to protect them en route. As they approached to within some twenty miles of the target airfield, the trucks of the Regiment moved on ahead. A short distance from their destination the men left their vehicles, deployed, and went forward as infantry to secure the landing ground. Once they had secured the landing grounds on the advance, the flights of the Regiment threw protective screens around them. Other small parties went on ahead to assist in the location of new landing grounds or, sometimes, in their rapid construction.

More than once, notably at *Daba* and *Fuka*, they found themselves opposed by strong pockets of the enemy, of whom they successfully disposed, taking their first prisoners, some 350, mostly Germans. The battles they fought were small engagements, but none the less intense, and the Regiment suffered casualties at *Mersa Matruh* and elsewhere.

The Regiment also won its first award, which is referred to in the following message from the Under Secretary of State for Air to No. 1459700 A.C.1. Bullen:— "I would like to congratulate you on the award of the Military Medal for your gallantry in action in November, 1942, and again in December, 1942. I have seen the citation and your achievements are in accord with the finest traditions of the R.A.F. Regiment which have been so well laid in the comparatively short time which the Regiment has been in existence. You are the first man of the Regiment to receive an award for gallantry and this registers a landmark of which you and your fellow members of

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Live ammunition is used in exercises.

Sighting one of the Regiment's double purpose guns.



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the Regiment can justifiably be proud. All good luck to you and your fellow members of the Regiment in the coming months."

The desert flights of the R.A.F. Regiment marched with the VIIIth Army throughout the advance to *Tunis*. They contributed greatly, even in those early days of their formation, to the speed with which the squadrons of the Allied air forces were able to move forward over the desert, and thus to keep always within range of the retreating enemy.

Units of the Regiment also took part in the 1st Army's operations from the other side of *North Africa*. In the landing one of the Regiment's transports was torpedoed, so the baptism of fire came early. In the first few days of the campaign the A.A. flights had several successes to their credit and suffered casualties themselves. Generally speaking, their role was the same as it was with the VIIIth Army. When not actively engaged in protecting the landing grounds, squadron personnel were often sent up to the line with the 1st Army to gain battle experience.

Preparing for a New Role

In the desert campaign, the R.A.F. Regiment was equipped and trained principally as a mobile infantry force. With the cessation of hostilities in *North Africa* in May, 1943, it was foreseen that another role would be required of the Regiment in *Sicily* and elsewhere. A Middle East Order formed the flights into squadrons—the establishment being one S/Ldr. and one F/Lt. on headquarters and six flights to a squadron—and training and equipping of selected squadrons was begun for the formation of special Field Squadrons and A.A. Squadrons, for mobile and static defence duties.

The Field Squadrons provide a mobile striking force against possible paratroop landings and their role requires that, in addition to normal infantry weapons, they are equipped with reconnaissance cars and anti-tank guns. The establishment of a Field Squadron is : three Rifle Flights, one Armoured Flight (six armoured cars) and one Support Flight (four two-pdr. or six-pdr. guns).

The role of the A.A. Squadrons is to give static defence against low-flying attack. Each squadron consists of three flights, each armed with eight 20 mm. Hispano cannons.

Both types of squadron go through an intensive training up to commando standard, the battle drill being conducted with ball ammunition.

The Invasion of Sicily

When the Sicilian campaign opened on 11th July, the Regiment was soon in the picture. One A.A. squadron was among the first troops to land and the balance followed in the second wave.

Altogether, nine squadrons took part in the campaign; three sailed from the Middle East and ten came specially from the United Kingdom, four of which were held as reserves in *North Africa*.

Even before they landed, some of the squadrons came under fire when the ships bringing them over were attacked off *Sicily*. Two squadrons lost most of their M.T., stores and equipment when a transport went down in *Syracuse* harbour. In the early days, however, more casualties were caused by malarial mosquitoes than by enemy action.

Although the Regiment's role was entirely A.A. defence, its personnel had the distinction of being the first British troops on *Catania* airfield. Squadrons saw their most concentrated action on 11th August during heavy bombing attacks on *Lentini*, *San Francesco*, *Scordia* and *Agnone* landing grounds. One squadron defending *Lentini* lost six men killed by direct hits on their posts and three seriously injured, who died later. In another squadron four men were killed and three injured. Several personnel who kept their guns going under extremely difficult circumstances were recommended for awards. Altogether, in the Sicilian campaign the Regiment had two officers wounded, thirty-one other ranks killed, twelve missing and fifteen wounded.

Operations in the Aegean

From *Sicily*, when the time came, squadrons moved into *Italy* with the rest of the invasion force, and are still doing good work there. Another of the Regiment's commitments was in connection with the operations in the Aegean Sea. Six squadrons were detailed and one of them that went to *Cos* was the first R.A.F. Regiment unit to be transported into action complete with its weapons by air.

Pride of Regiment

It is obvious from this brief account that the R.A.F. Regiment in the Mediterranean area has made great strides in the last year. At the end of September, 1943, total strength in the Mediterranean was approximately 10,800 men.

The Regiment is an integral part of the R.A.F., and though it is organized and trained primarily as a fighting force for the defence of airfields against attack, it must be ready and willing to turn its hand to any task that will assist the R.A.F. to maintain its operational efficiency. The exigencies of war may make a variety of demands on the Regiment; these demands will be freely met, provided that the primary role of the unit is not thereby interfered with.

In a word, the Regiment is developing into a well-trained, disciplined body of men, and a very noticeable pride of regiment is showing itself.

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ATTACK ON PLOESTI

THE FIRST ASSIGNMENT of the U.S.A.F. heavy bombers in the Middle East was a raid on the Rumanian oil refineries at *Ploesti*, near *Bucharest*. This operation, known as "Halpro," was carried out in June, 1942, by thirteen Liberators of Colonel Halverson's detachment. Unorthodox tactics were used. No attempt was made at concentrated bombing, but aircraft were briefed to fly at great height and bomb individually through breaks in the cloud or when they were estimated to be over the target. The damage inflicted by these methods was not thought to be extensive and five of the Liberators forced-landed in *Turkey* on the way home.

Over a year passed before the next attempt was made to smash this vital target. Some idea as to how vital it is to the Axis may be understood when it is known that the Rumanian oilfields

produce some 5,200,000 tons of crude oil a year—approximately a third of the total output from all sources in enemy-occupied *Europe*. Of this total the six main *Ploesti* refineries produce about four million tons. In addition to the refining and cracking plants, *Ploesti* houses *Rumania's* only paraffin wax plant and considerable facilities for the production of lubricating oils. Thus, serious damage to *Ploesti* would deal a devastating blow to the Axis war machine.

The Attack Carefully Planned

Every effort was, therefore, made to ensure that the second attack was as successful as possible. Plans began to be laid as far back as April, 1943. Among the factors that had to be taken into consideration were the number of aircraft that could be available in view of other

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operational commitments; the type of attack most likely to succeed; the forecasting of most suitable weather conditions; the extent of possible air and ground opposition in the target area; and the provision of the best reconnaissance aircraft for assessing the damage after the attack.

As regards the aircraft available, there were already two U.S.A.F. Bombardment Groups, Nos. 98 and 376, flying Liberators, in *Cyrenaica* in the early summer. For the operation three more Liberator Groups—Nos. 44, 93 and 389—flew out from the *United Kingdom*. Between them they represented a formidable maximum striking force of some two hundred aircraft.

It was decided that the type of attack most certain of success was from as low a level as possible, a hundred feet being the minimum, using 1,000 and 500 lb. H.E. bombs, fused from 45 seconds to six hours delay, and four lb. British and 100 lb. American incendiaries. The attack was to be as concentrated as possible—a complete reversal of the tactics employed in the previous year. It was estimated that to achieve the effect of one concentrated low-level attack twenty high-level attacks would be necessary.

The weather, according to the meteorologists, was likely to be most propitious in late July or early August, and the attempt was finally scheduled for 1st August.

Enemy opposition was reckoned by Intelligence to comprise 80-100 fighters, 60-100 balloons, strong A.A. defences and smoke screens.

For subsequent reconnaissance, two long-range Mosquitoes were made available. In addition, for assessing the damage, an American authority on the effects of explosives on oil installations, who had a close knowledge of the *Ploesti* refineries, came over specially from *Washington*.

Training the Aircrews

An intensive training course was prepared for the air crews. A motion film demonstrating methods of low-level attack was flown over from *England* for the crews to study. Models of the main *Ploesti* plants were made and photographed for use as target maps. Various types of bombs were experimented with and, of course, all crews carried out as much low-level approach and bombing practice as possible.

One of the most stressed points in the briefing was that aircraft should arrive simultaneously over the target area, in order not to lose the value of surprise and to reduce the possibility of effective counter-measures being taken by the defenders. Crews were ordered to withdraw after the attack at low-level until the aircraft were clear of the ground defences. It was reckoned that the aircraft would be airborne for approximately twelve or thirteen hours in order to cover the two thousand odd miles to *Ploesti* and back.

Groups of aircraft were each given a special objective to deal with in the target area, both at *Ploesti* itself and at *Campina*, fifteen miles to the

north-west, and at *Brazi*, four miles to the south, where certain of the refineries were situated.

The Raid Carried Out

Between 04.00 and 04.30 hours on 1st August a force of 177 Liberators took off, made up of 37 aircraft of the 44th Bombardment Group, 37 of the 93rd, 46 of the 98th, 28 of the 376th and 29 of the 389th.

The weather on the way out was on the whole favourable, although over mountain areas in *Albania* and *Yugo-Slavia* there was a considerable amount of cloud or haze, with scattered showers, which at times made visibility poor. While flying over *Yugo-Slavia* and parts of *Rumania*, crews observed people waving, signalling "V"s with torches and flashing mirrors; this use of mirrors had been reported a few weeks earlier during a raid on airfields near *Athens*.

Out of the 177 aircraft briefed, 127 are thought to have reached the target area. Unfortunately, the cloudy conditions encountered caused some of the Liberator formations to split up. As a result, a few aircraft arrived half an hour before the main force, thus lessening the shock of complete surprise and stirring up something of a hornet's nest. A smoke screen was put into operation, but was ineffective; balloons were rushed up, but not more than about fifteen; light A.A. and machine gun fire was intense and heavy A.A. was used in low cross fire; and ME. 109s and 110s, FW. 190s, JU. 88s and even some unidentified and obsolete biplanes engaged the attacking force.

The Mission Completed

In spite of these counter-measures, the Liberators dropped $197 \times 1,000$ lb. H.E., 292×500 lb. H.E., 202 S.B.C. 4 lb. incendiaries and 107×100 lb. incendiaries, from heights varying from 100 to 700 feet. Those that came back reported a successful attack, the estimated result of which, after the reconnaissance Mosquitoes had returned, is given below.

The five bombardment groups involved met with varying fortunes. The 37 aircraft of the 44th Group all reached the target and deposited 64,640 lbs. of bombs from 120-250 feet. In addition to the A.A. fire, they were tackled by fighters, of which they claimed thirteen destroyed and one damaged.

Of the 37 from the 93rd Group, five returned with technical trouble and the other 32 dropped 113,300 lbs. of bombs from 150-300 feet. Some eight enemy aircraft were encountered, four making attacks near *Bucharest*. One ME. 109 and one FW. 190 were claimed as destroyed.

Of the 46 aircraft from the 98th Group, five had to return early to base. Those that reached the target dropped 55,640 lbs. from an altitude of from 200-250 feet. They were more heavily attacked by enemy aircraft than any other group, and out of a total of approximately 50 engaged, they claimed 33 shot down.

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A photograph taken during the attack on the Colombia-Aguila Refinery, which resulted in extensive damage necessitating almost complete re-building.

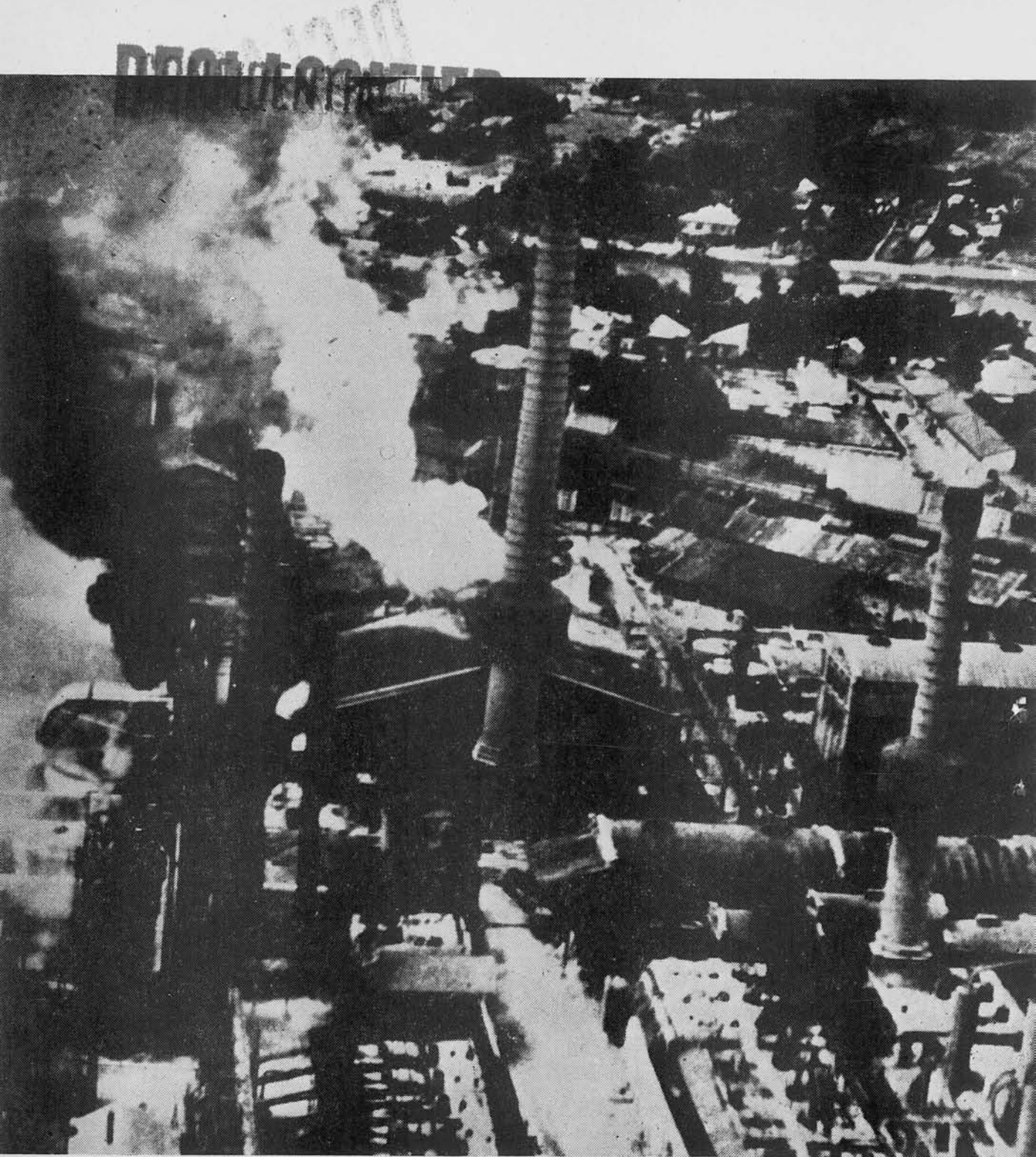
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A striking photograph showing the low height at which the Liberators attacked the Ploesti refineries.

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*Direct hits on the power and boiler houses in the Steaua-Romana oil refinery
at Campina.*

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All except two of the 28 aircraft from the 376th Group reached *Ploesti*, dropping 62,000 lbs. of H.E. bombs and ten clusters of incendiaries from 125 feet. A few ME.109s and F.W.190s were seen, but they were not keen to attack the Liberators and one ME.109 was claimed to be destroyed.

Nineteen out of 29 from the 389th Group dropped 67,000 lbs. of bombs on targets at *Campina* from 200-700 feet. They claimed two enemy aircraft destroyed.

The final assessment gave 54 Liberators lost, including eight that landed in *Turkey*, twenty over the target, two in the sea and twenty-four unaccounted for. Five more were written-off landing in friendly territory. Between them, the Liberators claimed 51 enemy aircraft destroyed and one damaged.

Adventures of an H.S.L. Crew

One of the eight aircraft regarded as landing in *Turkey* actually landed in the sea just off the Turkish coast near *Manavgat* in the *Gulf of Antalya*, north-west of *Cyprus*. The crew were spotted on the shore by an Air/Sea rescue Wellington on 2nd August and a high-speed launch was despatched. The officer in charge of the launch, on learning that the Americans were injured, went ashore with four men to assist them.

The five members of the H.S.L. crew were interned by the Turkish authorities along with the Americans, and the launch was ordered to leave the shore. The corporal in charge, on reaching base, reported what had happened.

On official representation being made, the five members of the crew were released and an H.S.L. was allowed to pick them up from *Mersin* a few days later.

The Damage Assessed

To augment the preliminary estimates and photographs of damage brought back by the attacking force, a Mosquito was briefed to carry

out reconnaissance on 10th August and a similar reconnaissance was made on the 19th. On the first occasion the Mosquito did the 2,000 mile return trip in six and a half hours; on the second occasion in three quarters of an hour less.

A study by experts of all the available reports produced the following estimate of damage done:—

In general, although a certain amount of speculation is necessary, a high degree of short-term damage and a promising degree of long-term damage was caused.

Over 40% of the cracking capacity put out of action for at least 4 - 6 months. The original refining capacity of 24,275 tons of crude oil per day probably reduced by 10,360 tons.

The most heavily damaged refineries were reckoned to be the Creditul Minier at *Brazi*, the Steaua Romana at *Campina*, and the Colombia Aquila and the Astra Romana at *Ploesti* itself. Damage was also done to the Orion and Concoridia Vega refineries.

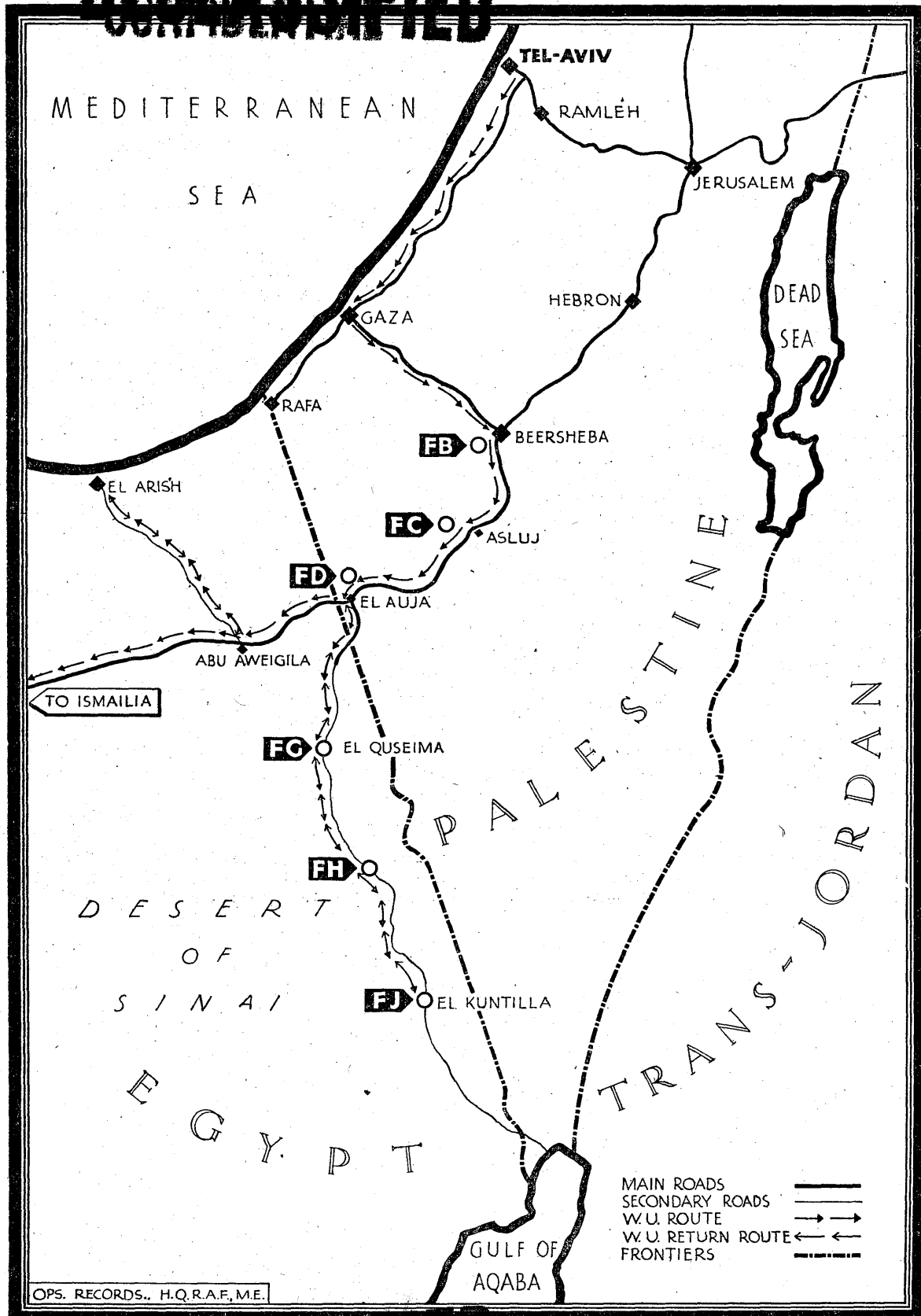
In addition, *Rumania's* only paraffin wax plant would be immobilised for a long period and the lubricating oil supply position at least temporarily jeopardised.

Air Chief Marshal Sir Arthur Tedder, in a congratulatory message, described the attack as "a big job magnificently done." A Rumanian Cabinet Minister remarked that "it was as if the bombers were postmen each with a letter for its particular address to which it was duly delivered." The German radio quoted a Bulgarian paper as saying that the American government had had to offer the aircrews 10,000 dollars, medals and leave to induce them to take part in the raid, and that as so many aircraft did not return to base, the government would be saved a lot of money....

It may certainly be said that the operation compensated amply for the disappointment of the first attack on the *Ploesti* refineries and that one more heavy blow was added to the many being dealt against Nazi Europe.

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In The Wilderness

THE FOLLOWING ARTICLE was originally supplied, neatly bound in book form with photographs facing the typescript, as an appendix to the Operations Record Book of No. 29 Wireless Unit for June, 1943. It is reproduced in this number of the R.A.F. Mediterranean Review as an account of the life and work typical of many isolated but essential units of the R.A.F., and is of special interest to those engaged in more active theatres, unaware of the monotonous routine unselfishly and patiently borne by personnel less fortunate.

The story is the visit by the Commanding Officer to the six Observer Outposts in north *Sinai* under his control; it is reproduced, with but slight essential modifications, as written by him.

The Start to Post FB.

We leave our Headquarters at 17.30 hours after dinner, and at 19.45 hours we are passing through *Beersheba*. The first post, FB, is now only seven miles along the road to *Bir Asluj*.

The party consists of the C.O., a Corporal, who is the unit topographical expert, and an L.A.C. who combines the duties of travelling canteen manager and cameraman. This is a pay and mail run, but apart from the pay our most valuable cargo is the canteen, which includes two crates of beer that we are taking to the members of our tribe who thirst in the wilderness.

It is dusk when we reach Post FB. We are bringing both pay and letters and parcels from home and are therefore welcome visitors.

The post personnel are paid, and our Corporal goes off to inspect the observer site and check the post lay out; the L.A.C. is taking a bulk order for canteen supplies from the senior wireless operator and the C.O. sits talking with the Post Commander, discussing hurricane lamps, primus stoves, how to treat scorpion bites, the new reporting procedure, the relative qualities of charpoys and table tops for sleeping purposes and a variety of other topics. The Post Commander gives the C.O. his written report on the Post activity for the preceding week. He is complimented on the condition of his Post which is particularly clean and well organised.

It is getting late. Two of the Ground Observers sit playing draughts. We have a cup of tea and then turn in.

The next morning the Post guard wakes us soon after five o'clock. The duty wireless operator must be on watch by five minutes to six and we wish to make an early start in order to travel in the cool hours of the day.

As we leave for *Bir Asluj*, the duty observer is reporting a *Sunderland*. This is a regular plot, and one that is looked for daily.

Bir Asluj, 20 miles further on, is a staging point for military traffic travelling between *Egypt* and *Palestine*. Here is the D.I.D. from which all the post rations and petrol are drawn. By rationing locally and not from Base, fresh supplies of meat and vegetables and even ice can be issued daily to all posts.

At Post FC.

Post FC is on a hill overlooking this encampment. The Post is provided with transport and the Post Commander is responsible for looking after the airmen at Post FB. He sends them rations and water daily and brings each man in turn to *Bir Asluj* to have a shower or to see one of the occasional cinema shows down at the Staging Post.

As we climb up the hill in bottom gear, we see the observer with his binoculars trained to the heavens. Perhaps he wishes to impress us by an assiduous performance of duty.

In present deployment, the Posts form a secondary screen supplementing existing cover on the coast, in the Canal Area, and along the *Gulf of Suez*. Air traffic follows the coast line and aircraft are very rarely observed in the other parts of *Sinai*. It says much for these airmen that they should cheerfully and conscientiously remain at their observation posts during the hours of daylight looking around at a sky that remains disappointingly empty. "They also serve who only watch and wait."

At Post FC, we find the Sergeant i/c Ground Observers. The routine visits of the senior N.C.O.s, either the Sergeant i/c Ground Observers or the Sergeant Wireless-Operator-Mechanic, involve much more detail than the C.O.'s inspection.

Each senior N.C.O. works to a planned programme and the following are a few of the duties which he carries out: examines all paybooks and verifies that their safe custody is ensured; checks conditions and custody of arms; arranges for respirators to be tested and worn for ten minutes by all personnel; carries out aircraft recognition tests for all personnel; checks post copy of unit standing orders to ensure that the amendments have been entered and signed; examines Post comforts, football, gramophone and records, draughts, books, chess, etc.

But those are only six of the duties; the full catechism for the visiting Sergeant with his assisting Corporals and airmen combines forty-two separate detailed instructions! The visiting Sergeant with his assistants is allowed half an hour a day for "down time" and is very interested in the highest possible standard of efficiency.

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Aircraft recognition training is given to all personnel, including Wireless Operators and M.T. Drivers, a report being given to the C.O. of the results obtained by each airman.

Knowledge of aircraft recognition can only be tested by using standard test papers, silhouettes, photographs, etc. Ground Observers with two or three years overseas experience, posted in from other wireless units, where they have undergone real active service conditions, and have observed many types of both hostile and allied aircraft, comment on the high standard of recognition of our original ground observers who are, of course, very much less experienced.

The morse test which follows is not only given to Wireless Operators but to Ground Observers. At present, four practice buzzers have been issued to the six Posts. Although progress is not very rapid, there are a few who can boast their eight words a minute and one Corporal Ground Observer, with civilian experience, has reached the dizzy height of fifteen words per minute.

Each Post has been issued with a copy of A.P. 1762 "Electrical and Radio Notes for Wireless Operators." This is provided to assist the Wireless Operators in improving their technical knowledge. Operators on an Observer Post are at a disadvantage as compared with those employed on a main station, where the advice and assistance of N.C.Os is constantly available to help them improve their trade proficiency. The unit operators, however, receive oral tests from the visiting Wireless Operator N.C.Os and the Sergeant Wireless Operator Mechanic. This is to make sure that they are reading and can understand the text book issued to them.

The Corporal Wireless Operator touring the Posts with the Sergeant i/c Ground Observers is now making a 50 hour test inspection of an "Alco" petrol electric generating set. Until recently, the unit was using very low capacity accumulators (twelve volt fifteen a.p.h.) and all Posts were handling a great deal of W/T traffic. The maintenance of these generators then constituted a very difficult problem. Breakdowns were frequently occurring primarily due to the excessive running, which necessitated constant re-charging.

As he overhauls the generator, the Corporal explains to the Senior Wireless Operator what he is doing, advises him on the maintenance and refers him to the operating instructions contained in the unit standing orders.

The aim of all Post training is to reduce the maintenance required from Headquarters to a minimum. Preparation is being made for the day when it may be impossible for help to be sent out from Base immediately a Post is "off the air." When the Ground Observers can tap out an emergency W/T message and the Wireless Operators can diagnose and deal with simple faults in their equipment, this ambition will have been achieved.

Leaving that hive of industry, Post FC, we drive on to *Auja*.

Post FD at *Auja*

Auja, which is a frontier post of the Palestine Government, was a former Byzantine town. There are the ruins of a church and a monastery and, of more recent origin, the disused buildings of a Turkish hospital of the last war.

The observer personnel are accommodated in some permanent buildings, and as we approach along the road, which sweeps round to the frontier barrier, the duty observer, high up on the ruins on the hill, overlooking the Police Post, notes our arrival. We are too far away to see him lift the receiver of his field telephone but there is no doubt that already he will have warned the Post Commander that the C.O. is coming. With two or three minutes warning of our arrival, there is time to put the kettle on, or, perhaps, what is more urgent, there will be time to carry out some very hurried straightening up before we pull up at the door. Thus does an efficient warning system work!

At this Post a sub-control is operated. Three large rooms in the police outbuildings are occupied, one is for sleeping quarters, another is the signals room and the third is used as a W/T equipment store.

W/T communication with Ismailia Filters, to which the unit report, is exceptionally good from here, and a twenty four hour watch is maintained.

The unit airman wireless mechanic is stationed here and can quickly proceed from this convenient sub-headquarters to carry out repairs. The unit signals Sergeant and the Corporal wireless operator, whom we met on Post FC, remain down here, staying for alternate weeks and are responsible for the general technical supervision of the screen.

The absence of plots in this area has been referred to before and it seems particularly unfortunate, when an excellent frequency for W/T communication has been allotted, that there should be so little traffic.

The set in use at this post is a ground station pattern and is very useful for continuous operating. It would be very cumbersome in a 180 lb. tent but in present circumstances where there is ample room it is ideal.

The Post Commander of FD is responsible for obtaining water, rations and petrol from *Asluj* for his own post and the remaining three, sited at intervals of twenty to twenty five miles along the road running south from *Auja* down to the *Gulf of Aqaba*.

On to Post FG.

We leave the tarmac *Sinai* road and follow the track down to Post FG; this is rutted, with occasional patches so bad that the Dodge, bouncing on its hard springs, lifts us six inches from our seats. Any speed above 20 miles per hour is sheer purgatory.

Then, following the old Turkish railway track we arrive eighteen miles from *Auja* at *El Qusei*.

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The first Post, FB.

Observer on duty at Post FC.



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Aircraft recognition training.

Observer on ruins at Post FD, Auja.



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ma. This is another frontier post. The surroundings are not quite so arid as the country we have passed through. There is a spring and a small grove of eucalyptus and palm trees. We have been warned not to use this water and the trailer Bowser, which we use for the Posts in this area, is filled at *Auja*.

After signing our names at the frontier we take the left hand fork, the road to *Kuntilla*, and one mile further we come to the site of Post FG.

Even in the wilderness it is possible to create order if only on a small scale. The neat planning of this little camp seems to cry a brave defiance against the rude chaos of the rugged surroundings.

The Post Commander advances from the tent door. He stands between two small cairns adorned with bunches of camel thorn. For a moment we think that these are two gate posts, and the line of stones on each side is a garden wall. Instinctively we look through the gate along the short path, expecting to see the door of a suburban villa bearing the legend :

"The Cedars."

It is after one o'clock and getting very hot. Perhaps the heat accounts for our hallucinations. At any rate, we feel our early rising has justified a siesta. With the Post Commander's permission we occupy three of the neatly made up beds and doze contentedly until half past three.

Post FG is at the foot of a hill named *El Jeisi*, rising to 444 metres. The observation point is on top of the hill, some ten minutes rough going from the camp.

We telephone to the duty observer telling him that we are coming up to see him. It is quite a stiff climb and we are much too short of breath to do anything except observe our surroundings when we reach the summit.

It is really an excellent observer site, the view to the south extending nearly 30 miles. There are higher hills to the north, east and west but these are so far away that, in this generally somewhat hazy atmosphere, aircraft would not in any case be discernible at such a distance.

The observer seems pathetically glad to see us. This is not very surprising since the poor devil must feel very detached from human intercourse all alone on this barren peak. This observer, one of our crack recognition experts, has seen neither an aircraft nor even a bird in eighteen days.

Instructions were sent out from Unit Headquarters to these three southern Posts to keep a record of the details and time of passing of all transport proceeding along the road. The unit will be able to furnish information therefore in the event of vehicles being delayed or breaking down along this route.

Halfway down the hill we see the camp lying before us.

The three 180 lb. tents are joined together with their flaps fastened up. The one tent thus form-

ed is sited so that the prevailing breeze in the valley will blow right through. The tents are not dug in; drills and dynamite would be required for parts of this ground which is granite hard. The normal scale of issue of tents for each Post is two. By collecting those which were issued for Post FD, and not required by them, and supplying two extra from Base, four Posts in the isolated sites now have quite spacious accommodation.

In the foreground is the latrine surrounded by a screen. This is of the deep trench variety and in our view the most satisfactory for these conditions. The Medical Officer, R.A.F., *Ramleh*, whom we consulted, advised us that the alternative variety, the bucket latrine, should only be employed if proper incineration facilities are available. The complete freedom from gastrointestinal complaints in the unit may, perhaps, be taken to indicate that the sanitary arrangements have so far been satisfactory.

To the right we can see the G.M.C. truck newly arrived from Post FD. It must be getting near five o'clock, for the ration truck always arrives about this time.

Food is a matter of interest for all mankind but to the airman on an observer post it is the supreme factor in life.

We have already said that the Posts are supplied daily with fresh rations, and each holds an up-to-date scale of ration entitlement. Each Post Commander therefore is able to verify that a full issue is made for the personnel of his post.

All the Posts report that their rations are excellent. Indeed, airmen returning to Headquarters after being on a Post for some weeks complain bitterly of the quality of rations at Base, making invidious comparisons between the efficiency of the commissariat organised on their Post and that at the Unit Headquarters.

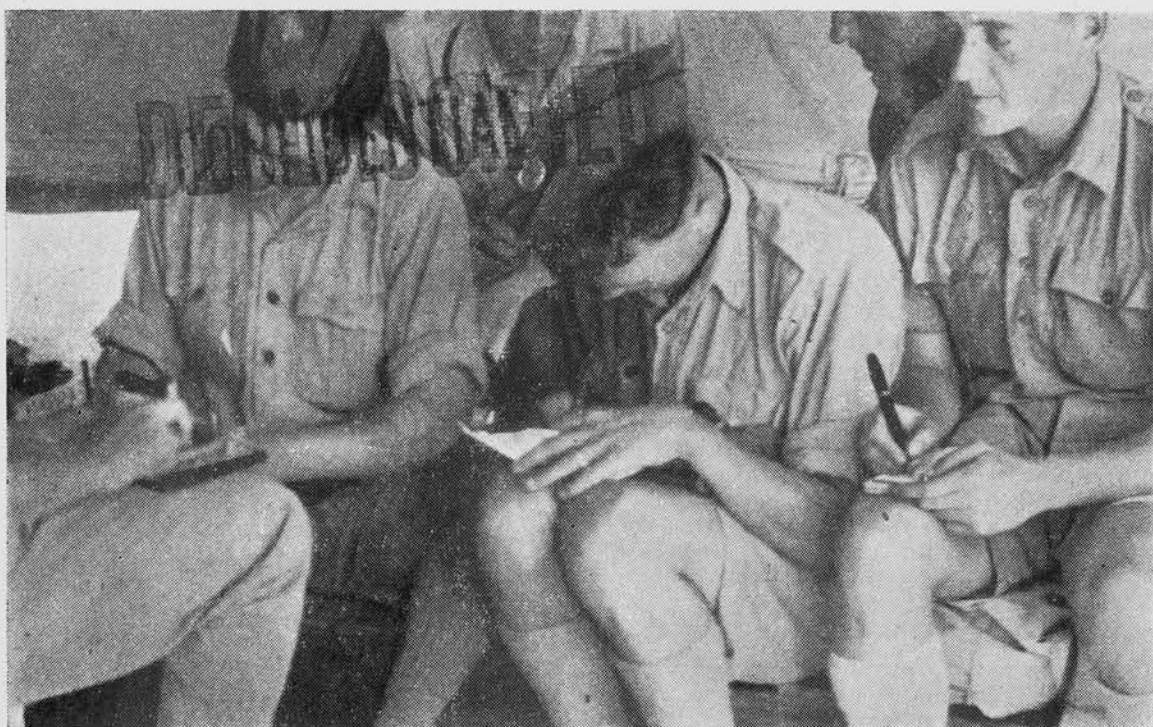
The main explanation, of course, is the very generous supplementary allowance which the D.I.D. makes in rationing small numbers. Furthermore, on the majority of Posts additional rations are bought from local sources if supplies are available.

In a few moments the transport will have arrived from Post FH to collect the supplies for Posts EH and FJ. At seven o'clock the truck from post FJ will be waiting at Post FH to pick up their supplies when the Post FH transport returns. In this manner the rations are shuttled down the line.

The truck from Post FH has arrived and the water camels are being filled. These containers are not very satisfactory for carrying water in vehicles over rough country. Although they are fastened in the lorries and sandbags placed between them they quickly wear thin at the edges and are difficult to repair.

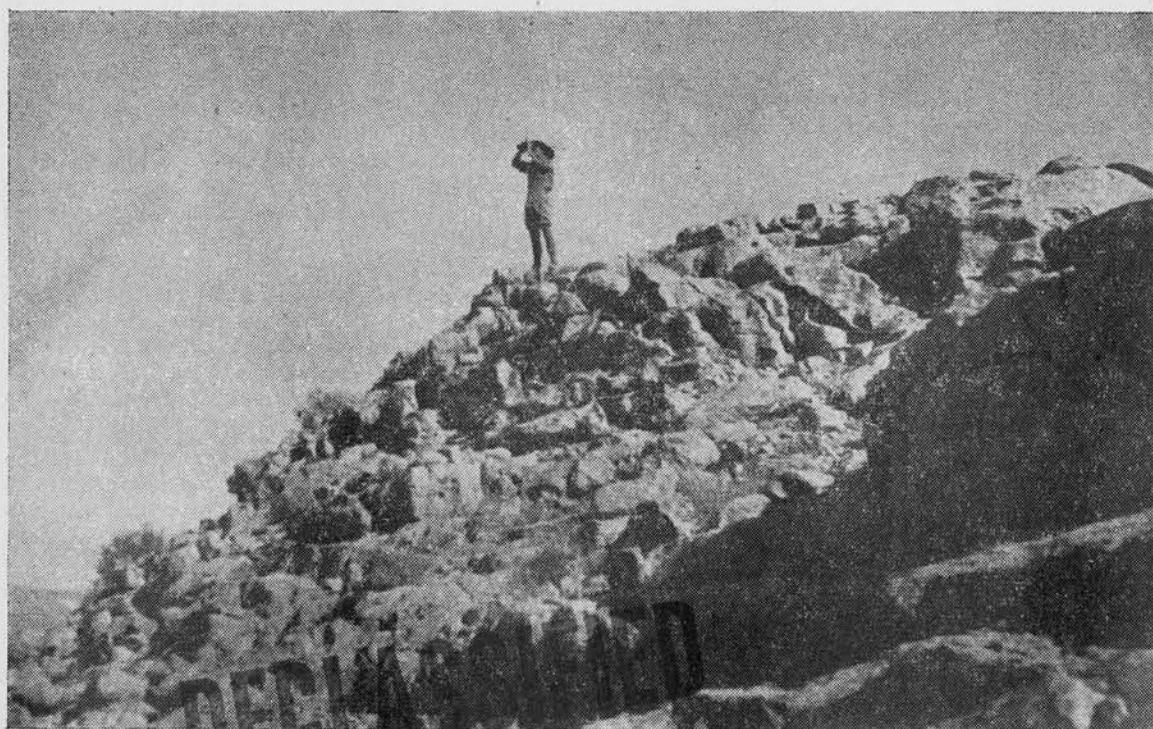
No rationing of water has been attempted. So long as adequate supplies can be obtained, the posts are generously supplied. Because of this,

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Morse training for ground observers.

Observer on duty at Post FG.



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The C.O. arrives at Post FG.

Panoramic view of Post FG.



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however, they are expected to maintain a scrupulous standard of cleanliness, not only personally but of the Post equipment as well. During the routine visits all utensils, tables, clothing, etc. are examined to ensure that they are being kept thoroughly clean.

The trailer Bowser is not designed for traveling long distances over these roads. The C.O. was shown a Bowser of similar type completely wrecked in two months after servicing the posts of a wireless unit deployed in this area. It is in an effort to preserve the vehicle that the water is distributed in water camels, the Bowser only doing the short trip to *Auja* to collect water and returning to Post FG where it is based.

No millionaire ever boasted so enthusiastically of his French chef as does the Post Commander with an efficient cook. Because of the importance of well-cooked and appetizing meals, all Post Commanders are advised to employ as cook any airman who has a natural "flair" for the job. To follow a regular roster of the personnel usually results in moderate meals from average cooks and extremely bad meals from unwilling cooks.

From the Post Commander's eulogy, it is apparent that the airman in question is undoubtedly an unrecognised "cordon bleu."

We are invited to inspect the "Mayfair Grill." This is a deep depression painfully hollowed out with picks and shovels, enclosed on three sides by sand-bagged walls, the whole covered with sheets of corrugated iron weighted down with stones. There is a curtain of sacking at the doorway. We enter. The blast of hot air that greets us is appalling. A petrol stove splutters furiously in the corner. We are too polite to say so, but to us it is nothing less than a miniature hell and we make our exit as rapidly as possible.

Soon, however, we are sitting down to a succulent joint, nicely browned potatoes and exquisitely cooked cabbage. Our host is complimented on the excellent results of his cook's sweated labour. Corporal asks the secret of the particularly piquant sauce which is served with the sweet. It is clear that this enquiry is a gross solecism, for we are told that such information may only be passed to one of the fraternity.

We stayed the night at Post FG.... After dinner we discussed the prowess of professional footballers and the quality of various brews of beer. The latter aroused considerable local patriotism evoking a wealth of nostalgic reminiscence until finally it was time to go to bed.

Earlier in the evening, a message from Post FJ to Base was intercepted reporting the visit of the Wireless Unit Liaison Officers from Headquarters, Middle East, and from Air Headquarters, Eastern Mediterranean. The C.O. was informed that both these officers would be at *El Arish* on the following night, if he desired to see them.

To visit the remaining two posts and go on to *El Arish* in one day meant very early rising.

Canteens and P.S.I.

The next morning the guard called us at quarter to four, and after a hurried cup of tea we made straight for Post FJ.

Off we went in the cool morning air along the 59 mile stretch of desert track, through wild and hilly scenery until we arrived at *Kuntilla*.

Here, at Post FJ, as a preliminary to all other activity, we had a shave. The unit standing orders make rather point of this, insisting that all personnel be shaved by half past seven. It was then well after seven o'clock.

While we perform our ablutions the Post cook is preparing the eggs which we handed in.

Major C.S. Jarvis in his book "Yesterday and Today in Sinai" states that *Kuntilla* is the ideal spot for a sanatorium or hotel. Personally, we think that the amenities of the neighbourhood are somewhat limited. But the atmosphere is certainly bracing and we eat our fried eggs with good appetite.

A pay clerk accompanies the C.O. on the pay parade, his principal duty being to deal with allotments and remittances. A large number of airmen save by having deductions of their pay credited to a Post Office Savings Account. The majority, however, are saving by increasing their allotments or by sending remittances to their parents or families in U.K., to be put away for them there. The remittances in some weeks have amounted to as much as £60 out of a pay roll of £300.

A unit P.S.I. was begun in September, 1942. An initial grant of £30 was received and very quickly, by means of all types of profit-making activities, whist drives, housey-housey, etc., and by opening a canteen, a considerable sum was accumulated. When the unit went into operation a sufficient amount of money had been obtained to provide stock for the canteen at Headquarters and the travelling canteens which tour the posts each fortnight.

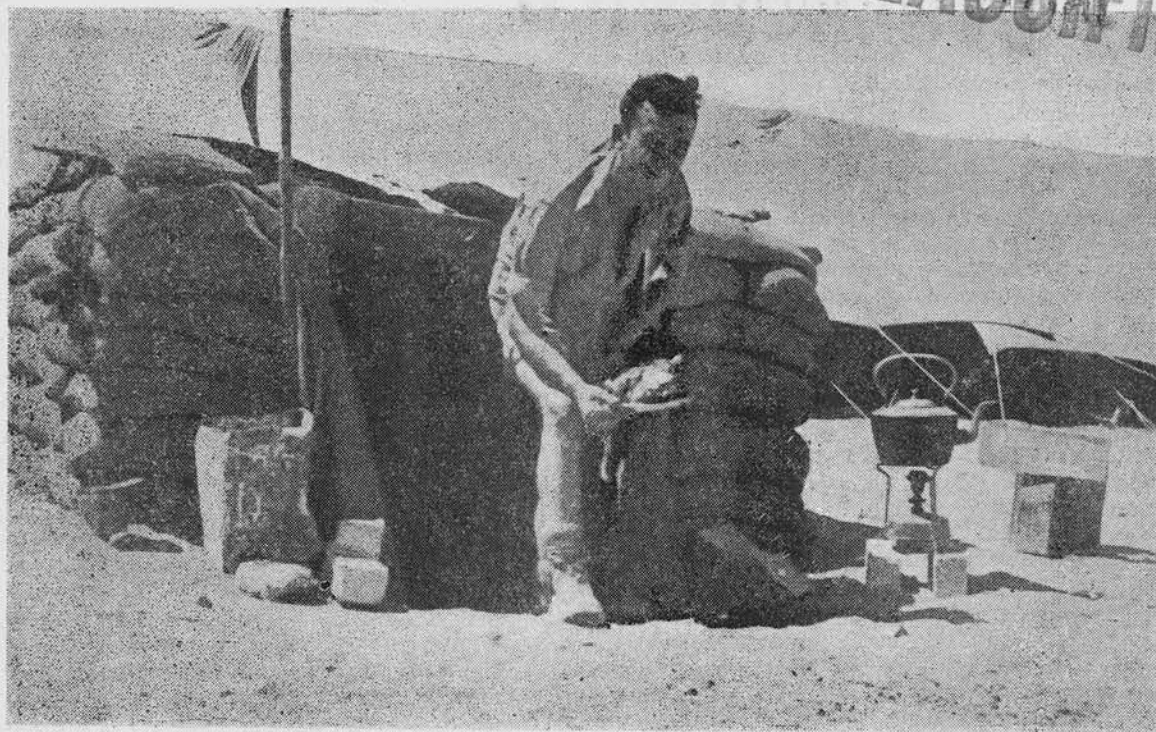
Every commodity which can be bought from N.A.A.F.I. is sold: e.g. tinned pies, pipes, collar studs, beer, jellies, hair cream, soap, chocolate, etc., etc.

The canteen is operated on a strict accounting basis. The balance sheet, which is prepared each month and forwarded to Air Headquarters, is circulated round the unit, to be seen by all personnel. The present monthly turnover amounts to between £200 and £300.

Special efforts have been made for the efficient conduct of the travelling canteens. A stock list showing all items, with separate columns for the purchases of each Post, is given to the airman in charge. This is drawn up in such a way that, at the conclusion of the journey, the quantity and value of stock to be returned can be rapidly calculated. The airman signs a receipt before his departure for the amount of stock which he is taking out. Such discrepancies which have arisen

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The Mayfair Grill.

Observer site at Post FH.



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have been... of Posts is deployed the total receipts from a journey may amount to £50.

The profits from the canteen are utilised for the purchase of sports gear and the other expenditure involved by unit welfare. The unit was already well provided with gramophones, playing cards and other in-door games before the inception of the P.S.I. In the last three months the following items have accounted for the bulk of the money expended:— footballs; baseball equipment; books; gramophone records; complete cricket equipment; supplementary rationing to celebrate R.A.F. Jubilee; Unit sports day prizes; M.T. charges; swimming parties.

All personnel take a very great interest in the P.S.I. since the results of its administration are much more obvious on a small unit than they are on a large station. Feeling develops very strongly if it is considered that one section of the unit has benefited more than another by some P.S.I. scheme.

Every effort is made, therefore, to obtain widely representative opinion before any P.S.I. plans are adopted or purchases made. All the Post Commanders are encouraged to forward P.S.I. suggestions in their reports.

Now that the Posts are adequately provided with comforts, it is proposed to adopt the suggestion of the Wireless Unit Liaison Officer, Air Headquarters, Eastern Mediterranean. In future, a note will be made of the purchases by individual Posts and goods equivalent to a 10% discount on that amount will be given to the Post on the next routine run.

At Kuntilla

On top of the Fort at *Kuntilla* is the duty observer. His view extends for many miles around. All he can see is the barren plain and the distant hills. Occasionally a military truck will pass in a cloud of dust or a camel train go slowly by.

When the Posts were deployed, all the personnel in the present screen were warned that they might be on their Posts for a considerable time without spotting a single aircraft. From some sites it was certain that no aircraft would be seen at all unless they were hostile, or friendly planes far off course or investigating. Vigilance was therefore especially important.

The principles of wireless unit reporting have been thoroughly ingrained and the whole scheme of reporting, as a vital part of the air defence organisation, is understood by all of these observers. They understand the operation of the warning system and the relative roles of civilian report centres, wireless units and R.D.F. They are familiar with the functions of a Filter Room—many of them having been detached for duty at

a Filter table—and the complete processes which lead, via the Operations Room, to actual interception.

An Unpleasant Spot

Leaving *Kuntilla*, we return north along the track we followed in the early morning.

Post FH is almost mid-way between Post FG and Post FJ. It is a grim isolated spot and the site has gained an unsavoury reputation for the remarkable size, variety and number of scorpions and snakes that abound.

The arrival of the mail is a very cheerful occasion. Letters from home prove a most effective panacea for the discomforts of the surroundings.

Every effort is made to effect a rapid distribution of mail and no vehicle leaves Headquarters for any Post without taking what letters and parcels there may be. These are shuttled along the line to the Posts concerned. The maximum delay is fourteen days and it is usually very much less.

There is no delay in the despatch of outgoing mail. This is sent daily on the ration vehicle for censoring by the ever obliging Camp Commandant at No. 1 R.S.P. *Asluj*.

The observer on duty at Post FH is probably one of the best ground observers in the unit. He is a former ACH/GD, who has been employed in a Watch Office. His knowledge of aircraft recognition is extremely good and he remustered to Ground Observer in the rank of Leading Aircraftsman with the greatest ease.

Having no aircraft to observe, he sits drawing them. The skill with which he produces recognisable sketches of different types is quite remarkable.

All these Ground Observers were previously employed on a very busy screen, but they realise that one plot in three months in an area such as this may very well have much greater significance than the plotting of 70-80 aircraft daily, as was customary on their coastal sites.

Time presses. The C.O. has sent a message to *El Arish* via the unit control at *Ismailia*, stating that he will be there at 19.00 hours. After a light tiffin we set off again along the desert track.

* * *

Our tour of the Posts is complete. We have seen them out on their lonely encampments in the desert; the duty observers in solitary isolation at their observation points. So far as we can judge they are doing their job conscientiously and in some cases with surprising enthusiasm.

At *Ismailia*, we shall learn what Filters think of them.

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First Air Attack On Wiener Neustadt

ON 13TH AUGUST aircraft from *Cyrenaica* dropped bombs on *Greater Germany* for the first time since the beginning of the war. The target was the Messerschmidt assembly works at *Wiener Neustadt*, south of *Vienna*, and Liberators of five Bombardment Groups of the Ninth U.S.A.F. were briefed.

This event marked another step forward in the war against *Germany*. It was no random attack, but part of the general bombing scheme, linking up with attacks on similar fighter manufacturing works in other districts of *Germany*. Thus, on 17th August British-based U.S.A.F. Fortresses bombed the Messerschmidt plant at *Regensburg* in *Bavaria* and carried on across the Alps to land in *North Africa*; on 9th October other Fortresses from *Britain* visited the Focke-Wulf assembly works at *Marienburg* in *East Prussia*, almost on the Polish frontier. The aircraft of the *Luftwaffe*, having already lost control of the skies, were now being hounded even before they could take to the air.

These crushing blows aimed at the centres of *Germany's* fighter aircraft production were, in turn, all part of the wider bombing pattern spreading inexorably over Nazi-controlled *Europe*. By now *Germany* has realized that nowhere can German war industry — in *Greater Germany* itself, in *Norway*, in *Rumania* or anywhere else — carry on its work unmolested. From *Britain* or the Mediterranean the heavy bombers can reach out to every corner.

Preparing for the Attack

The attack on *Wiener Neustadt* was planned to take place shortly after the heavy daylight attack on the *Ploesti* oil refineries near *Bucharest*. Three extra Bombardment Groups had flown out to the Middle East for that operation and were retained for the *Wiener Neustadt* raid.

Contrasted tactics were employed in the two operations. At *Ploesti* the aircraft went in at very low level — between 100 and 700 feet — and the attack was as concentrated as possible. At *Wiener Neustadt* the bombing was done from 17,500 to 22,500 feet, and extreme concentration was not attempted. American 500 lb. and 1,000 lb. H.E. bombs and clusters of incendiaries were used.

A total of 101 aircraft were despatched — 26 of the 44th Bombardment Group, 20 of the 93rd, 5 of the 98th, 27 of the 376th and 23 of the 389th. These were the same groups that had attacked *Ploesti*.

The intention was that two-thirds of the effort should be directed against the Steyr-Daimler component factory and the remaining one-third against the final fighter airframe assembly plant.

The Attack Carried Out

The weather was an important factor and owing to unsuitable conditions the operation had to be postponed once. On the 13th the weather, although it did not prevent the attack from taking place, affected its success adversely.

En route 10/10th cloud was encountered and the target itself was covered by 4/10th cumulus. Consequently, owing to this and to engine trouble only 61 of the Liberators reached *Wiener Neustadt*.

Twenty aircraft of the 44th Group got through and dropped 90,000 lbs. of bombs from 22,000 to 22,500 feet; the target was well covered with bursts and many fires and explosions were noted. Fourteen of the 93rd Group's aircraft dropped 50,900 lbs. from 20,000 to 21,000 feet; hits were observed on the assembly plant and repair shops. None of the 98th Group's aircraft made the target; one developed mechanical trouble and the other four were forced by the weather to turn back 100 miles south of their destination. Nine aircraft of the 376th Group, dropping 36,000 lbs. of bombs from 17,500 to 19,000 feet, saw direct hits on buildings, followed by fires and explosions, one rising to 10,000 feet. Good results were also reported by the eighteen aircraft of the 389th Group that reached the target, where they dropped 74,000 lbs. of bombs from 17,800 feet.

Losses were extremely light, only one aircraft failing to return and being last seen losing altitude and heading towards *Switzerland*. Such A.A. fire that was encountered was said to be inaccurate. Enemy fighters were few and far between and one FW. 190 and one ME. 109 were shot down.

Results of the Attack

Photographic evidence showed that results of the attack were fairly good. All the main buildings in each target were hit at least once. In the Steyr-Daimler factory four hits were made on the large workshop in the south-east corner and one on the boiler-house. Each of the three machine-shops on the south side received at least one hit and the machine-shop on the north side two hits as well as nine near misses, which also

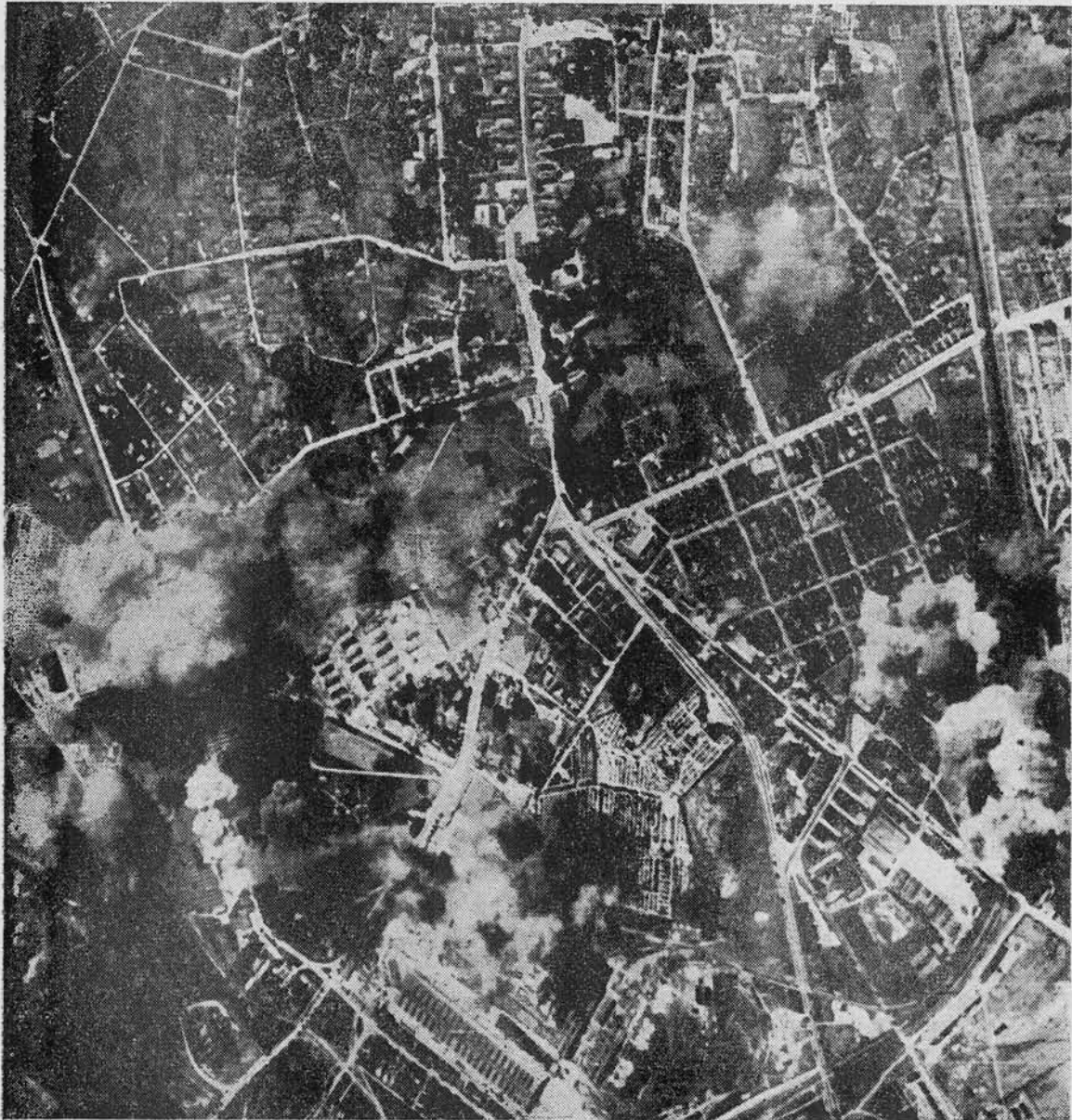
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probably damaged several adjacent buildings. A fire developed in the extreme south of the target area, possibly among stores.

In the final assembly plant there were at least one or two direct hits on each of the four assembly shops and one on the repair shop. One hangar was set on fire and the hutted camp in the south-east received eight hits. Many bombs burst among parked aircraft on the factory airfield and some twenty were believed to have been written off.

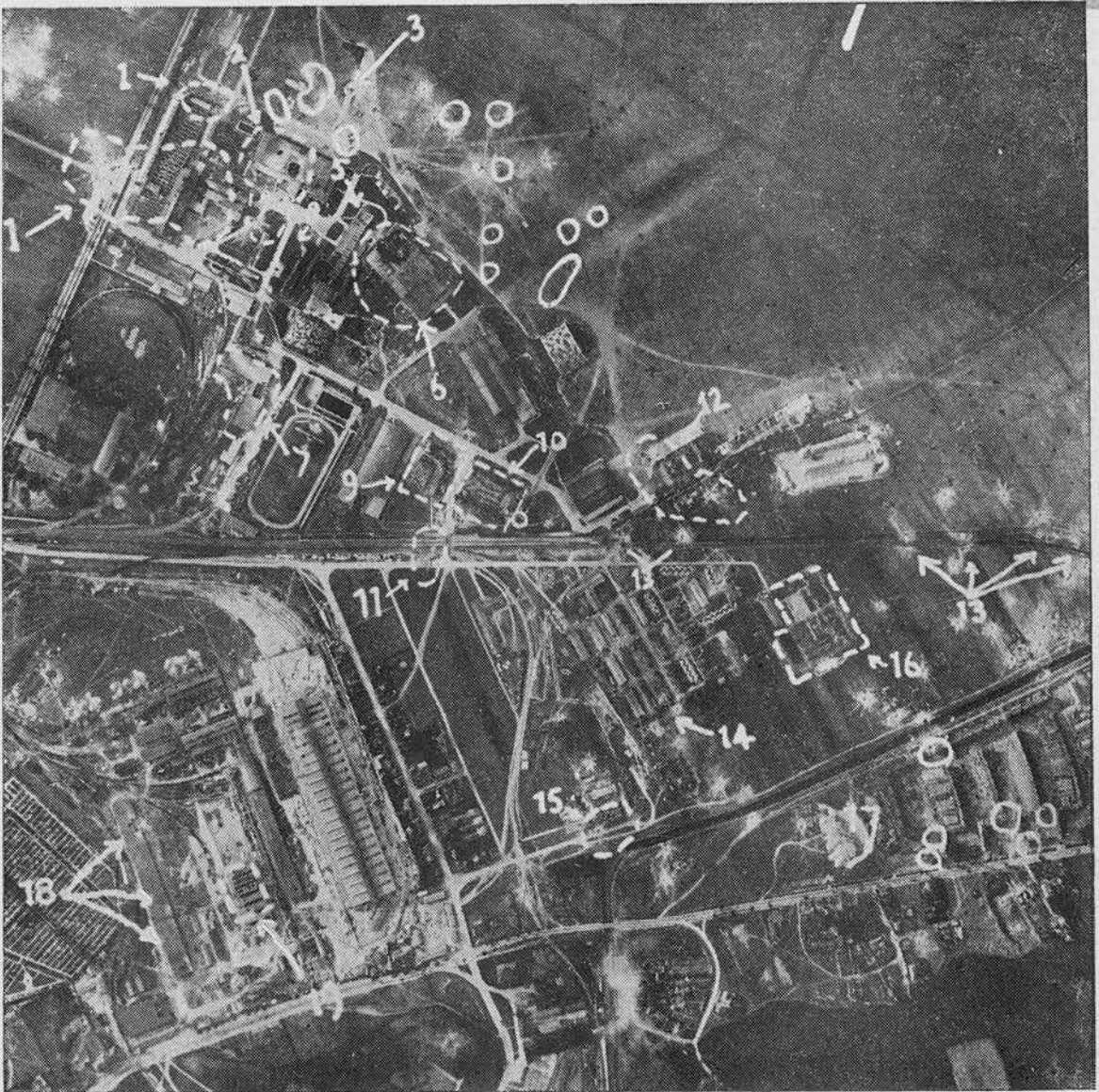
In addition, numerous bursts were seen on the Henschel and Sohn factory (reported variously as producing locomotives, tanks or aircraft components) that lies between the two main targets, and there were also bursts on the factory railway sidings and four hits on the main railway line to Vienna.

Wiener Neustadt was to experience other attacks, but these lie outside the period covered by this issue of the Mediterranean Review, and will be considered later.



Wiener Neustadt under attack, 13th August, 1943.

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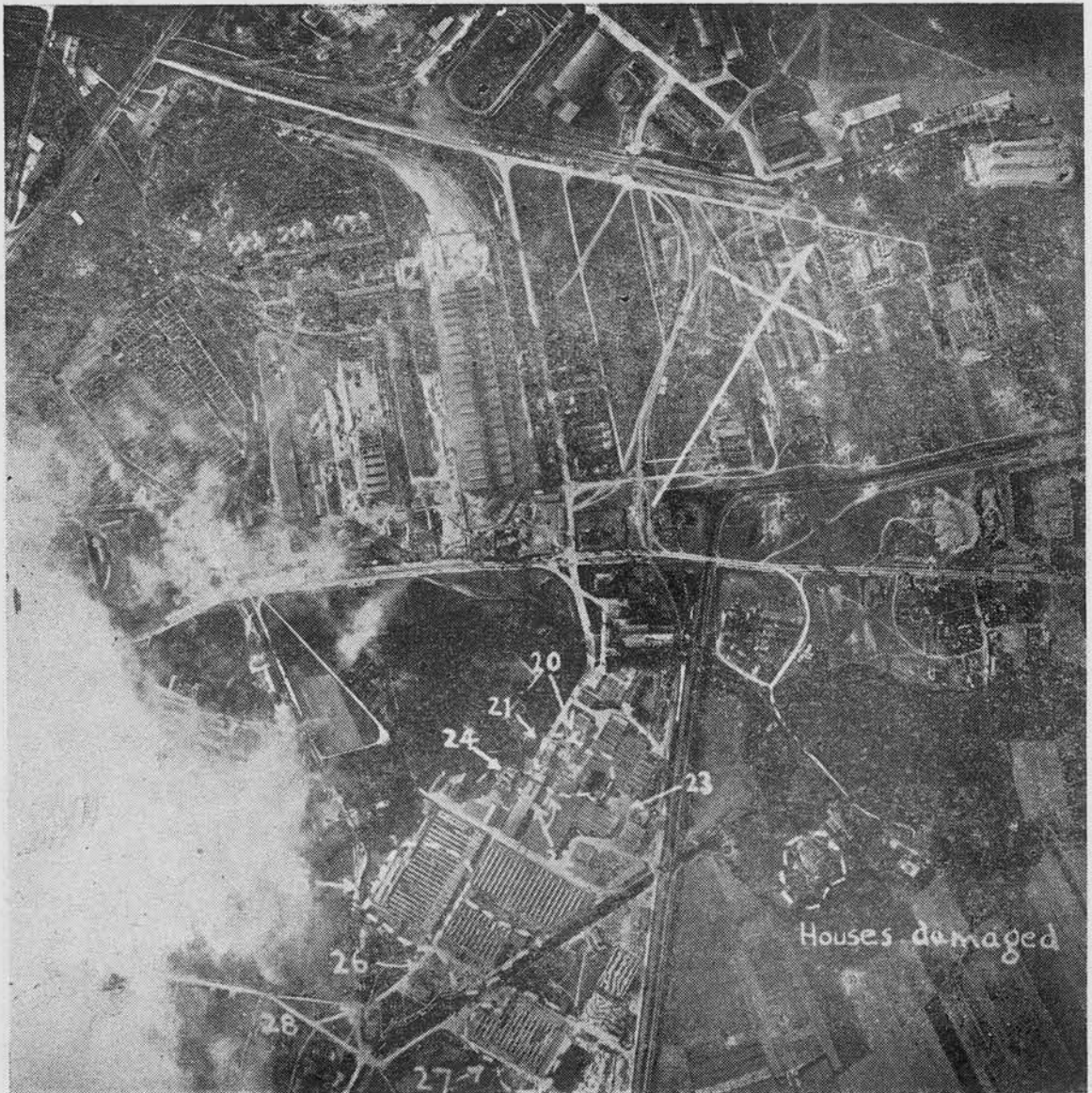


Details of damage at Wiener Neustadt.

1. Airframe works — West Wing, damage to 31,000 sq. ft., roof, and to offices. Damage to roof of vaulted shop in centre. Shop to the east has two direct hits, and blast damage over 16,000 sq. ft. A shed and stores damaged. Hits on tarmac and taxi track.
2. Aircraft Assembly Shop — (Approximately 1 3/4 acres, with 3 gun A.A. position on roof). Two hits in centre. Two large holes and blast damage over more than half the area. Craters on tarmac and blast damage to small building.
3. Compass Swinging Base. Hit on edge, aircraft damaged.
4. Craters on landing area.
5. Blast damage to Gunnery Synchronisation station.
6. Aircraft Assembly Shop — Similar to Item (2) — More than one third destroyed, with roof damage over whole area. Escaped oil and debris on ground behind.
7. Large L-shaped stores building (38,000 sq. ft.) Destroyed over 4,500 sq. ft. by direct hit, with blast damage over more than half roof area.
8. Unidentified building. Damage from blast.
9. Two sheds destroyed by fire.
10. Flight hangar and one aircraft destroyed by fire.
11. Small building damaged.

(Continued on page 102)

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(Continued from page 101)

12. Aircraft destroyed on tarmac.
13. R.R. damaged, but still in service.
14. Damage to huts in Labour camp, south-east of works.
15. Damage to south-west corner of Labour camp.
16. Thirty hits on Labour camp towards east end.
17. Sixteen hits in area between R.R. and road.
18. Henschel and Sohn Werke (Heavy Engineering). Damage to long stores building by direct hit and two near misses.
19. Severe damage over one third of total area to workshop (110 x 325 ft.).
Aircraft — damaged or destroyed, one medium and at least nineteen small.

Steyr-Daimler-Puch A.G. (Engineering)

20. Two sheds damaged by blast.
21. Machine and Assembly Shops (four and three quarter acres). Two or more direct hits in centre and blast damage to roof.
22. Long shop at item 21, covering 22,500 sq. ft. Three quarters of roof damaged by blast.
23. Hit in courtyard, and blast damage.
24. Power Station damaged by blast.
25. Machine and Assembly Shop (over three acres). Direct hit near centre causing hole 4,500 sq. ft. Extensive damage to roof.
26. Machine and Assembly Shop (four and three quarter acres). One shed gutted; slight damage to roof area.
27. Workshop (over two acres). Hole in roof approximately 4,200 sq. ft. and other damage over three-quarters of roof area.
28. Hit on road.

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Development Of Enemy Bombs And Offensive Weapons

No. 1 — RADIO CONTROLLED BOMBS

THE MOST IMPORTANT innovation in recent German bombing technique has been the introduction of radio controlled bombs. The Germans have produced these new weapons as a result of their relative lack of success in ordinary forms of bombing and torpedo attacks and by reason of the casualties sustained by their aircraft using these methods.

The basic idea of the radio controlled bomb is to enable the attacking aircraft to remain outside the range of effective A.A. fire, and still obtain the necessary accuracy. Since the chief target of these attacks is shipping, the additional advantage of the ability to counter any avoiding action vessels may take, is of great value.

Up to the present two different types of radio controlled bomb have been encountered, namely the P.C.1400 F.X. armour-piercing type of slightly over 3,000 lb. which is used mainly against large warships, and the H.S.293 jet propelled glider bomb, believed to weigh 1,760 lb. and intended primarily for attacks on merchant shipping.

A considerable amount of information about these weapons and their operation has now been obtained from P/W sources, eye-witness reports, examination of fragments of the bombs themselves and from inspection of wrecked specimens of the parent aircraft abandoned on captured Italian landing grounds. This has enabled the following details to be given and provisional drawings to be made.

The P.C. 1400 F.X.

The P.C.1400 F.X. is a normal 3,000 lb. armour-piercing bomb, adapted for radio control. The modifications consist of the attachment of four wide fins to the body of the bomb at the centre of gravity and the provision of a new lengthened tail cone housing the batteries, radio receiver and control unit. At the rear of the tail cone is a rectangular tail drum mounted on four wide struts of aerofoil section which incorporate the moveable surfaces directing the flight of the bomb. A tracer tube or electric lamp is fitted in the tail to enable the bomb aimer to follow its fall and apply the necessary corrections. The overall length of the bomb is 11', and the span of the fins 5' and that of the tail drum approximately 4'.

The DO.217 K-2 is the only aircraft at present in service which is known to have been used to

carry these bombs, being specially modified by increasing the span from 62' 5" to 80' 6" to enable the load to be carried to the necessary height, and having also a redesigned nose to give a better streamlined form combined with improved visibility for pilot and observer. Two large external faired racks are fitted, one under each wing between the fuselage and engine nacelles, although often only one bomb is carried, in which case a 200 gallon jettisonable fuel tank may be fitted on the opposite side to the bomb.

The bomb aimer's equipment consists essentially of a normal Lotfe 7D level bomb sight which can, however, be tilted fore and aft slightly, and a control box and transmitter unit. The controls are quite simple, merely giving left or right and fore and aft deflection.

The operational procedure with this weapon is as follows:— After the target has been found (some machines may be equipped with A.S.V. for this purpose) the aircraft climbs to 15,000-25,000 ft., this height being necessary in order to obtain the full penetrative effect of the bomb and to give the bomb aimer time to apply the required corrections during its fall.

The radio control system is then switched on, aim taken through the sight and the bomb released in the usual way. As soon as it has left the aircraft, the pilot throttles back to enable the bomb aimer, who tilts his sight if required, to keep the bomb in view. Tables carried define the precise amount of deceleration necessary.

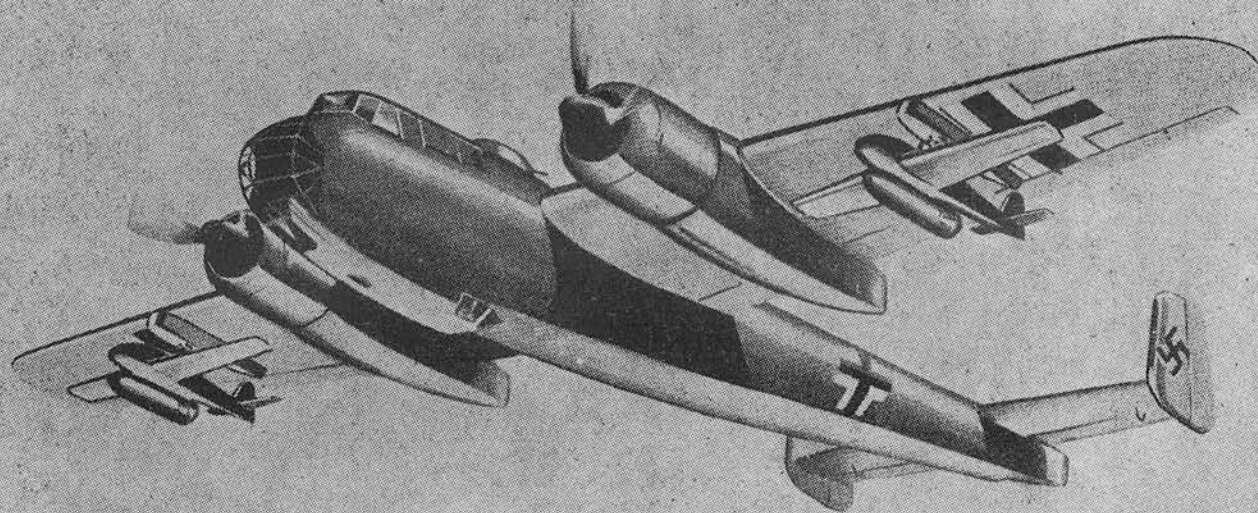
After the bomb has fallen freely for 20 seconds or more, according to the height of release, the bomb aimer may begin to control it, keeping the trace or light in the tail directly over the target the whole time. The limits of control are said to be approximately 500 yards fore and aft and 350 yards laterally, and 80% direct hits are claimed to have been made with this bomb in practice, although this figure is hardly likely to be obtained under operational conditions.

The H.S.293

The H.S.293 differs considerably from a normal bomb, resembling closely a small aircraft in actual fact. The span is about 11' and the length 10'. The airframe is constructed almost entirely of light alloy, the nose, however, consisting of a normal 1,100 lb. thin case bomb, which probably forms a rigid attachment point for the wings. The batteries, radio receiver and control

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Do 217E with 2 x Hs 293



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DETAILS OF THE INSTALLATION ARE UNCONFIRMED.

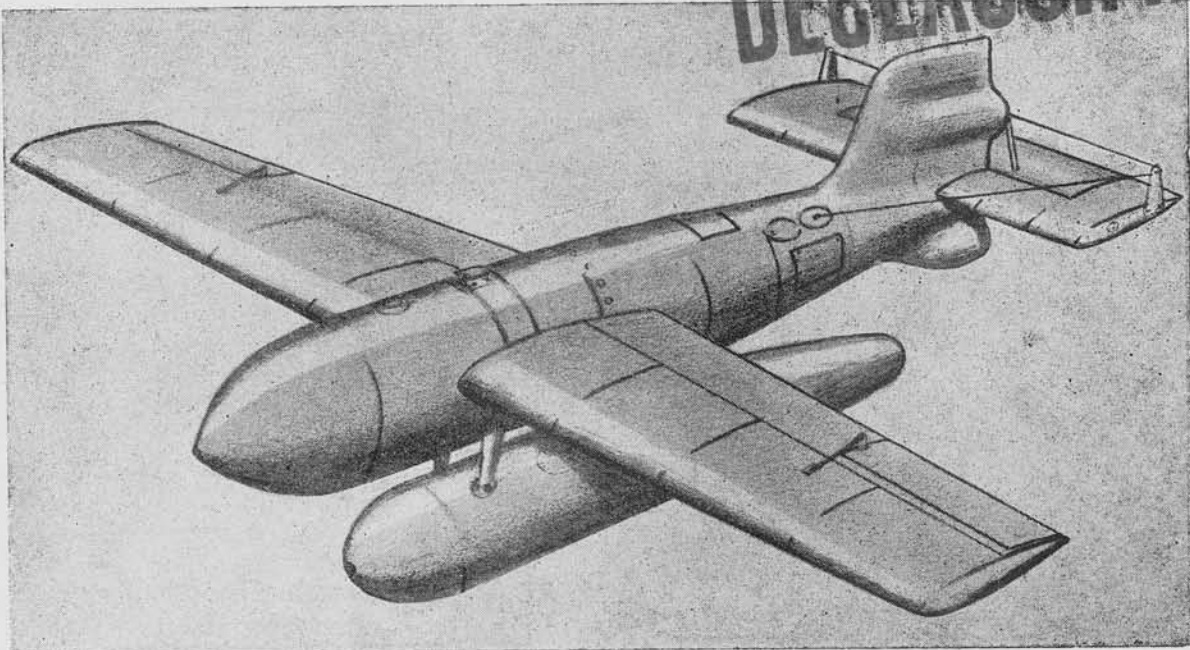
SECRET.
PROVISIONAL DRAWING

A.I.2.G. N° X 126 10/9/43

DRAWN: P.E. CASTLE

APPROVED: *[Signature]*

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Provisional drawing of HS 293 in flight

unit are mounted in the fuselage behind the explosive portion, and the fuselage terminates in a tail unit similar to that of an ordinary aircraft except that no moveable rudder is fitted, control being carried out by elevator and ailerons only. Below the fuselage is mounted a streamlined nacelle housing the jet propulsion unit with its fuel tanks. A 100 watt electric lamp is carried in the tail to enable the observer to follow the bomb's course without difficulty.

The H.S. 293 has so far been used by DO 217 E-5s with the normal wing span of 62' 5", and HE. 177s are also reported to have been in action for the first time carrying these bombs. Two bombs may be carried on the DO.217, one under each wing 12' 8" inboard of the wing tips on large faired racks, or as in the case of the P.C.1400 F.X. a jettisonable fuel tank may replace one of the bombs.

The control apparatus both on the aircraft and on the bomb is the same as that used with the P.C.1400 F.X., with only slight modifications, but the method of attack with this weapon differs considerably. The aircraft usually flies parallel to the course of the ship to be attacked, either in the same direction or on a reciprocal course and at a distance of 3-5 miles, i.e. beyond effective A.A. range, and at a height of 2,000 ft. to 6,000 ft., varying according to the distance from the ship, which may be measured accurately by the use of A.S.V. No bomb sight is used, the bomb being released by judgment only. It first falls freely for a second or two before the jet propulsion unit starts up and propels it forward, so that it forges ahead of the parent aircraft. The bomb aimer now turns it towards

the target and keeps it heading steadily on its course. The power jet is exhausted after about six seconds, at the end of which period the bomb has reached a speed of 350-400 m.p.h. It now commences to glide at an angle of 15°-20° and the observer counters any evasive action the ship may take. If the bomb is seen to be overshooting it can be made to dive on to the ship, while if it is falling short, the glide can be flattened to some extent. A short delay fuse is fitted to make the bomb burst inside the ship, but in some cases the bombs have passed right through and exploded on the far side, or have failed to detonate at all.

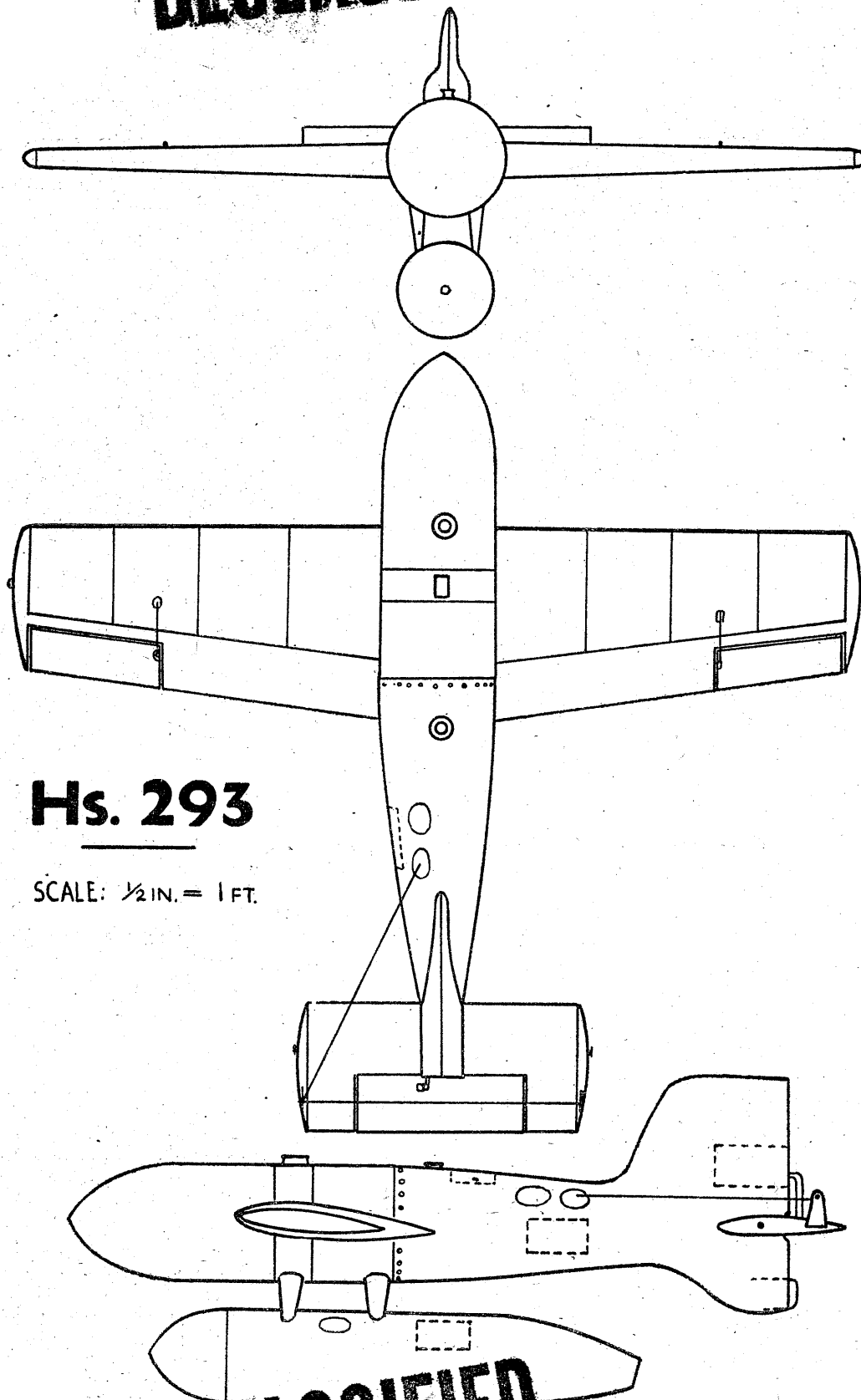
Owing to the short period during which the transmitter is working, and the fact that the receiver is fitted with separate explosive charges to ensure self-destruction even in the event of the bomb itself failing to go off, the Germans believe it will be very difficult for us to discover the frequencies used and jam them.

The individual operation of the various controls on the bomb is effected by means of very selective vibratory relays, and it is likely that two different carrier wave frequencies may be employed, on which can be superimposed several low frequency modulations, which through the relays select the required controls.

Further developments in radio controlled bombs must be expected and in addition to those already mentioned two other versions are reported to exist, namely the H.S.294, which is believed to be similar to the H.S.293 but larger, being about 15' in span and 17' long, and the H.S.293 "H", said to be intended for attacks on heavy

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Hs. 293

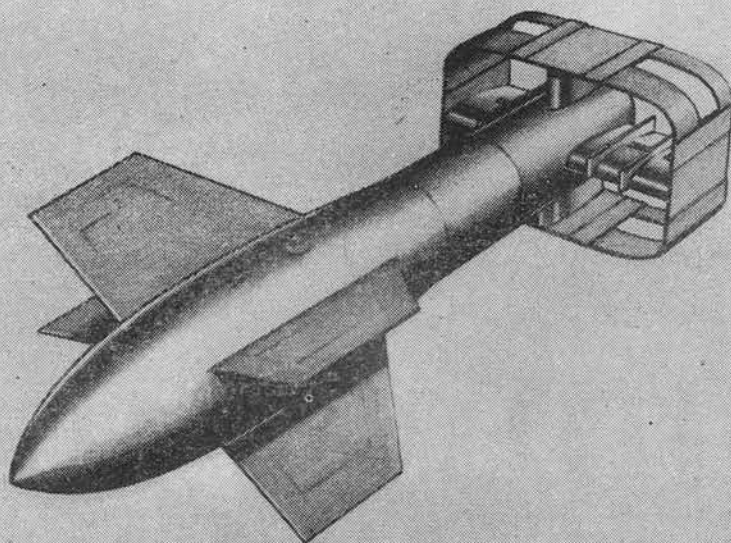
SCALE: $\frac{1}{2}$ IN. = 1 FT.

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FX RADIO CONTROLLED ARMOUR PIERCING BOMB

SECRET



PROVISIONAL SKETCH FROM RECONSTRUCTION OF FRAGMENTS.

A.I.2.G. N°X127 110-43 DRAWN: RE.CASTLE APPROVED: <i>[Signature]</i>
--

bomber formations, as it can be exploded at any desired point in its flight.

Counter Measures and Tactics

Apart from radio counter measures, which are the subject of research at present, the best methods of defence against radio controlled bombs would appear to be the provision of adequate fighter cover at all times when attacks are imminent. If this is not available the parent aircraft should be engaged with heavy A.A. before and after release of the bomb and, in the case of

the H.S.293, light A.A. fire should be brought to bear on the bomb itself during its approach. Violent evasive action should also be taken by the ship, and the use of searchlights directed at the parent aircraft to dazzle and confuse the bomb almer might be seriously considered.

These weapons have not so far been identified in attacks on land targets, probably owing to the danger of fighter opposition and the wish to preserve the secrets of construction, but it is possible that they will be used against important land targets in the future.

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ON 9th MAY, 1943, a Middle East Administration Order was issued to the effect that Nos. 21, 22, 24 and 25 Medical Receiving Stations were to be known henceforth as R.A.F. Mobile Field Hospitals. This date marked the end of an outstanding chapter in the history of the R.A.F. Medical Service.

The Medical Receiving Stations have long been familiar to many R.A.F. operational units throughout the various phases of the Middle East campaigns. Their original conception before the War was to serve as Clearing Stations to a chain of operational units in the field, and transport their casualties to railheads in the rear. But as the campaign in the Middle East unfolded itself, they soon developed into something quite beyond the original ideas of their creators, and became fully equipped hospitals, mobile to keep pace with swiftest moving R.A.F. ground units, able to cope with any type of casualty, and prepared for every emergency.

They served functions specific to the R.A.F. Medical Service, unattainable by any Army Medical unit in the field. Not only did they provide aircrew casualties with the means of being restored to health in the atmosphere of their own Medical Service—no mean factor in dealing with patients keyed-up to operational fervour, often highly strung, and restless to get back to their squadrons—but they were also the means of returning essential members of ground crews

to their units in the shortest possible time. Thus, they were often able to effect a saving of many weeks or even months, which would have otherwise been lost, had these R.A.F. patients been transported through a chain of Army units from Casualty Clearing Stations to Base Hospitals in the Canal Zone or the Levant.

Numerous cases were inevitably transferred from the Medical Receiving Stations back to base. But these were cases involving prolonged convalescence, e.g. severe fractures, burns, chronic diseases, or cases where rehabilitation was required. Such cases invariably do better far removed from the forward areas. But in all these instances, the time factor no longer exists. Their period of non-effectiveness will often run into many months, and the one factor to be considered is the patient's ultimate restoration to some degree of active service. The most striking tribute that can be paid to the work of the M.R.Ss lies in the high percentage of patients returned direct to their units, after a minimum period of non-effectiveness.

The following account deals separately with the progress, life and vicissitudes of the four Medical Receiving Stations in chronological sequence.

No. 21 Medical Receiving Station

Pride of place must be accorded to No. 21 M.R.S., self-styled "The Old Firm—Western De-

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sert, 1940-41-42-43" on its signboard. Formed originally at *Helwan* on 8th April, 1940, with "sufficient equipment for six hospital beds, and 20 stretchers," the unit received its number on 15th May, 1940. Two months were spent in assembling equipment, acquiring transport, and training personnel. It first began to function on 17th June, within a week of *Italy's* entry into the War, and pitched its camp at *Fuka*, a location that often recurs in the history of all the Medical Receiving Stations.

The First Phase : June, 1940 - January, 1941

No. 21 M.R.S. remained at *Fuka* for seven months until 12th January, 1941, when the speed of General Wavell's advance necessitated its move forward into *Cyrenaica*. During these months of fruitful activity, the unit passed through many initial difficulties and gained a wealth of desert experience. Conditions, however, were far from ideal. The Operating Theatre was dug in at first barely four feet below the surface, with a flooring of old wood and duckboards, and its walls built up of petrol tins and sandbags. The Sterilising Room was built in with sandbags, and roofed over with old sleepers. *Fuka* was, unfortunately, rarely free from sandstorms at any time of the year, and in the months of June, July, and August, conditions were at their most trying. The sand blew eastwards from the escarpment at *Fuka* Satellite landing ground, and enveloped the M.R.S. in a whirling canopy that settled on everything within reach. Sandstorms raged for hours on end, sometimes continuing incessantly for two or three days. The heat was intense, with that searing quality so peculiar to the Khamseen, the burning wind that blows with gale force across the desert. Visibility was often nil, rarely more than a few feet at a time. After each gale, the sand lay piled up across the entrances, and covered instruments, drugs, patients and staff alike. Rarely indeed, can major surgery have been performed under less promising conditions.

By the end of July, further equipment had arrived, and accommodation now consisted of sixteen beds, eight surgical and eight medical. In August a large increase in personnel took place, two additional officers and 45 airmen arriving at the M.R.S. on posting from the U.K. With them, a notable expansion of activity followed, 61 cases being admitted during the month, of whom less than 20% had to be evacuated to base hospitals. The Air Evacuation of casualties had already begun to function successfully. Seriously wounded patients were loaded on to a Bombay, and flown from *Fuka* Satellite landing ground with the minimum of disturbance to base at *Heliopolis*.

The activities of the M.R.S. grew so rapidly that early in September a new site had to be found, lying immediately south of the *Daba-Matruh* road, near the point where it meets the road to *Fuka* station. This site, in view of past experiences, was carefully chosen and prepared.

A small army of native labourers were employed to excavate the site, to dig in wards, operating theatre and reception room well below the ground surface, so that nothing could be seen above, to lay down concrete floors and approaches, to instal adequate ventilation, and protection against sandstorms. The new site served admirably. Despite the intense heat, it was found to be remarkably cool. The surroundings were cleaner and more free from dust. In its new home, the unit was able to settle down to four months of useful activity till its onward move in January, 1941.

It is axiomatic that a hospital throws open its doors to all comers. The call of suffering, from time immemorial, has known no distinction of colour or creed. Very early in its history, No. 21 M.R.S. was able to record that its patients "now include members of all three services." Hardly had it begun to function, before its first Italian prisoner-of-war was admitted. Army units in the vicinity regularly sent their patients to its Wards and Sick-Parades, and Egyptian Army units availed themselves equally of its facilities. Indians patients were accorded skilled surgical assistance, and later seen safely to their own hospital at *Daba*. In October there occurred a striking incident which demonstrated the service that No. 21 M.R.S. was already performing, and its response to the wider calls of humanity.

On the night of 13/14th October, a train filled with native refugees, fleeing to *Alexandria* from Graziani's invading forces, was bombed by Italian aircraft. Not only was the train crowded with natives, but with them were also their wives and children, their livestock and other possessions, and, while halted at *Fuka* station, it provided an easy target. Immediately on receipt of the news, a rescue party from 21 M.R.S. proceeded to their assistance. A scene of indescribable carnage presented itself. Determination of the correct number of casualties was rendered difficult, as the carcasses of dead animals were heaped with dead and severely injured natives. At least five people had been killed outright, and the work of extricating the wounded was greatly hampered by the fact that enemy aircraft were continually circling low in the vicinity, and no light could be used. Over thirty victims, including many women and children, received treatment at 21 M.R.S. that night. At least two had multiple compound fractures, on which life-saving operations were performed immediately. Both were given Blood Transfusions obtained from voluntary donors among the R.A.F. personnel on the unit. Despite their serious injuries, they both stood a favourable chance of survival when transferred to a civilian hospital. The work of 21 M.R.S., on behalf of the native victims, elicited not only a tribute from the A.O.C.-in-C., but also a letter of gratitude from the Egyptian Ministry of Public Health, *Cairo*, expressing, through the Under Secretary of State, "appreciation for the prompt humanitarian and skilled assistance rendered to

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the Bedouin refugees on the night of 13/14th October."

In October, the number of admissions rose to 202, and the operations performed to 57. An interesting development was the formation at 21 M.R.S. of a mobile Surgical Team, complete with crash kit and full surgical equipment, for transport by air to the scene of any accident.

In November, 1940, the facilities available at 21 M.R.S. were extended by the construction of a Resuscitation Ward for the early treatment of shock in severely injured patients. This lay between the Reception Ward and the Operating Theatre, and was built of concrete floor and walls. Three teams of four nursing orderlies each, selected for their skill and keenness, were specially trained in giving intravenous transfusions, and were always available in the Resuscitation Ward. These methods were soon firmly established, and became generally adopted as the routine treatment of severely injured cases.

During the bitter cold of the winter months, when blinding sandstorms and high winds alternated with heavy rainstorms and drenching showers, the unit enlarged its site, erected permanent buildings for the accommodation of personnel, and still further extended its equipment. All the Wards, as well as Operating Theatre, Laboratory, X-Ray Room, and Resuscitation Ward were now dug-in at a depth of eight feet below the surface, and well-built with concreted floors.

No. 21 M.R.S. Moves into Cyrenaica

The enemy air attacks became more and more insistent with the long winter nights. Emboldened by their forward sweep over the frontier, and their advance as far as *Sidi Barrani*, 56 miles inside Egyptian territory on 16th September, Marshal Graziani's air force made many raids on our landing grounds east of *Mersa Matruh*. Early in December, however, the pendulum swung back with a vengeance. On the night of 8/9th December, General Wavell launched his offensive, and within a week our Army swept into *Cyrenaica* on the heels of an Italian army in full retreat.

The elation of victory soon communicated itself to the M.R.S. Italian prisoners-of-war filtered in for treatment, and rumours rapidly spread of an impending forward move. By 10th January the main party of 21 M.R.S. had been transferred to *Sollum*, with full surgical equipment, ambulances and tenders, and on the 11th the Operating Theatre dealt with several air-raid casualties. The houses of *Sollum*, however, proved unsuitable as a locale for the M.R.S. Heavy traffic lumbered by on the main road, trailing clouds of dust, and the whole area, already fouled by Italian troops and prisoners, soon became a large Army supply dump, and a vulnerable military objective. A move was therefore made to the top of the escarpment of *Sollum*. Here, under the lee of the escarpment, was the old

ditions, amid severe gales and sandstorms, the M.R.S. gradually established itself. To the rigours of the weather were added other tribulations. Tents were blown down, transport needed overhaul, rations were short, the water-supply brackish and unsuitable, and the soil varied between extremes of too-soft sand and too-hard rock. Within two weeks, however, the M.R.S. was again on the move, and by 25th January occupied a Rest-House some 15 miles east of *Tobruk*. Here the accommodation was far more promising, and soon the unit was comfortably settled and in full operation. Again, however, the signal to move forward was received, and an advance party proceeded on 12th February to *Benghazi*, where a prospective site with excellent facilities was found in the headquarters of an Italian bank. These hopes, unfortunately, did not materialise, for on 15th February the forward move was cancelled, and the advance party had to return to *Tobruk*. A few days later, a signal arrived authorising the unit's return to *Helwan* to refit. On 1st March, camp at *Tobruk* was struck, and by the 3rd, the whole unit had returned to its base at *Helwan*.

During the five and a half months from September, 1940, to February, 1941, several days of which had been spent in transit and organisation, No. 21 M.R.S. admitted a total of 828 cases, of whom well over 60% were R.A.F. personnel. The remainder consisted of Army units, Indian troops, Egyptian troops and civilians. The average daily bed state was seventeen, and the number of operations performed was 239. Eight deaths were recorded, of whom three were native Arabs, and two Italian prisoners-of-war, with severe multiple injuries. Over 42% of the R.A.F. cases were discharged to their units, but this figure would have been improved upon considerably had not mass discharges to base hospitals been necessitated by the unit's moves.

The Second Phase: April, 1941 - January, 1942

EARLY IN APRIL 1941, a small Advance Party of 21 M.R.S. moved again to its old site at *Fuka*, fully equipped to work as a surgical unit. The work expanded rapidly, especially on the medical side, which soon tended to outstrip the surgical work performed; an experience which became the rule in future campaigns. Further personnel and extra equipment were added, and by mid-June the unit was functioning efficiently as a complete field hospital.

Owing to the large numbers of Army personnel arriving for treatment, an R.A.M.C. Field Ambulance was sent to *Fuka*, and took over most of the out-patient work. Army cases, however, still continued to be admitted to 21 M.R.S. for surgical treatment. For the quarter ending June, 1941, of a total of 816 admissions, over 60% were R.A.F. personnel, and the remaining 40% Army and other units. The average daily Bed State had now increased by over 100% from selected to 36.

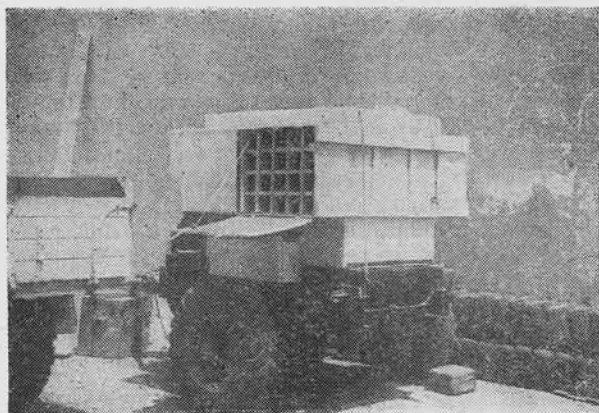
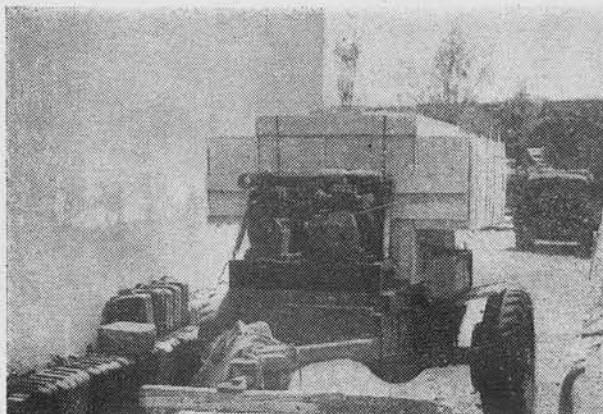
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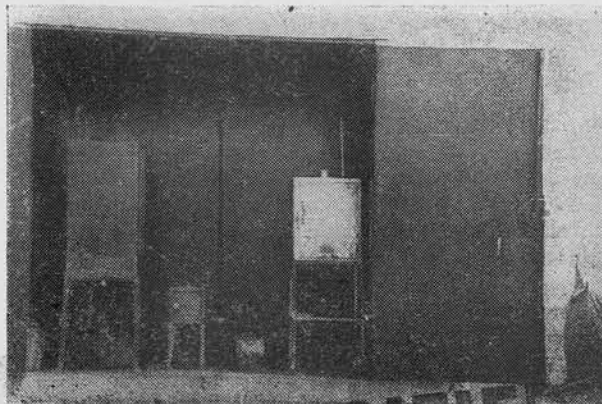
*Bench for Microscopy and
inner compartment for Sero-
logical work*

Refrigerator Plant



Locker for blood bottles

*Rear compartment with in-
cubator, hot air oven, and
steriliser*



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During the following four months, until the move forward began in November, 1941, the work at the unit was well maintained. An average of over 203 admissions per month was recorded, of whom R.A.F. personnel constituted 83%. The daily Bed State continued to average over 30, and the number of operations 50 per month. The main incidents during this period alternated between frequent air-raids and severe sandstorms. One event of note was the celebration of the Unit's first anniversary by a Dinner held on 26th September, and the taking of a Cine News-Reel of the Unit at work.

On 12th October, *Fuka* station was severely bombed by seven JU. 88s, which dived low over 21 M.R.S. in making their approach runs. A petrol and ammunition train was hit, and a series of explosions continued throughout the night. The main water-point was damaged, and an acute water shortage resulted. On 25th October further heavy raids occurred on *Fuka* station, with the explosion of a main petrol dump. Of four cases of severe burns subsequently admitted to 21 M.R.S. three were employees of the Egyptian State Railways, one of whom died early the next morning.

The Second Move Into Cyrenaica

News came through at the end of October that a forward move was imminent, and on 1st November, an advance party of 21 M.R.S. proceeded to L.G. 215, its new site in the centre of several forward landing grounds, situated in the open desert, about 50 miles due south of *Sidi Barrani*. No. 22 M.R.S. arrived at *Fuka* on November 4th to take over the site. As its convoy halted on the main road, the arrival was hailed by a party of four JU.88s, which dived out of the low cloud, and dropped several bombs in the immediate vicinity. An hour later, the greeting was again renewed by flares and further salvoes of bombs. Only one casualty resulted, however. By 6th November, the site had been handed over, all the patients transferred, and No. 21 M.R.S. was away in full convoy. Next day saw the unit with all its tents erected on the new site, and fully operational. Its stay, however, was of brief duration. In less than a fortnight, orders came through for a further move forward. On 18th November, General Auchinleck launched his "Crusader" Offensive, which at first achieved a dramatic success. Within two months, *Benghazi* was once again in our hands, and the enemy driven back to *El Agheila*. On November 21st, No. 21 M.R.S. moved to a new site near *Fort Maddalena*, six miles east of the Frontier wire, and about 40 miles due south of *Sollum*. It was fully operative almost immediately and on the third day no fewer than 27 patients were admitted.

These were exciting days. Enemy raids were frequent, and air battles took place in full view of the camp. Valuable stores were salvaged from the masses of equipment which had been abandoned by the enemy. The unit's record of

expression to an opinion that "the Germans are respecting the Red Cross in this campaign. British wounded recaptured by our troops and brought to 21 M.R.S., stated that their treatment at German hands was excellent. Also certain Army Medical Units who fell into enemy hands stated that they received consideration from their captors." These were destined, however, to be isolated incidents. A notable event during this period was the evacuation of 81 casualties by air from 21 M.R.S. during the last week of November, practically all Army cases. Few severe battle casualties were dealt with during the month, and even more striking still was the small number of R.A.F. personnel reporting sick, and the trivial nature of their injuries.

During the month of November, consequent upon the frequent moves and the increasing tempo of operations, the number of admissions fell to 157 (60% R.A.F., 40% Army.) The average daily Bed State fell from 34 at *Fuka* to eleven at L.G. 110, and fifteen at L.G. 122. The total number of operations for the month was 34.

Forward to El Adem, and Back to Base

Early in December, orders were received for a new move to a site near *Tobruk*. By 11th December, all tents and equipment had been packed, and the remaining patients evacuated by air in a Bombay to *Heliopolis*. The unit reached its new site at *El Duda* on the 12th, eight miles east of *El Adem*, and was operating within a few hours.

Normal activity was resumed, although the number of admissions declined. Many of the casualties consisted of injuries resulting from the handling of grenades, and wandering into mine-fields. Christmas, 1942, was celebrated in a heavy rainstorm, but salvaged Italian soup, Roast Pork, Tinned Beer, and Christmas Pudding on the menu lent a seasonable atmosphere.

The year ended amid a downpour of rain, with bitter cold gales blowing continuously. Early in the new year, the order came again to return to base. On 14th January, after a five days' ordeal, buffeted by severe sandstorms and delayed by persistent breakdowns of transport, the convoy finally crawled into *Helwan*.

The early months of 1942 saw the creation of R.A.F. Hospital, *Egypt*. A newly-built hospital at *Abbassia* was re-adapted and fully equipped for the reception of R.A.F. aircrew casualties requiring base hospital treatment. For the launching of this new enterprise, the skill and experience of 21 M.R.S. proved invaluable. To the Quartermaster of the unit was allotted the responsible task of initiating the Hospital and arranging for its equipment and medical stores; a large number of Nursing Orderlies and airmen from 21 M.R.S. were also posted to the new Hospital.

No. 21 M.R.S. at Daba

During the four following months, the remainder of 21 M.R.S. at *Helwan* was engaged in re-

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newing its equipment and reorganising its changed personnel. Among noteworthy items of new equipment were three Army-type Hospital marquees, which could be expanded by the addition of extra central-sections, and enlarged to accommodate as many as thirty patients in a single ward. On 17th May, 1942, the unit left its base in a convoy of 24 vehicles and three trailers, nearly all of uniform type to facilitate maintenance, and arrived next day at its new site near *Daba*.

A very useful period was spent at *Daba*. The unit was favourably impressed with its new equipment, and relieved to exchange the monotony of four months at base for the exhilaration of full activity in the Western Desert. The work expanded rapidly during June, when 263 admissions were recorded. During this month, the percentages of R.A.F. and Army admissions were reversed, for of this total, only 41% were R.A.F. personnel, the remainder consisting of Army and allied units. These figures are accounted for by the absence of fully-equipped Army units in this area, although the situation was partly relieved by the arrival of an Army Field Ambulance towards the end of June. The M.R.S. still continued, however, to perform major surgical duties for Army personnel. Throughout June, the average daily Bed State was 21, and the number of operations performed totalled 73. Many of these were surgical emergencies, the result of enemy action during the anxious days of the withdrawal.

The Move to Amriya

On 24th June, large numbers of R.A.F. units passed through the *Daba* area, retreating after the fall of *Tobruk*. A movement of 21 M.R.S. to the rear was thus anticipated, and a partial pack-up begun. The portable crash kit and transfusion apparatus were taken on several occasions to the scenes of bombing, and used with good effect. A train smash near *Daba* occurred on the night of 26th June, and eight seriously injured cases brought to 21 M.R.S. for operation. Both 22 and 24 M.R.S. had already withdrawn well to the rear, and No. 21 alone remained to serve the forward fighter units. As the scene of fighting drew nearer to the M.R.S., cases had to be evacuated quickly, and the admissions consisted almost solely of surgical emergencies.

On 29th June, the order came to move at once to *Amriya*, but the actual departure had to be delayed for two hours, while an urgent operation was performed for removal of a bomb fragment from the abdomen. *Amriya*, however, was reached safely late that night, and the convoy drawn up off the road. A new site was selected near L.G.90 the next day, about 12 miles south of *Amriya*, and 21 M.R.S. continued throughout the following four months to serve the forward fighter wings.

During this static period, a vast expansion took place of all the R.A.F. units in the vicinity. New fighter and bomber wings arrived, and the M.R.S.

found itself coping with a large increase in its number of patients. During the four months, an average of 482 cases per month were admitted, of whom 79% were R.A.F. personnel. Of these over 50% were returned to their units directly, or through No. 22 M.R.S., which served as the R.A.F. holding unit.

Cold statistics, however, convey but little idea of the manifold activities of 21 M.R.S. during these critical months. Every effort was made to prevent R.A.F. casualties, especially aircrews and ground personnel, from being evacuated through Army lines of communication. In a period of intensive preparation for the final onslaught every man counted. Of the R.A.F. casualties who were unavoidably evacuated to Army hospitals, the majority were afterwards exceedingly difficult to trace. Several weeks and even months elapsed before they were eventually able to return to their units, and then, almost without exception, only after having first been evacuated to base. Here No. 22 M.R.S., stationed at *Wadi Natrun* as a holding unit, rendered incalculable service. Thither were sent most of the cases of Malaria and Infective Hepatitis, which at one time constituted more than 25% of the total admissions. These required longer treatment than could be given in a forty-bedded unit, but could be saved from the maelstrom of evacuation to Army hospitals at base. Medical admissions, of great variety and considerable clinical interest, continued to predominate over surgical, and, as noted always during a static period, the relative incidence of operational wounds fell among the latter group. Yet the work of the unit increased so enormously that an average of no fewer than 104 operations was performed each month, 37% of a major character.

The relative proximity of all three M.R.Ss to each other, and to Air H.Q., Western Desert, proved of great value. Periodic conferences were held, problems were discussed, ideas exchanged, and a helpful spirit of close working co-operation evolved. Frequent meetings were also held for unit Medical Officers attached to R.A.F. Squadrons, at which matters of clinical interest were discussed, and demonstrations given of Blood Transfusion technique and M.R.S. equipment. A new departure was also undertaken by each of the M.R.Ss, in their constitution as sub-depots for the distribution of medical stores to any R.A.F. unit in transit through the Western Desert.

The Advance to Tripoli

Early in November came the news of the VIIIth Army's break through at *El Alamein*, and the wholesale German and Italian retreat. After a rapid pack-up, No. 21 M.R.S. moved forward to *Daba* on 6th November and thereafter moved speedily with the advanced fighter units, keeping in close communication with the Air Transport Centre, in order to maintain full air evacuation facilities for its patients. *Mersa Matruh*, *Sollum*, *Gambut*, *Gazala*, *Martuba* and

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Barce were passed through in the morning, and by 1st December the unit was installed in the Italian Colonial Hospital at *Benghasi*.

The Rear Section remained here attached to 22 M.R.S. to form an enlarged holding unit, while the Advance Party sped onwards, keeping pace the whole time with the forward fighter wings. By the end of the year, 21 M.R.S. had covered no fewer than 1,200 miles, halting at innumerable posts en route, treating sick and wounded with unremitting care, and arranging their evacuation by air from the various landing grounds nearby.

It had originally been intended to leap-frog the M.R.Ss in the event of an advance. The rapidity of the pursuit, however, soon led to the abandonment of the original plans. No. 21 M.R.S. had by now become an almost integral part of the advanced fighter wings, and was far ahead of Nos. 22 and 24 M.R.Ss in the rear. The speed of the chase spurred it on. Morale was high, and with it also a keenness to be in the very forefront of the R.A.F. advance to *Tripoli*. The air-men took a pride in the speed with which operational tentage could be dismantled, re-erected on its new site, and rendered fully functioning again. Non-medical personnel took a lively interest in the work of the unit, and were often seen rendering useful help in the wards, during their off-duty hours. Appreciative messages on the work achieved were received from, among others, the Principal Medical Officer and the D.M.S. of the South African Forces. But the satisfaction of having kept pace with the advanced fighter wings without any loss of efficiency brought its own reward.

It was learnt from experience that the M.R.S. could move forward more quickly in sections, than in one whole party. Usually on arrival at any location, the majority of admissions were of a surgical nature, such as mine casualties or wounds from enemy action. After a few days, however, medical cases were again in the ascendant. Thus, on receipt of a movement order, the Surgical Unit would strike off at once, and leave at early dawn for the new location, usually 100 miles in advance. The Medical Section and rear party would then evacuate all the remaining patients, including surgical cases, by air transport to base, and follow on in 24 hours' time. Thus, by the time the rear party were leaving the old site, the forward party were already receiving sick or wounded cases at their new location. The advance party of 21 M.R.S. consisted of the Operating Theatre and Resuscitation Room, one Surgical Ward and full X-Ray equipment, with the C.O. Surgeon, Anaesthetist, and 22 personnel in attendance, conveyed in six vehicles, including two ambulances.

The chain of R.A.F. Air Evacuation Centres worked well in the forward areas, casualties being ferried back to base by No. 1 Australian Air Ambulance Unit (flying D.H. 86s) or by Bombays or Lodestars. No fewer than 901 patients were thus evacuated during the last six months

(6th March 1943) during the static, 214 during the mobile period) from No. 21 M.R.S. alone.

The end of 1942 found 21 M.R.S. operating at *Marble Arch*. By 11th January, it had moved beyond *Sirte* to *Hamraiet*, and on 23rd January the unit celebrated the fall of *Tripoli* at *Darragh*, 40 miles south-west of *Misurata*. The unit remained here until 13th February, when it moved steadily forward past *Tripoli*, *El Assa* and *Zuara*, to reach *Medenine*, close to the *Mareth Line*, on 21st February, 1943. During the month of February, the unit operated only 20 beds in the forward areas, owing to the fall in the number of admissions, and left a rear party behind at *Tripoli*, to assist in the opening up of No. 24 M.R.S. as a holding unit.

Medenine was welcomed as the first pleasant site since leaving *Helwan* ten months previously. The unit was not, however, destined to remain there for long. The site proved to be too near the front line. Considerable aircraft activity greeted the unit on its arrival, including ground-strafting of an adjacent landing ground, and low swoops by ME.109s over the camp. The ground-strafting continued by day and night. Artillery duels and bombing were heard incessantly, and even the Air Ambulances were reluctant to venture thus far forward. On 2nd March, the order came to withdraw to a site 25 miles to the rear, as a German counter attack was expected. Next day found the unit fully operational at *Neffetia*, and here it remained almost three weeks.

The number of admissions during March rose to nearly three times that of the previous month, and the two wards of twenty beds were fully extended. Out of 197 admissions, no fewer than 59% were surgical, and of these nearly 80% were battle injuries. Several of the admissions were cases of severe multiple wounds from enemy bombing raids, which continued at *Neffetia* scarcely less than at *Medenine*. As a result of enemy fighter-bomber attacks on *Neffetia* landing grounds on 6th March, 15 casualties were admitted, of whom 11 were A.A. gunners. Nine A.A. gunners were also admitted the next day.

For ten successive nights, the enemy air activity continued. On the night of 15th March, bombs were dropped all around the M.R.S., the nearest stick being 200 yards away. Next evening, an intense artillery barrage, continuing from dusk till dawn, signified the start of the VIIIth Army's offensive against the *Mareth Line*. A severe thunderstorm broke during the following night, with heavy downpour of rain, and part of the surgical ward was blown down. Vehicles had to be brought at 03.30 hours to be moored against the tents. Meanwhile, the VIIIth Army's offensive had been crowned with success, and on 22nd March the unit again moved forward to *Medenine*, near to its former site. Here a strip of ground 900 yards long was laid out as a run-away for visiting Air Ambulances, which were thus enabled to land alongside the M.R.S. itself. The disadvantages of having several different

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types of stretchers were demonstrated, as patients with severe fractures had to be loaded on to the special Lodestar cradle stretcher from the standard type, and unloaded again to the standard type of stretcher on arrival at base, an anomaly which has since been rectified. On 25th March, the unit was visited by the Director-General of the R.A.F. Medical Service, Air Marshal Sir Harold Whittingham, accompanied by the P.M.O., R.A.F., M.E.

The next move forward took place on 5th April, when the unit advanced to *Gabes*. A continuous heavy artillery barrage announced the VIIIth Army's offensive at *Wadi Akarit*, and soon the Axis forces were again in full retreat. By 11th April, No. 21 M.R.S. had reached *Fauconnerie*, where contact was made with American troops. Three days later, the unit moved to *Kerker*, and on 21st April reached its ultimate point in the Tunisian campaign, at *Sidi Hani*, a pleasant site lying between *Kairouan* and *Msaken*.

Here it remained for a full month, dealing mostly with medical cases, mainly of Malaria and Dysentery. At *Sidi Hani* on 15th May, one week after the fall of *Tunis*, notification was received that No. 21 Medical Receiving Station had ceased to exist, and No. 21 Mobile Field Hospital was born.

Thus the "Old Firm" continued its existence under a new name. For exactly three years it had operated continuously in the field, with the exception of two breaks at base. From its experiences have been learned the Medical and Surgical problems of a Mobile Air Force in the field, serving under a variety of geographical, climatic and operational conditions. From modest beginnings, as a unit with "sufficient equipment for six hospital beds, and twenty stretchers to be held in reserve," it had now grown into a Field Hospital of fifty beds, with fifty stretchers in reserve. Its personnel had increased from fourteen to 80, its vehicle strength from six to 27. Within four hours of arrival at a new site, all its departments were fully operational, and any surgical procedure, any examination, Radiological, Microscopic, or Biochemical, could be carried out. During the three years of its existence, No. 21 M.R.S. had admitted upwards of 6,000 patients, exclusive of large numbers of cases who attended its out-patient clinics.

No. 22 Medical Receiving Station

The fact has often been commented on that each of the four R.A.F. Medical Receiving Stations operating in the Middle East, despite numerous interchanges of personnel, locale, mobility and function, possessed a character essentially its own. Although No. 22 M.R.S. received its title on the same day as No. 21, the history of this unit is in striking contrast to that of the "Old Firm." Formed on 15th May, 1940, at the R.A.F. Medical Training Establishment at *Halton, Bucks.*, it embarked for the Middle East

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on 29th June, and reached *Suez* on 23rd August. After several weeks spent in assembling equipment and training personnel, it left *Helwan* on 28th October, 1940, for service in the *Sudan* campaign. Here, covering vast distances and operating hundreds of miles away from its base, conditions were vastly different from those confronting 21 M.R.S. in the Western Desert.

The East African Campaign

The Italian Colonial armies, flushed with their occupation of the frontier posts of *Kassala* and *Gallabat* on 4th July, 1940, had settled down to prepare for a frontal advance northwards into the *Sudan*. They found themselves initially in a strong position. *British Somaliland* had been invaded early in August, and by the end of the month was wholly in Italian hands. They thus controlled the southern entrance to the Red Sea, and a large part of the Western shore of our sole route to *Egypt*. Italian units soon began to mass in force along the frontier, but were skilfully held at bay for two months during October and November, 1940, by lively patrol skirmishes and artillery duels.

By January, 1941, however, disaster had overtaken the Italian armies in *Libya*, and all hopes of further reinforcements for their vast Empire in *East Africa* had vanished. The strategic plan of the Allies to oust the Italians was already gathering momentum, and British reinforcements were moving southwards from *Port Sudan*. On 18th January the attack commenced: *Kassala* fell the next day, and by 2nd February both *Agordat* and *Barentu* were in our hands. Long weeks of intensive mountain fighting followed, until the fall of *Keren* on 26th March led to the capitulation of the whole of *Eritrea*.

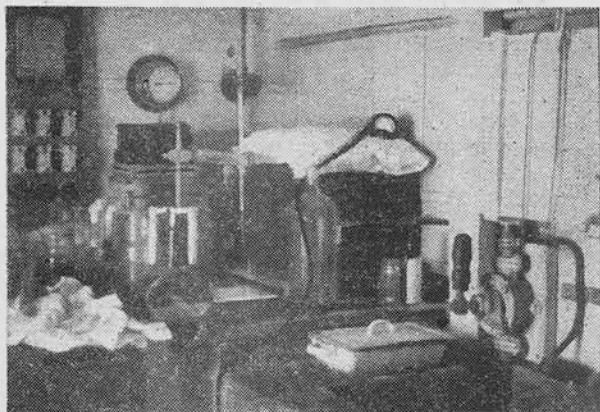
No. 22 M.R.S. in the Sudan

After halts at various landing grounds in the *Sudan*, notably *Wadi-Gazouza*, near *Erkowit*, during November, and at *Gordon's Tree*, near *Khartoum*, until the end of February, No. 22 M.R.S. passed through *Kassala* on 5th March, 1941, and arrived at *Agordat* on the following day. They remained here seven weeks, during the first three of which operations were proceeding at *Keren*, about thirty miles away.

At *Agordat* No. 22 M.R.S. were attached to No. 3 C.C.S., whose operating team had been moved further forward during the battle for *Keren*. The unit was located in the Italian military hospital, and the personnel housed in double-ridge tents in a wadi bed. Convoys of casualties arrived daily by road, and the medical staff of 22 M.R.S. was kept working at full pressure. Accommodation was available for over 200 cases, and a large number of hospital beds and considerable medical supplies had been left behind by the Italians. In the brief period from the 5th to 29th of March, no fewer than 771 British wounded and 119 Italians, a total of 890 cases, passed through No. 3 C.C.S. The majority, however, were not admitted, but evacuated

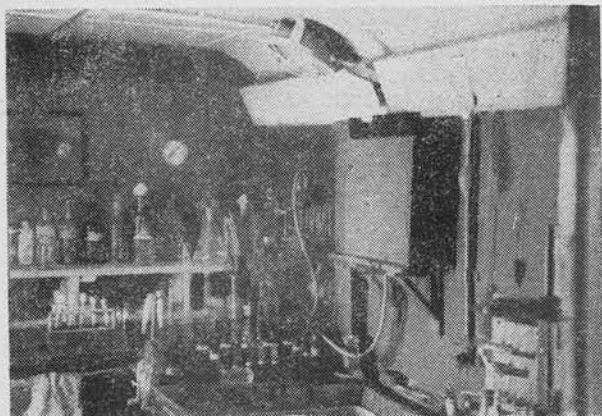
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*Mobile Field Laboratory at
No. 25 M.R.S., near El Djem,
May, 1943*

*Reception tent at No. 25
M.R.S., El Djem, May, 1943*



*Main bench showing filter
pump and auxiliary water
tank*

*Reception tent at No. 21
M.R.S., Ben Gardane, May,
1943*

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to *Tessenei*, an eight-hour journey by road, as instructions had been received for the C.C.S. to be kept as empty as possible for contingencies.

During the seven weeks' stay at *Agordat*, over 300 admissions were recorded, involving 60 major and 40 minor surgical operations. The X-Ray apparatus proved of considerable value and was employed in 70 cases. All the wards were well equipped, and were staffed by personnel from No. 3 C.C.S., assisted by six Nursing Orderlies from 22 M.R.S. The administrative work was carried out by No. 3 C.C.S., although the surgical work was performed entirely by the staff of 22 M.R.S., which functioned only as a small Operating Section, and possessed less than half the complement of staff and equipment normally carried by an M.R.S. The work performed in *Eritrea*, however, was interesting and extremely valuable, but during the whole of the campaign, very few R.A.F. casualties were treated, fully 90% of admissions being from Army units.

The Second Phase: November, 1941 — July, 1942

In April, the unit moved to *Egypt*, where it remained non-operational at *Helwan* for the next six months. Most of its personnel were transferred to other units, and the whole of its transport and equipment were overhauled. On the eve of the British offensive in November, 1941, however, it became fully operational once more. Its personnel were increased to full establishment from 24 to 74, its vehicles from eight to 20, and all its equipment brought up to scale for service in the field. On 3rd November No. 22 M.R.S. left *Helwan* and arrived at *Fuka*, where it settled down on the site previously occupied by 21 M.R.S., and took over its remaining sixteen patients.

Forward Into Cyrenaica

The stay at *Fuka* lasted for six weeks until 14th December, when the M.R.S. moved forward into *Cyrenaica*. *Sidi Rezeigh* was passed on 17th December, and *Tmimi* reached on the 21st. Here the unit halted for ten days at an Italian blockhouse, and by 30th December was again on the move. During the 42 days of November and December, 1941, on which the unit operated, a total of 135 admissions were recorded, and 32 major operations performed.

New Year's Eve, 1941, was spent in a deserted farmhouse five miles east of *Barce*, and by 14th January, *Agedabia* had been reached, where the Italian school was taken over as a hospital, and served its purpose admirably. At this location, No. 22 M.R.S. was the most forward R.A.F. unit in *Libya*. The surrounding area had been heavily mined, and many severe casualties were admitted. Within a week, however, confused and conflicting reports were received from Army sources of the approach of enemy armoured columns.

Withdrawal at Speed

On 21st January, the main party of No. 22 M.R.S. left for *Benghasi*, but a surgical team

remained behind at *Agedabia* to operate on twelve serious casualties urgently requiring treatment. This party moved from *Agedabia* on the next day with 20 patients, one hour before enemy forces occupied the town. All the patients travelled well and were transferred to a Field Hospital at *Benghasi* in a satisfactory condition. As all communications with Air Headquarters, *Libya*, had been cut off owing to the rapid withdrawal necessitated by Rommel's advance, it was decided to return to *Tmimi*, which was reached on 24th January. Within a few days, orders were received to move still further back to *Gazala*, where the unit arrived on 29th January.

At *Gazala*, however, No. 22 M.R.S. was permitted a breathing-space only. By 4th February, it arrived at *Gambut*, and by 8th February at *Maaten Bagush*. Rommel's advance had meanwhile spent itself, and the new line was consolidated south of *Gazala*. Although its transport was now sadly in need of overhaul, No. 21 M.R.S. received instructions to move forward again to *Gambut*, and by 19th February it had reached there safely and was fully operative.

The Static Period: February — June, 1942

The next four months were spent at *Gambut* and much useful work accomplished. No. 22 M.R.S. was situated well in the forward area, within six miles of fourteen R.A.F. squadrons, and many other units. It also served large numbers of Army personnel in the vicinity, being the only medical unit of its kind between *Bardia* and *Tobruk*, a radius of 35 miles. Enemy air activity was on a reduced scale, and the major disturbances were heavy rainstorms, which for a while paralysed all transport movements.

Throughout the months of March, April and May, the work continued to increase steadily. It is worthy of note that flying and battle casualties formed but a negligible proportion of the total cases admitted. On 26th May, following news of a heavy armoured battle in the *Bir Hakim-Tobruk-El Adem* area, immediate steps were taken to evacuate all cases, and render the full bed strength available for casualties. At the same time, the unit was placed on a highly mobile basis, ready to move at short notice. Eleven Army cases, severely injured by fire from enemy armoured patrols, were admitted into the wards on 27th May.

Back to Helwan

On 14th June, following the fall of *Bir Hakim*, orders came to move once more, and by 15th June, L.G. 75, 30 miles south of *Sidi Barrani*, was reached. On 24th June, No. 22 M.R.S. withdrew to *Maaten Bagush*, and four days later arrived at *Amriya*, where it encamped in the vicinity of 21 M.R.S. Early in July, instructions were received to proceed to base for refit, and by 5th July the unit had again reached *Helwan*.

From 3rd November, 1941, until 5th July, 1942, the unit had been operating continuously for eight months in the Western Desert. During

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this period the total admissions numbered 973, of whom 63% were R.A.F. personnel. The total number of surgical operations performed was 231, of which 142 were of a major character.

**The Third Phase: The "Holding" M.R.S.
October, 1942 — May, 1943**

With the German lines at *El Alamein*, and the prospect of an intensive winter campaign ahead, No. 22 M.R.S. was completely re-formed and re-equipped to serve as a "Holding" Unit. The intention was to utilise it well in the rear of Nos. 21 and 24 M.R.S. for the reception of any of their cases requiring a moderately long period of hospitalisation, but not of sufficient gravity to necessitate invaliding to Base. It was thus hoped to conserve essential man-power in the operational units of the R.A.F. Many weeks of non-effectiveness could thus be avoided in numerous medical cases such as Acute Gastro-Enteritis, Infective Hepatitis, non-specific Dysenteries, and B.T. Malaria. In the surgical wards, also, ample scope would be found for the treatment of wounds, minor burns, sprains, simple fractures, desert sores, and numerous types of sepsis. Statistics afford eloquent testimony of the results achieved. In October, of 218 admissions, 78% were returned direct to their units. In November, of 244 R.A.F. admissions, the figure was 77%, while in December with 442 admissions, it rose to no fewer than 87%. Of the October admissions, fully 50% were transferred from Nos. 21 and 24 M.R.S.

On 4th October, 1942, No. 22 M.R.S. was established in the vicinity of Rear A.H.Q., Western Desert, at *Wadi Natrun*, on an 80 bed basis, soon afterwards increased to 100 beds. The organisation was well-planned in the form of four ward-units of 20 beds each, accommodated in a large extending hospital marquee, sixty feet long, with four centre sections. It was found practicable later to extend the marquee to six central sections, and thus accommodate thirty patients under one roof.

On 5th November, No. 22 M.R.S. moved to *Amriya*, 40 miles northwards, just east of the *Cairo-Alexandria* road, in the wake of the advancing R.A.F. units, where it remained for two weeks. A further move was then made to *El Adem*, 423 miles westwards, and completed, after sundry transport mishaps, in three days. On 25th November, an advance party of the unit was in occupation of the Italian Colonial Hospital at *Benghasi*, while its rear party was at *Tmimi* Roadhouse. During the next three months, No. 22 M.R.S. functioned in conjunction with the rear party of 21 M.R.S. as a holding hospital at *Benghasi*. The combined bed state of 125 rose rapidly to 350, and the hospital rendered magnificent service in the treatment of numerous casualties from the forward areas, and as a clearing station for cases to be transported by hospital ship. During the month of December alone, 455 of the latter cases passed through its hands.

M.R.S. Into Hospital

A valuable precedent was created by the arrival at 22 M.R.S. during December of seven hospital sisters of the P.M.R.A.F.N.S. from *Cairo*. Their splendid pioneer work soon had its effect, and on 8th March, 1943, R.A.F. Hospital, *Cyrenaica*, fully equipped and complete in every detail, came into existence.

Another innovation, arising partly out of the severity and frequency of enemy air raids over *Benghasi*, was the creation of a Convalescent Camp at *Apollonia*. Hither were sent cases who were not yet fit to return to their units, but requiring treatment or convalescence in a more peaceful atmosphere than existed at *Benghasi*. Within two months, the camp was reconstituted as No. 1 Middle East Rest Centre.

The early days at *Benghasi* were full of incident. The town had been almost completely destroyed by two and a half years of ceaseless bombing, and appeared a mass of ruins. Ships, docks and warehouses lay battered in the harbour area, and a petrol tanker, blazing away in the port, enveloped the town in a pall of smoke. On arrival at the Colonial Hospital, eighteen British prisoners, including an R.C. padre, were freed from captivity.

Many of the Hospital buildings bore marks of Italian occupation. Walls, floors and ceilings were so infested that in one instance a Crusader tank was employed in effecting demolitions. Difficulties were also encountered with the Italian nuns and priests, who were at first decidedly non co-operative. Many Italian and German prisoners-of-war were found being treated under their care, and on four occasions were encountered loose in the compound at night, fully armed, and supplied with food and clothing by the nuns. Action followed by the Military Authority, which left the M.R.S. in exclusive occupation of a clearly-demarcated Service area.

Enemy air raids were continuous from dusk to early dawn throughout the month of December, for which, for a time, the burning tanker in the harbour provided an excellent guide. As the defences improved, the A.A. barrage became of great intensity. Five bombs fell in the hospital area, leaving huge craters, and completely demolishing the house of the Mother Superior. Two of the nuns were buried in the debris, and had to be dug out. No casualties were sustained, however, and the R.A.F. Nursing Sisters set an example of cool courage, which had a steadying influence among the patients.

Mobile Once More

No. 22 M.R.S. ceased to function as a static hospital at *Benghasi* on 5th March, 1943, when an advance party of 60 beds left to reform as a field unit in the *Misurata* area. The main party followed on 28th March, and was soon actively functioning at *Gardabia*, and during the month of April recorded 131 admissions, of whom 75% were discharged back to their units. During

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May, the numbers fell to 99, of whom nearly all were returned fit for duty.

No. 22 M.R.S. was operating near *Misurata*, serving No. 205 Bomber Group and other R.A.F. units in that area, when, on 9th May, its title was changed to No. 22 Mobile Field Hospital, and a short while after, with 205 Group, it moved northwards into the *Kairouan* area of *Tunisia*, near the site which No. 21 M.R.S. had formerly occupied.

* * *

No. 24 Medical Receiving Station

One and a half years after the constitution of Nos. 21 and 22 M.R.S., No. 24 M.R.S. was formed at the Medical Training Establishment, *Harrogate*, on 3rd November, 1941. The complete unit, consisting of six officers and 55 airmen, embarked for the Middle East on 10th November, and reached *Suez* on 11th January, 1942. After proceeding to *Helwan*, the unit was non-operative for five months, owing to delays in the arrival of its stores and equipment. Many of its personnel were meanwhile detached to other units. On 13th June, 1942, 24 M.R.S. was finally enabled to move off in convoy, and stayed the night at *Amriya*. The following day *Fuka* was reached, but the old site of Nos. 21 and 22 M.R.S. was found unsuitable for occupation, being completely sanded in, and infested after a long period of disuse. A new site was therefore chosen nearby, and on 20th June the unit was fully functioning. The news of Rommel's offensive in *Libya*, however, became increasingly grave, and after six days the unit was given orders to withdraw. On 26th June, No. 24 M.R.S. left *Fuka* for *Wadi Natrun*, where it worked on a skeleton basis at a site one mile south-east of the Road House, until 17th July. At these two locations, over a period of 21 operational days, the unit admitted a total of 125 cases, and gained a useful experience of desert conditions and rapid mobility.

On 17th July, the unit moved to *Burg-el-Arab*, the Advanced Air H.Q. of R.A.F., Western Desert, where it functioned for nearly four months. During this vital period, it accomplished a heavy amount of operational work with conspicuous efficiency. Over 638 cases were admitted as patients, and 160 operations performed, while in addition, over 1,700 cases attended as out-patients, nearly 60% from Army units.

24 M.R.S. Moves Forward

With the advance of the VIIIth Army into *Cyrenaica*, No. 24 M.R.S. was moved forward to *Maaten Bagush* on 9th November, and to *Gerawla* on 10th November, where it was assigned to serve the rear force of R.A.F. units, when the leap-frogging plan was superseded, and thus fell back behind its colleagues. It remained at *Gerawla* for ten days, during which 58 patients were admitted. The remains of a German Field Hospital were found near *Mersa Matruh*, and four large Ward Marquees were salvaged. These possessed several advantages over ours, in the absence of

guyropes, the small number of tent-pegs required, (only 20 as against 60 in our standard patterns), the excellent lighting and ventilation by means of mica windows on sliding frames, ease of erection, and the better wearing qualities of heavier material. These Marquees were subsequently put into service, and found satisfactory, proving completely rainproof in the heaviest shower. Ample accommodation was afforded within for 24 patients.

On 23rd November, No. 24 M.R.S. moved forward again, and arrived at *Gambut* the following day, where the unit remained operational for the next two months. During December, over 260 admissions were recorded, of whom fully 78% were R.A.F. personnel. The number of operations was 66, and over 300 cases were treated as Out-Patients. Evacuation of R.A.F. personnel who were expected to be fit for duty within six to eight weeks, was arranged by air to No. 22 M.R.S. the "holding" unit at the Colonial Hospital, *Benghazi*, while others were sent by air to base. Army cases were evacuated through the C.C.S. at *Tobruk*. Occasional delays in the working of the Air Evacuation Scheme were experienced away from the forward areas.

On 21st January, the unit moved forward again, reaching *Benghazi* on the 24th. Instructions were received here to proceed to Rear A.H.Q., W.D., at 30 miles west of *Buerat*. On arrival, the unit was notified that it was to serve as the future "holding" M.R.S., and occupy the Italian Military Hospital at *Tripoli*. The full convoy reached *Tripoli* on 28th January, five days after the capture of the town, and encamped on the *Bir Setta* race-course. They speedily settled down to the task of preparing and equipping the hospital.

A Base Hospital at Tripoli

From the end of January, 1943, No. 24 M.R.S. ceased to function as a Mobile Field Unit, and became a static hospital. A great deal of preliminary work had to be done before the hospital could be ready for the reception of casualties. The buildings were in a filthy condition, damaged by previous bombing attacks, and stripped of all doors, windows, and fittings by indiscriminate looting on the part of natives. Many deficiencies were found in the site; the main buildings were old converted military barracks, with drainage, latrine and washing facilities totally inadequate for a hospital. The central hospital block, however, was well built, and certain of the annexes were of modern design. Within a few days, the expansion of 24 M.R.S. from a 40-bed to a 200-bed unit was well advanced, and large quantities of equipment already on their way. During the active period of February, 292 admissions were recorded, over 55% of them being surgical cases. The following month witnessed a still further expansion of the Hospital, 341 cases being admitted, with an average daily Bed State of 155. The X-Ray, Laboratory, and Dental departments were well installed, and rendered useful service.

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An important advance was marked during April by the arrival of six R.A.F. Nursing Sisters, whose services had been needed for same time. They were joined by two more Nursing Sisters in May, and further additions were made to both the medical staff and personnel.

The value of 24 M.R.S. as a holding unit at a forward base was of increasing assistance to large numbers of R.A.F. units in the area, and cases could now be retained and successfully treated over a considerable period. By 15th May, when its name was changed to No. 24 Mobile Field Hospital, the word "mobile" had become a relative term only. For the unit was now installed in a 240-bedded hospital, with plans projected for a further steady increase to 300, and ultimately to 400 beds.

* * *

No. 25 Medical Receiving Station

Though easily the youngest of the four Medical Receiving Stations in the Middle East, No. 25 M.R.S. very soon attuned itself to operational conditions, and by the end of the Tunisian campaign had already become a vigorous and enterprising unit. Formed at No. 2 P. D. C., Wilmslow, on 15th August, 1942, over nine months later than No. 24 M.R.S., it embarked for the Middle East on 28th August, and arrived at *Port Tewfik* on 8th November. *Helwan* was reached the next day, and during the following four weeks the supply of equipment and training of personnel proceeded apace. Operations were by then in full swing in the Western Desert, and the speed of Rommel's retreat brooked of little delay. No time was available to await the arrival of the unit's medical stores from the U.K. On 6th December, the convoy left *Helwan*, and arrived at *Tmimi* roadhouse on the 9th, where the unit functioned until 16th December, when it moved off again, reaching *Benghazi* on the 17th, and *Agedabia* the following day.

At *Agedabia*, No. 25 M.R.S. pitched its camp 1½ miles south of the town, on the coastal side of the main road. Numerous cases were admitted at once, with a large proportion of Infective Hepatitis among them. Several had been sent from a Group of the U.S.A.A.F. stationed at *Balindah*, 25 miles away across the desert. Then for six days a sand storm with alternate gales and rain blew continuously, bringing with it loads of dust and sand from the desert tracks away to the south. The unit spent its first Christmas fairly pleasantly, however, despite these adverse conditions. On Boxing Day a message was dropped from a *Lysander*, instructing the unit to proceed to *Marble Arch* by 28th December. The whole of the day following, therefore, the M.R.S. struggled to extricate itself out of the mud, with its personnel exerting almost superhuman efforts. A diminutive "Jeep", lent by the 57th U.S. Pursuit Group, rendered heroic service in towing a large Fordson six-wheeler ambulance out of the quagmire. Two anxious hours elapsed before all the bogged veh-

icles were safely on the main road. *Marble Arch* was duly reached next day, and by 29th December the unit was functioning again on a site two miles east of *Nofilia* landing ground.

The ten days spent at *Agedabia* proved a very useful period of activity. Over sixty cases were admitted, and eleven operations performed. More than half the patients were returned to their units, and the remainder transferred by Air Ambulance. At *Nofilia*, the unit soon settled down to work again. On the last day of the year, five South African natives were brought in, injured by a land mine. Contact was made with three New Zealand Field Ambulances in the area, and a joint celebration organised to greet the New Year.

Gales with the New Year

1943 arrived, however, with the worst gales experienced by the unit since it set out for the Western Desert. The storm blew continuously for three days with terrific force, and all air communication was cut off. In eleven days stay at *Nofilia*, the unit admitted 44 cases, and performed 14 operations. On 11th January, the M.R.S. moved to a landing ground at *Gzina* near *Sirte*, where it remained for four weeks, and a variation in the menu of desert rations was afforded by a number of gazelle and turkey-bustards shot in the vicinity. Eighty-three admissions were made during the time spent in this area, and 24 operations performed, and on 20th January a light section was moved forward to *Hamraiet* east.

On 9th February another move forward was decreed. *Bir Dufan* was reached on 11th February, and here No. 25 M.R.S. remained until 5th March. Numerous cases, some very severely injured, were admitted during this period, the Bed State often reaching 35. Evacuations were organised by air to 24 M.R.S., now operating as a hospital at *Tripoli*. Their embarkation was greatly facilitated by the marking-out of a small landing ground on the unit site, and the D.H. 86s of No. 1 Australian Air Ambulance Unit Squadron were thus enabled to complete their landing, loading of patients, and take off within less than half-an-hour. During the three weeks spent at *Bir Dufan*, 98 patients were admitted, and 16 operations performed. The majority of R.A.F. patients were discharged either directly, or via No. 24 M.R.S., back to their units.

On 5th March, 1943, the unit moved again, and arrived next day at its new site, three miles north west of *El Assa* village, west of the *Ben Gardane* track. No. 25 M.R.S. remained here until 4th April, and spent an active four weeks. For a while it acted as a holding unit, receiving casualties from No. 21 M.R.S. and two VIIIth Army C.C.Ss. Its admissions totalled 125, and included cases of R.A.F., S.A.A.F., and U.S.A.A.F. personnel. The equipment was ample, and allowed of easy expansion to admit 150 cases if necessary. The M.R.S. left *El Assa* on 4th April and remained for ten days at *Medenine*, on the site of 21

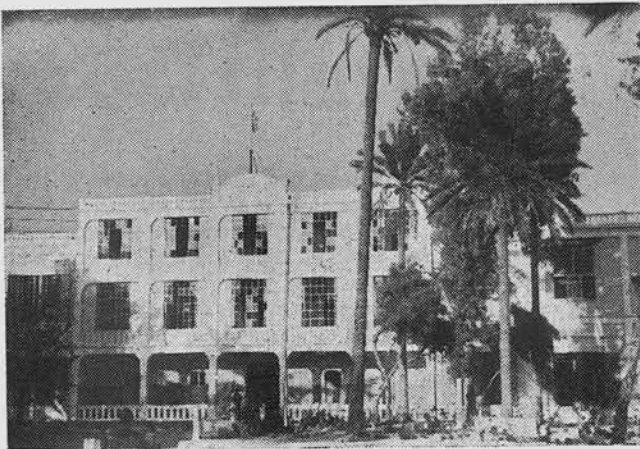
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*Entrance to No. 24 M.R.S. at
Military Hospital, Tripoli,
May, 1943*

*Main building of No. 24
M.R.S. at Tripoli*



*A ward of No. 22 M.R.S. at
Colonial Hospital, Benghazi.
December, 1942*

*A surgical ward of No. 24
M.R.S., at Tripoli*



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M.R.S., where 81 patients were admitted. Four days were then spent at *Triaga* near *Sfax*, and on 20th April the unit reached a site two miles along the *La Hancha — El Azheg* road, below its intersection with the main road from *Sfax* to *El Djem*. It remained here for six weeks as a semi-holding unit, to cover the light bomber wings in the *Sfax — El Djem* area.

During this period over 200 admissions were recorded, and 50 major operations performed. The majority of the cases were medical, but a large number of severe casualties from road accidents were admitted, accounting for three deaths. One very severe case of Haemorrhagic Smallpox occurred, with fatal results.

In a German Hospital

The camp at *La Hancha* was pleasantly situated amid olive groves, and sea-bathing was within easy reach. A light section of No. 25 M.R.S. moved to *Carthage*, near *Tunis*, on 13th May, to take charge of a German Field Hospital, housed in a converted Convent School. The building was finely situated on a hill overlooking the beautiful Bay of *Tunis* and the ruins of ancient *Carthage*. The hospital contained over 450 German wounded under the care of their own

medical officers, with a British Army guard. The sanitation was hopelessly inadequate, the wards badly overcrowded, and sepsis rife among grossly-wounded patients in close proximity. Supervision was exercised over the transfer of these German wounded to prisoner-of-war camps, and to prevent destruction of captured enemy equipment, which included R.A.F. medical equipment captured by them at *Tobruk*. The advance party remained at *Carthage* until the end of May, by which time some 230 patients were still awaiting transfer.

Instructions were received for a further move southwards to the *Ben Gardane* area at the end of May, and by early June, the move had been completed. And here, at *La Hancha*, we leave No. 25 Medical Receiving Station with its name changed to No. 25 Mobile Field Hospital.

* * *

Thus ends this record of the four R.A.F. Medical Receiving Stations in the Middle East during their evolution and development into Mobile Field Hospitals. The full story of their achievements and the magnificent work they accomplished will be told when the history of the R.A.F. Medical Service is written.

Rescue By Night

DURING THE AFTERNOON of 5th June, 1943, a report was received by the Air/Sea Rescue Flight that a Beaufighter flying from *Malta* to the Delta area was believed to be down in the sea; the position given was 300° *Benina* 15 miles, and was later amended to "more likely to be in the neighbourhood of 200 miles". A Wellington was despatched to search along this track. The weather was none too good, with rainstorms, low cloud and a very rough sea, making searching for a small dinghy very difficult. Added to this was the fact that the aircraft was flying more or less into a setting sun. Despite these difficulties a good look-out was kept and after about a 100 miles flying, the rear gunner reported a Verrey light on the port quarter, this being some 45 minutes before estimated time of sighting. The aircraft altered course and flew in the direction of the smoke of the cartridge, which remained visible in the air, and located a dinghy containing three men. A rescue kit was dropped and information signalled to Base.

H.S.L. 159 from *Benghazi* was immediately ordered out to the position, and a second Wellington laid on to relieve the first, which was still circling the dinghy, at 19.00 hours. This relief was duly carried out and the relieving Wellington continued to circle the dinghy until 21.00 hours, by which time it had become pitch black, and as

there was no sign of the H.S.L., which had been delayed owing to high seas, it was decided to return to Base. Having plotted the dinghy's position, course was set for Base and after flying for about ten minutes, a light was seen on the water. Upon closer investigation, this proved to be the H.S.L. and she was signalled "Are you O.K.?" The reply being "Yes," she was signalled "Follow us and watch for lights," and course was reset back to the dinghy. Before the aircraft arrived at the position, double red cartridges were seen being fired by the dinghy, and as the aircraft passed overhead, the survivors flashed a torch which enabled the aircraft to drop a flame float close by. The aircraft then dropped two other flame floats to form a triangle with the dinghy in the centre and at the same time commenced to fire Verrey cartridges so that the launch could see the aircraft's position.

The Wellington circled for over an hour, replacing the flame floats as they went out, firing Verrey cartridges, and switching on the aircraft landing lamps to indicate the position to the launch, which arrived at approximately 23.00 hours.

This is the first combined air and sea rescue on record achieved by night in the Mediterranean, and is an excellent example of team work carried out under very difficult conditions.

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FLYING



CONTROL

PART II. 1942-1943.

THE DEVELOPMENT OF Flying Control in the Middle East, from its inception until our retreat to *El Alamein*, was described in the last number of the R.A.F. Middle East Review. This second part of the article deals with subsequent expansion and the introduction of Area control.

Central Flying Control

During the summer of 1942 the ground position in the Western Desert remained static, but night after night strong forces of heavy and medium bombers crossed the Delta from their bases in the Canal Zone or *Palestine* to attack the harbours at *Benghazi*, *Tobruk*, *Mersa Matruh*, *Sollum* and *Bardia*, *Crete*, or the enemy's forward landing grounds at *Fuka* and *Daba*. It was inevitable that many of the aircraft returned lame and some

service was urgently needed to assist them to make safe landings at base or at more conveniently situated landing grounds. The answer to this problem was the establishment of the Central Flying Control in the Fighter Operations Room at Air Headquarters, Egypt. The Flying Control Officers watched the plots of returning bombers creeping across the operations table — guard watches were maintained on as many as eight operational frequencies — and as intercepted bearings related to their respective plots, "owners" were given the latest information of their aircraft. A night seldom passed without at least one or two returning bombers needing definite assistance, and on the instructions of the Central Flying Control airfields were illuminated, pyrotechnics fired, and searchlight homing brought into action.

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From the sublime:—
(Control Tower at Civil Air Port in the Middle East)

Regional Flying Controls

The situation changed completely when the VIIIth Army advanced across *Cyrenaica* in the autumn and winter of 1942. Static fighter defences were set up to protect supply bases in the rear and the convoys passing along the coast. Air Headquarters, Egypt, became Air Defences, Eastern Mediterranean, and it was impossible to maintain an adequate aircraft safety organisation from the Central Flying Control in *Cairo*. That had done its job and done it well under the circumstances already described. It was now necessary to meet the changed conditions, and so was born the idea of establishing a series of Regional Flying Controls along the coast, located in the operations rooms at the Fighter Group Headquarters at *Haifa*, A.H.Q., A.D.E.M., *Benina* and, later, *Tripoli*. The responsibilities of the Regional Flying Controls fell under four headings:—

- (i) Direct control by W/T or other means of aircraft in distress and bomber liaison.
- (ii) The co-ordination of Air/Sea Rescue and Desert Rescue action.
- (iii) The tracing of aircraft reported missing or overdue on the same lines as the Air Ministry department, A.S. 4.
- (iv) The establishment of an information bureau where all information concerning the safety of aircraft was kept available, and from whence all warnings of a navigational nature were notified to interested flying units.

The Regional Flying Control at *Benina* was particularly successful in bomber liaison, being situated close to and in an ideal position to assist the Ninth United States Bomber Command, and letters of appreciation for services rendered were received from them. The close liaison and interchange of information maintained between the Movements Liaison sections in the Filter Rooms and the Regional Flying Control was the secret of the organisation's smooth working. The R.D.F. information was passed immediately from the

- (i) Direct control by W/T or other means of aircraft in distress and bomber liaison.

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—:To the ingenious
(Control Office on desert landing
ground, constructed of old petrol
tins)



Standard design for Control Towers on base airfields.



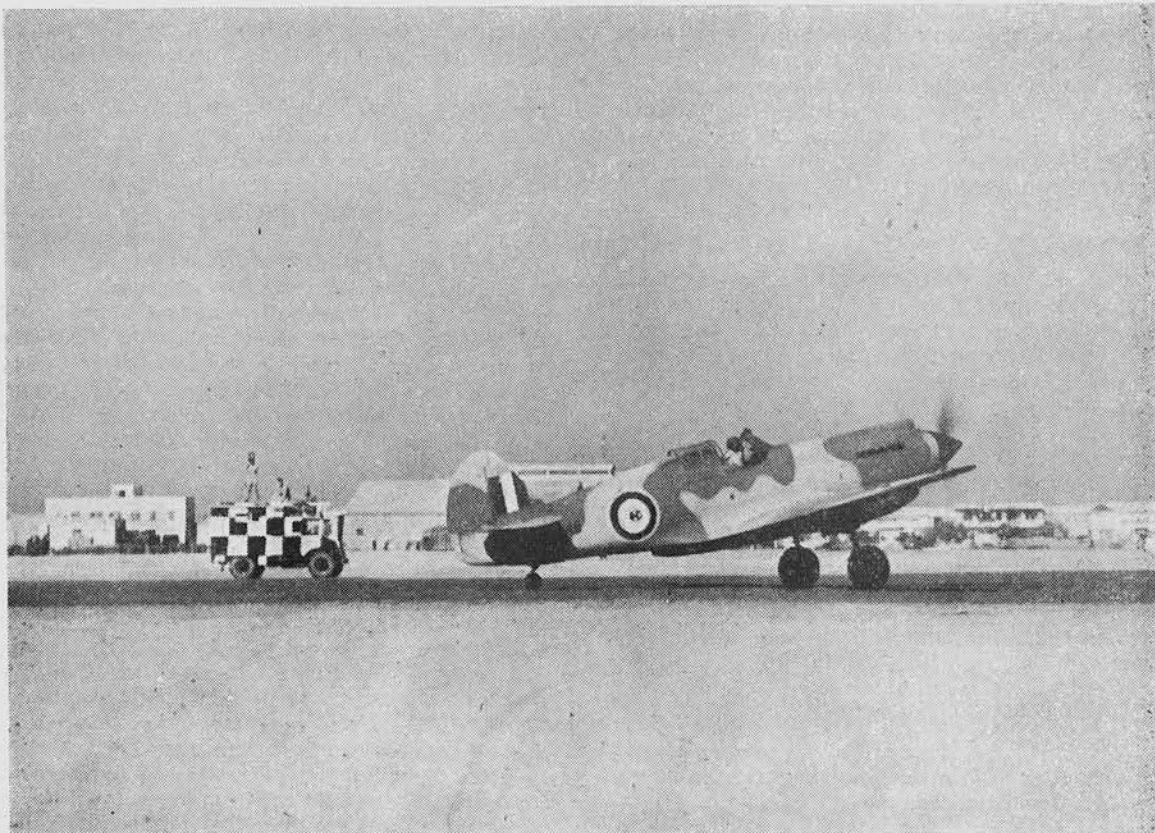
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The Airfield Controller and his satellites

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The Airfield Controller, from the runway Control Van, gives a Hurricane of the R.E.A.F. permission to take off

Filter Rooms to the Flying Controls, and HF/DF bearings intercepted by the latter's W/T watches were passed to the Movements Liaison Officer, thereby assisting identification of his plots.

The most important development during the period, however, was the organisation for tracing overdue aircraft. Hitherto each flying unit had been responsible for the initiation of request-news signals when aircraft failed to arrive, and no organisation existed to carry searches to their conclusion or to maintain a record of the numbers of aircraft adrift. Now it became the duty of flying units to inform the appropriate Regional Flying Control of aircraft overdue. In the first two months over 500 aircraft were so reported, and subsequent analysis proved that out of this number only about two per cent were in any form of trouble. Of the rest, pilots had failed to book in, incorrect signals had been originated, aircraft had made non-scheduled stops; in fact, a general state of slovenly disregard on the part of all concerned for the movement of aircraft regulations was discovered. A vigorous drive to improve conditions started, and up to the time of writing has met with some success, but by no means enough; there is still an average of some 150 aircraft unnecessarily reported overdue each month.

More information than hitherto also became available upon which the Air/Sea Rescue Squadron could work, and close liaison was kept by the Regional Flying Controls with civil and military units to assist in searches for, and the rescue of, crews forced down over land. In time, however, it became obvious that a dual control problem was arising in the field of air/sea rescue. Operationally, air/sea rescue was the responsibility of No.201 (Naval Co-operation) Group, but more and more of the work of co-ordination of the necessary information was undertaken by the Regional Flying Controls under A.H.Q., A.D.E.M. To obtain the maximum value from the organisation and at the same time save manpower it was decided to put the whole on a Middle East basis, and fuse the Regional Flying Controls and the Air/Sea Rescue organisation. The Regional Flying Control was therefore moved from A.H.Q., A.D.E.M., to H.Q., No. 201 (N.C.) Group, and a plan implemented to locate the various Regional Flying Controls in the most suitable geographical positions, all under the direct control of H.Q., R.A.F., M.E. A control was formed at No. 25 Fighter Sector in Cyprus; the Control at Haifa moved to Ramleh; Sub-Controls were formed on the airfields at Mersa Matruh and El Adem; the Control at Benina re-

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mained, and the Control at *Tripoli* was moved to *Castel Benito*. Thus was built an aircraft safety organisation with executive powers in air/sea rescue, extending from *Cyprus* to the Tunisian border. Immediately prior to the invasion of *Sicily*, the Regional Flying Control at *Malta* was added to the chain.

Increase in Ferry Controls

Alongside the development of the Regional Flying Controls came the big increase in the number of Ferry Controls and Staging Posts along the Ferry and Reinforcement routes, with subsequent increased need for this specialised form of Flying Control. As operations moved westwards, Staging Posts were opened at *El Adem*, *Marble Arch*, *Castel Benito*, and onwards to *Biskra*, *El Aouina*, *Maison Blanche*, *Rabat Sale*, etc. Local Airfield Control personnel were provided to handle the ever increasing flow of transport and reinforcements arriving from *Great Britain* and the *United States*, and safety facilities were created from the *Atlantic* to the *Persian Gulf*, from *Italy* to the *Sudan* and *South Arabia*.

The School of Flying Control

This vast expansion stretched the supply of trained Flying Control personnel to the limit. Bomber Command was absorbing all the output of the School of Flying Control in *England*, and the need for personnel in the Mediterranean area became acute. To overcome the difficulty and

meet the demand, a School of Flying Control was inaugurated in *Cairo*, where officers and airmen could be trained as Flying Control Officers and N.C.O. Airfield Controllers. A comprehensive syllabus was drawn up including Local Control of operational and non-operational aircraft; Regional Control; Navigation; Meteorology and Signals; with lectures by specialists on such varied subjects as the performance of different types of aircraft, accidents investigation and methods of controlled approach.

The School is now well established. Personnel selected for training spend up to three months in preliminary training on airfields before taking the Course, which is followed by a further period under instruction before they are finally posted.

As this article goes to press, O.T.U.s are opening in *Egypt* and the *Levant* and Flying Control Officers, some from Middle East resources and some fresh from the United Kingdom, are taking up their duties of assisting the crews and training them in Flying Control procedure. The aim of Flying Control is to render the maximum possible assistance to pilots, not only when in trouble, but at all times. On their side pilots can assist Flying Control to carry out this important work by rigidly adhering to the instructions laid down, and by remembering that these instructions have been issued solely for the safety and assistance of the crews who fly aircraft. Those on the ground are the servants of those who fly, but only by complete understanding and co-operation can they achieve success in their tasks.

R.A.F. MIDDLE EAST REVIEW No. 2.

Supplies of the above number are now exhausted. Requests are being received for them, however, and it would be appreciated if Units possessing copies which they no longer require would return them to H.Q., M.A.A.F. (S.C.O.R.U.)

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THE NUMBER 216 is a famous one in R.A.F. history in the Middle East. The connection goes back to June, 1919, when No. 216 Squadron arrived in *Egypt*. At the outbreak of the present war, the squadron was still here and was the only heavy night-bomber unit in the Middle East. Its *Valencias* were even then, however, employed largely on transport work. Now it is purely a transport squadron and comes under No. 216 Group.

This Group, which bears the same number as the old squadron, was formed on 21st May, 1942, to control the aircraft reinforcement routes in the Middle East. On 9th September it was re-formed with enlarged scope as No. 216 Air Transport and Ferry Group, controlling the transport squadrons in the command as well as the ferry routes.

Thus what had happened in effect was that where there had formerly been one bomber squadron that did transport work in its spare time there was now a Group controlling five transport squadrons flying over a million miles a month and an organization comprising eight ferry routes, over which delivery pilots were flying more than a million and a half miles every month.

Importance of the Group's Work

What makes the Group's work so vital is the vastness of the territory that it has to cover. In

Africa itself the Group's aircraft have to operate from the West Coast to *Egypt*, and from *Egypt* to *Algeria*; beyond *Africa* they operate across *Arabia* to *India*. Especially during the long period when the Mediterranean was virtually shut to our shipping, the responsibilities resting on the flying organization, and the strain thrown on it, were enormous. The strain was made greater all along by the chronic shortage of load-carrying aircraft.

From the beginning of the war the value of air transport had been recognized by the enemy both in the European and African campaigns. We had lagged behind. Where the enemy had employed hundreds of load-carriers, we had only tens available. The fact that in April, 1942, our fighters shot them down like grouse on the 12th does not alter the fact that the enemy had some 300 transport aircraft available for the final stages of the North African campaign. We had to start almost from scratch, the only purely transport aircraft available being those belonging to the commercial air lines.

On the ferry side of the organization such problems did not, of course, exist. The work — before and since No. 216 Group came into being — had just gone on steadily, week in, week out, giving the squadrons the aircraft with which they eventually won and maintained the air supe-

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rior to what they enjoy today. Where the Group's work has been valuable is in the co-ordination of effort, cutting out waste and overlapping.

In the following paragraphs some idea is given of the two sides of the Group's work and of the problems that had to be met before the fusion into one organization became possible.

Before the Group Took Over

As already mentioned, on the outbreak of war any odd jobs in the way of transport had of necessity to be undertaken by No. 216 Squadron's Valencias. They carried stores and personnel to and from the Western Desert and between *Egypt* and *Iraq*. One journey was made in October, 1939, to take General Wavell and his staff for the signing of the Anglo-French-Turkish agreement.

In October, squadron crews went to England to collect the Bombays that were soon to become one of the most familiar features of the Middle East — the old faithfuls, a few of which were still in service in 1943. The first Bombay transport flight was made on 6th November, 1939, when one flew to *Matruh* to bring back some Staff Officers to *Cairo*. This month also saw the inauguration of a weekly mail service between *Egypt* and *Iraq*, run by No. 216 Squadron. By the end of the year, however, air transport in the command can scarcely be said to have begun.

Until *Italy* entered the arena in June, 1940, No. 216 Squadron pursued the even tenor of its way, doing useful even if not exhilarating work. In the light of later developments, the most significant trips were those made by Bombays in helping units to move. On 11th May, for instance, the Squadron Operations Record Book states: "One Bombay to *Amman* and *Port Said* moving No. 14 Squadron attachment"; on 18th May: "Four Bombays to *Amman* to assist 2nd Echelon to move to *Port Said*". These were pointers to the days in 1942 and 1943 when whole fighter wings were to be flown in behind the enemy's lines and maintained exclusively by air transport, and when the ground personnel and equipment of the whole Tactical Fighter Force were to be flown over to *Italy*.

A Temporary Return to Bombing

With *Italy* in the war and menacing the frontier from *Cyrenaica*, No. 216 Squadron reverted partly to its original function of bombing. This was due to the fact that, apart from a few Blenheims, there were no other aircraft on hand to do the job.

Nevertheless, in addition to bombing the Italians, the squadron's Bombays and Valencias found time for such occupations as bringing stretcher cases back to the rear, taking guard reliefs to desert frontier posts, conveying stores and rations, and assisting in the move of squadrons to *Aden* and *Malaya*.

In October, 1940, the squadron was called in for some bombing in the desert. On the 10th, for example, a Bombay was sent to bomb the town of

land forces in attacking military concentrations at *Sidi Barrani*. But from the autumn of 1940 onwards the essential work was transport — of stores, spares, wounded and what are classed as "very important personages", including Mr. Eden, who was flown from *Cairo* to *Lydda*. In October a Bombay went as far afield as *Nigeria* and back.

Evacuation from Greece and Crete

The trouble in *Greece* gave the squadron more exciting work in the transport line. On 1st November a Bombay took No. 30 Squadron ground crew to *Heraklion*, in *Crete*, and thence on to *Eleusis*, near *Athens*. This was the first British aircraft to land on Greek soil after the Italian declaration of war, and was the first of a series of over a hundred flights, transporting war material to *Greece* and *Crete* — all completed without casualties or engine failures. These flights were supplemented by others made by two Sunderland squadrons, which normally carried out sea patrols.

In April and May, 1941, came the evacuation from *Greece* and *Crete*, in which a memorable part was played by No. 216 Squadron, No. 267 Squadron, which had been formed late in the previous summer for communication work, the Sunderlands, and by the flying boats of the British Overseas Airways Corporation, which were called in to help. The Bombays concentrated mainly on air crews; the other aircraft brought away passengers of all kinds, both service and civilian.

The Sunderlands began by evacuating 48 passengers from *Yugo-Slavia* on 16th April; they followed this by evacuating some 700 personnel from *Greece* — including a record number of 83 in one aircraft — and 90 from *Crete*. The B.O.A.C.'s share consisted of thirteen return trips between *Alexandria* and *Suda Bay*, the first on 22nd April and the last on 5th May. A total of 469 passengers were taken off, including the Greek Royal Family. The Lodestars of No. 267 Squadron evacuated nearly a hundred passengers between 24th and 28th April, including 44 from *Heraklion* in the face of continuous air activity over the airfield. No. 216 Squadron's Bombays, in addition to picking up aircrews and other personnel, took reinforcements of men and materials to *Cyprus* in May, as a precautionary measure.

Transport for Iraq and Syria

In March, four Bombays of No. 216 Squadron had been detached to *Khartoum* to cope with the transport of equipment, stores, ferry pilots and crews necessary for the West African reinforcement route. On 30th April, 1941, this detachment was re-formed as No. 117 Bomber-Transport Squadron and began operating on 1st May. A notable flight was made on 4th June when one of the squadron's Bombays flew to *Gura* to convey the Duke of Aosta and his Staff to captivity after his surrender in *Abyssinia*.

Meanwhile, in early May, trouble had broken out in *Iraq*. No. 216 Squadron's first task was

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to send five Valencias and three Bombays to *Lydda* on 4th May, thence to transport troops and ammunition to *Iraq*. Between the 6th and the 21st Valencias and Bombays carried out similar operations in support of the Army and also evacuated personnel from *Habbaniya*.

On 24th May a special operation took place, in which a Bombay flew thirteen sappers from *Egypt* to *Habbaniya*, whence they were taken by Valencias into *Syria*, with which we were nominally at peace, but across which the enemy was operating into *Iraq*. Once in *Syria* the sappers blew up an important bridge on the *Mosul-Aleppo* railway and got away without casualties in spite of being machine-gunned from an armoured vehicle.

In June, just before the Syrian campaign opened, Bombays of No. 216 Squadron dropped propaganda leaflets over towns in *Syria* by night. During the campaign itself the squadron carried up all kinds of war materials and brought back wounded.

The Period Before "Crusader"

Transport work went on as usual between the end of the Syrian campaign in July and the beginning of "Crusader" in November, 1941, and the opportunity was taken to make a number of changes and developments, the chief of which were as follows:— A daily newspaper and mail service to the desert was inaugurated by No. 267 Squadron in September. In October the B.O.A.C. formed, at the request of the R.A.F., a communicating service between *Helipolis* and the Western Desert to assist both Nos. 216 and 267 Squadrons. Also in October No. 117 Squadron was re-equipped with D.C.IIs, and at the end of the month the Squadron left *Khartoum* for *Bilbeis*, in preparation for operations in connection with "Crusader".

In November — and this paved the way for the creation of No. 216 Group — the Aircraft Movements Branch was formed at H.Q., R.A.F., M.E., with the object of co-ordinating the work both of the transport squadrons and the air reinforcements organizations under one control. These had previously been respectively under Air Staff and the C.M.S.O. branch.

Immediately before "Crusader" a special task fell to No. 216 Squadron. On the night of 16/17th November five Bombays were briefed to drop 60 parachute troops to sabotage enemy airfields in the *Tmimi* and *Gazala* areas. Mainly due to bad weather, the attempt was not a success and one of the Bombays was lost.

It is unnecessary to give a detailed picture of the activities of the transport squadrons during "Crusader". All that need be said is that they did a fine job of work. Throughout the campaign a regular desert transport service was maintained; help was given to No. 1 Air Ambulance Unit in evacuating casualties; and many urgent calls for petrol and other essential supplies were answered. The first appeal came on 20th November, when twelve tons of 37 mm.

ammunition, asked for at 12.30 hours, was delivered in Bombays at an advanced landing ground four hours later. Nos. 216 and 117 Squadrons were largely concerned with special tasks while No. 267 Squadron and the B.O.A.C. dealt with the more routine runs.

The B.O.A.C. worked in close co-operation with the R.A.F. and followed up the advancing VIIIth Army. Rarely was their terminal landing ground more than a score or so of miles away from the battle area. When the western terminus was at *Tmimi*, for instance, it was only 30 miles south-east of *Derna*, which was still in enemy hands. Towards the end of the advance, the B.O.A.C., together with No. 267 Squadron, was engaged in rushing petrol to our forward forces south of *Benghazi* who were running short.

In December No. 117 Squadron, in addition to carrying 97,500 lbs. of freight and 380 passengers, borrowed a Lodestar from the B.O.A.C. and flew the Air Mission, bound for *Russia*, as far as *Teheran*.

Activity after "Crusader"

During the withdrawal to *Gazala* in January and February, 1942, and the subsequent lull, the transport squadrons carried on steadily. Apart from the routine runs, flights were made much further afield. In February No. 117 Squadron flew General Alexander to *Delhi*, on his way to take over the *Burma* Command, and made two other trips to *India*, taking 3,200 lbs. of equipment to a squadron recently transferred there. In March five D.H.86s were allotted to No. 117 Squadron and its D.C.IIs were transferred to *India*. Some of "A" Flight pilots ferried the aircraft there and other pilots delivered a number of other D.C.IIs. In May the Squadron received some Lodestars and began a period of intensive training. Also in May a Lodestar of No. 267 Squadron took the Duke of Gloucester on his Middle East tour of *Cyrenaica*, *Egypt*, *Palestine*, *Syria* and *Iraq*.

At the end of February it had been decided that the B.O.A.C.'s Western Desert work was finished for the time being and its aircraft reverted to their normal civilian routes. Early in May, however, the B.O.A.C.'s Lodestars shared with No. 267 Squadron's Lodestars in the *Cairo-Malta* service, which had begun in March. Between them they operated six services a week until the end of June when the Axis advance overran the *Gambut* and other landing grounds that were being used. Before the service was suspended the B.O.A.C. had made 33 trips, carrying over 200 passengers and much mail and freight. For several months, when *Malta* was cut off by intense enemy air attack, air transport was almost its only link with the outside world. On an average, two weekly services were maintained and the aircraft sometimes took grave risks in taking off heavily over-loaded.

Another development of the period already mentioned was the creation on 2nd May of No.

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216 Ferry Group, although the transport squadrons were not directly affected until this Group became the Air Transport and Ferry Group in the following September.

The Withdrawal to El Alamein

Throughout the crisis of June-September, 1942, the transport squadrons made an all-out effort in the desert. Urgently needed stores and equipment were moved from place to place and many wounded brought back to safety. On the night of 9/10th June one of No. 216 Squadron's Bombays was given the special task of dropping supplies for the besieged garrison at *Bir Hakeim*, after two Hurricane-bombers had done so the previous night.

No. 117 Squadron found time for two delivery flights to *India*, and in July and August flew over a thousand passengers and many thousand pounds of mail and freight to and from *Malta* in D.C.IIIs. Other D.C.III's of No. 267 Squadron also made journeys between *Egypt* and *Malta*, one of their passengers being Lord Gort, the Governor of the island. Work was made easier by the issue in August of some 40 Lockheed aircraft to the transport squadrons and by the formation in July of No. 173 Squadron, with a mixed bag of aircraft, mainly for communication work in the Delta area.

So far the transport aircraft had come off remarkably light in casualties. On 24th July, however, the Bombays of No. 216 Squadron had their first loss when two were shot up on a temporary landing ground about six miles behind the front line. Early in August, again, another Bombay was caught in the air by enemy fighters and destroyed. The casualties included General Gott, who was to have taken over the command of the VIIIth Army.

Three Special Operations

Between July and September No. 216 Squadron was involved in three special operations. The first, on 9/10th July, was a strike by Albacores against a convoy running from *Crete* to *Tobruk*. To be within effective range of the convoy the Albacores had to refuel at an unoccupied landing ground 150 miles behind the enemy lines. This plan entailed a ground party to protect the bombers against air attack while refuelling and to defend the landing ground for a limited period against possible enemy raiding parties. No. 216 Squadron's job was to carry both the ground party and its equipment and the fuel and other necessities for the Albacores. Six Bombays took part and the whole operation went off almost without a hitch and without a casualty. The fact that the Albacores could not claim a definite sinking does not detract from the competence and daring of the operation.

The second operation, in early August, was one in which the R.A.F. assisted one of the Long Range Desert Group's thrusts deep behind the enemy's lines. No. 216 Squadron's task was to replenish four L.R.D.G. parties on their way back

to our own lines. To do this one of the squadron pilots reconnoitred the area south of *Mersa Matruh*, some 150 miles behind the battle area, to find a suitable landing ground. Our former L.G. 64 was chosen and on the night of 4/5th August three Bombays were briefed to deliver 800 gallons of petrol and rations for 160 men. They were also to bring back certain L.R.D.G. personnel. In spite of difficulties in locating the prepared flare path, two of the Bombays safely delivered the goods, and returned with 42 passengers, including the crew of a crashed Wellington and some escapees from *Tobruk*.

The third operation, in September, was a more ambitious combined-services affair, aimed mainly at disrupting enemy supplies by sabotage at *Tobruk* and *Benghazi*; a diversionary raid was to be made at *Barce* and a temporary base was to be established at *Jalo* Oasis by a force operating from *Kufra*. No. 216 Squadron was called upon to transport the necessary supplies to *Kufra* and to stand by there with six Bombays. Five of the squadron's Hudsons were also detailed to drop dummy parachutists over *Siwa* Oasis with the object of causing alarm among the Italian garrison there and possibly making the Germans rush reinforcements from the *Matruh-Tobruk* area. This task was duly carried out by the Hudsons, although the exact result could not be gauged.

The only one of the Bombays at *Kufra* to be employed was briefed to fly to a landing ground near *Jarabub* to evacuate wounded L.R.D.G. personnel. In spite of a flight of 400 miles over featureless desert, the landing ground was located and the wounded flown back safely to *Kufra*. There was trouble a few days later, however, when the enemy made a surprise air attack on *Kufra*. Although there were no casualties to personnel, three Bombays were written off on the ground. On the credit side was a "probable" HE.111, which a member of one of the air crews fired at with a Bren gun.

This operation did not achieve the hoped-for results. Nevertheless, with the others, it shows the varied activities expected of the transport squadrons—activities that added spice to normal and more mundane duties.

No. 216 Group in its Final Form

On 9th September, 1942, No. 216 Group took on its final form as an Air Transport and Ferry Group. It immediately began its preparations for the October offensive, including the planning by the Group Signals of special wireless channels for the advanced transport centres. When the VIIIth Army advanced, the transport squadrons were ready and better organized than they had ever been before. The widest possible use was made of them during our advance, and once again the B.O.A.C. was called upon to play an active part by carrying men and materials to and from the desert. Throughout the campaign fuel, ammunition, water and supplies of all kinds — including such comparative luxuries as current

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newspapers — were flown wherever they were needed, casualties were brought back and, in addition, a number of special assignments were undertaken.

The first assignment of the transport squadrons was on the first night of the offensive and was similar to that carried out over *Siwa* Oasis in the previous month. On the night of 23/24th October, in co-ordination with a Naval simulated landing, four Hudsons of No. 216 Squadron dropped 32 dummy, self-destroying parachutists in the *Fuka* area. The object, as in September, was to cause confusion among the local enemy troops, thereby diverting attention from the main operations taking place at *El Alamein*.

Fighter Wings Moved by Air

The next operations exploited the full tactical possibilities of air transport in wartime and hark back to the occasions in May, 1940, when Bom-bays helped units to move from place to place in the command. Now the ground crews and equipment of complete fighter wings were carried forward *en masse* to confound the enemy by operating fighters where he would never expect them to be, and providing air cover for our most forward troops.

On the first occasion on 11th November No. 239 (Kittyhawk) Wing had been moved forward by surface transport to the south of the retreating enemy columns. It was supplied by air with ammunition, water and equipment until the S. & T. Column could catch up. The next day a landing ground some 120 miles south-west of *Maddalena* was reconnoitred and supplies of fuel, water and rations were laid down by transport aircraft, ready for a move of No. 243 (Hurricane) Wing. On the 13th nine Hudsons flew ground personnel of No. 243 Wing to the landing ground where they made everything ready for their Hurricanes to operate against the retreating enemy in the *Jedabya-Agheila* district. The squadrons were maintained by air until the 16th when they were withdrawn by transport aircraft.

Other more ambitious "wing lifts" followed, involving the whole available transport force. On 18th December No. 239 Wing was moved from *Belandah* to *Marble Arch* and was operating its aircraft on the same day by 13.30 hours. No. 216 Group had to make four "sorties" at full strength, to carry a total weight of approximately 160 tons of personnel, equipment and supplies, including 35,000 gallons of petrol and oil.

This feat was followed up on 17th January with a lift of No. 239 Wing from *Hamraiet* to a landing ground about twelve miles from *Sedada*, specially prepared by an R.E. aerodrome party. Of the 25 D.C.III's, 22 Hudsons and eight Bom-bays employed, the only loss was one Bombay, which was written off when a tyre burst.

Two more lifts carried the wing forward to *Castel Benito* by 24th January, only one day after the enemy had evacuated *Tripoli*. For

some of these operations No. 216 Group had the help of the American transport squadrons, which approximately doubled the load-carrying capacity. From now on American help began to make all the difference to air transport work in the Mediterranean area.

Other Special Operations

In addition to these "wing lifts" there were other interesting and well executed special tasks. Daily between 19th and 26th November transport aircraft supplied ammunition, water, rations and diesel oil to an armoured force operating near *Msus*; between 28th November and 1st December all available aircraft, except No. 267 Squadron, were engaged in carrying 250 lb. bombs to the forward landing grounds, the heaviest load in one day being 52 tons.

The reason for No. 267 Squadron's absence on this occasion was that it was busy with an operation that consisted in flying some 250 men, with tools and equipment, from *Egypt* to *Malta* in thirteen Hudsons and three D.C.III's. This operation was repeated between 2nd and 5th December and again between 7th and 8th December.

On 11th December came an operation in which two Hudsons led a force of eleven Hurricanes to *Malta* and thence via an overland route across *Tunisia* to *Algiers*. The Hudsons returned with Hurricane pilots and other passengers. In a repeat performance, one Hudson and one Hurricane were lost.

The Ferry Side of the Work

Before rounding off the story of No. 216 Group in the first nine months of 1943, it must be remembered that during the time that the transport squadrons were engaged in the desert campaigns, the ferry side of the Group's work had continued uninterrupted. By 1943 it bore little resemblance to the ill-equipped organization that had in 1940, with a few primitive and inadequately-staffed landing grounds, practically no signals facilities and no flying control or other flying aids, blazed the West African reinforcement route that had been pioneered four years earlier by Imperial Airways. On the pilot alone in the earlier part of the war rested almost all the responsibility of getting his aircraft to *Egypt*.

Yet the first convoy of one Blenheim and six Hudsons that came through in October, 1940, was the beginning of a stream that was to swell in two years to a thousand aircraft a month, flying over routes totalling over 11,000 miles. Where formerly each journey was something of an adventure into the unknown, by 1943 fewer than .65 per cent of the aircraft ferried failed to reach their ultimate destination.

In the early days the landing grounds and the ferry crews were looked after by the African Reinforcement Route Control. On 15th December, 1941, however, the A.R.R.C. crews were absorbed in the Aircraft Delivery Unit. Throughout 1941 and 1942 reinforcement routes were

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lengthening and the flow of aircraft increasing. Up to 1942, however, each section of the reinforcement routes ran its own show, under the general direction of H.Q., Middle East. There was little or no co-ordination of effort. In May, therefore, No. 216 Group was created to operate all the ferry routes and to control the A.D.U., which by then had some 300 pilots on its strength.

Everything was tightened up to ensure that the aircraft flowed as easily and speedily as possible from the erection centres to the immediate battle areas, to the storage units or to the *India* Command. Directly under the Group came the Ferry Controls, in turn responsible for the staging posts on the air routes—the *Takoradi* Route, the Northern Trans-African Route, the Southern Trans-African Route, the Nile Valley Route, the Port Sudan Route, the North Arabian Route, the South Arabian Route and the Western Desert Route.

The A.D.U. was later split into two sections to deal more conveniently with local commitments and by 1943 was employing some 450 pilots and aircrew — British and men from the Colonies and Dominions, Poles, Yugoslavs and French.

Developments in 1943

By the beginning of 1943, the two complementary sides of No. 216 Group were in full swing. At any given moment there were some 200-250 aircraft, including transports, flying on the Group routes. More and better aircraft — particularly Douglas Dakotas — were to hand for the transport squadrons and new staging posts had been successively set up at intervals roughly 100 miles behind the front line, to cut down to a minimum the time necessary to get the freshly-delivered aircraft into action.

In January No. 249 Wing was formed to absorb the advanced elements of the transport squadrons that had previously been under the control of a curiously disembodied unit that had never been established; on 27th January a staging post was opened at *Castel Benito*, the main *Tripoli* airfield, only four days after the fall of the town. In February a weekly air service to *Karachi* was inaugurated. In March — the month in which the new Transport Command was formed in England — the Group pulled off another successful operation, in which on the 27th 1,500 reinforcements for the VIIIth Army, with 15,000 lbs. of urgent equipment, were flown up to *Castel Benito*. In April the new route, United Kingdom — Morocco — Middle East, was opened, and the first two Air Despatch and Reception Units were formed to facilitate the handling of freight and mail and the movement of passengers by air. In May the last of the old Bombays were withdrawn from service — to the delight of the maintenance crews — and the transport squadrons were now almost entirely equipped with Dakotas. In June a daily service was running from *Egypt* to *Casablanca* and the B.O.A.C. began its service from the United Kingdom through to *Russia*. Four additional A.D.R.U.s

were also formed, bringing the total number up to six.

Preparing to Invade Sicily

The month of June saw the Group's transport and ferry organizations working to full capacity. The transport squadrons flew nearly 7,000 hours (about 1,700 more hours than in May); carried over 9,000 passengers (about 2,500 more than in May); and delivered over 700 tons of freight and mail (about 100 more tons than in May). The increase in flying hours was largely due to the ease of maintaining the new Dakotas, and all the routine trips ran a hundred per cent to schedule. Attention was also paid to the casualty-clearing side of the transport work and some 50 aircraft were adapted to augment, when necessary, No. 1 Air Ambulance Unit.

Everything was now set for the next phase of the Mediterranean campaign—the invasion of *Sicily*. In preparation for this, Advanced H.Q., No. 216 Group, was formed at *Tunis* on 1st July. The aircraft at its disposal comprised ten D.C.III's and twenty Hudsons of No. 117 Squadron, based at *Castel Benito (Tripoli)*, ten D.C.III's of No. 267 Squadron, based at *El Aouina (Tunis)*, and four extra Dakotas attached from No. 216 Squadron. To supplement this force, it was arranged that immediately the United States Troop Carrier Command H.Q. at *Kairouan* had fulfilled its airborne-landing commitments, its aircraft would come under the operational control of Advanced H.Q., No. 216 Group, for transport purposes. The aircraft that were thus made available—approximately 320 C.47s and C.53s—were predominantly U.S.A.F. and to facilitate co-operation a number of U.S.T.C.C. officers were located with Advanced H.Q. Also under the control of Advanced H.Q. were No. 1 Air Ambulance Unit and a flight of six Sunderlands detached from No. 230 Squadron (*Mombasa*) and based at *Bizerta*, for communication work between *Malta* and *North-west Africa*.

Immediately before the invasion, No. 216 Group carried out one of its large-scale "lifts" when its aircraft carried the ground personnel and equipment of two fighter squadrons engaged in convoy protection from the Delta to *Cyrenaica*. Another type of operation, which No. 216 Group had carried out several times in the past, took place on the night of 11th July. Four Dakotas of No. 267 Squadron were briefed to drop dummy paracutists and incendiary flares over *Marsala*, on the west coast of *Sicily*. One of the aircraft crashed a few minutes after take-off, but the others completed their mission, which resulted in the enemy temporarily diverting some of his forces that had been proceeding south.

Work During the Invasion

On 13th July fifteen Dakotas—ten of No. 216 Group and five U.S.A.F.—carried the servicing echelon of the 31st Fighter Group squadrons, comprising 75 personnel and 1,700 lbs. of equip-

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ment, from *Gozo* to *Licata*. These were the first transport aircraft to land in *Sicily* and were the beginning of a stream of aircraft that flew personnel, equipment, stores and M.T. from *North-west Africa*, *Malta* and *Pantelleria* into the invaded island.

On the 19th, at the request of the 15th Army Group, No. 216 Group began a regular service to *Sicily* that was gradually extended, linking up *Tunis-Cassibile-Palermo-Malta*. Throughout the Sicilian campaign this service was maintained, and in addition the Group was called upon to fulfil such tasks as the transportation of Fighter Control staffs from *Malta* and *Tunisia*; complete headquarters consisting of over a hundred personnel and 40,000 lbs. of baggage and equipment; Jeeps, motor-cycles and trailers, and such random demands as fifteen tons of boots and stockings for the 7th Army. The number of casualties carried out of the island rose from 2,462 in July to 4,422 in August.

Valuable work was done in *Sicily* by the three mobile A.D.R.U.s—Nos. 24, 25 and 26—that were sent there. They operated under extremely difficult circumstances, improvising continually, and were largely responsible for the smooth running of transport matters in the island.

The Group's achievements in *Sicily* are best shown by the figures themselves. Between 13th July and 18th August 2,689 passengers were flown into *Sicily* and 1,054 flown out; 785 tons of freight were carried either in or out; and, with No. 1 Air Ambulance Unit, 6,538 casualties were flown to safety either in *North-west Africa* or *Malta* or from forward landing grounds to the evacuation bases in the rear of the fighting. In spite of the added commitments of the campaign, the only curtailment of the normal routine services was that the *Ras el Mar-Casablanca* leg of the daily *Cairo-Casablanca* run was reduced to alternate days.

In the Group's work as a whole, records continued to be made in July and August in both the transport and ferry sides. In July the transport squadrons carried 12,558 passengers and 1,289 tons of freight; in August — with the help of No. 28 S.A.A.F. Squadron, which had been formed towards the end of July and added to the Group's strength — 14,463 passengers and 3,395 tons of freight. The ferry pilots also improved on the June figures and delivered 1,412 aircraft in July and 1,241 in August to *North-west Africa*, the *Middle East*, *India*, *Iraq* and *South and West Africa*.

The Assault on Italy

There is no doubt, however, that the climax of No. 216 Group's work in the Mediterranean area was reached during the assault on *Italy* in Sep-

tember. In the initial stages of the campaign, the ground personnel and equipment of the whole of the Tactical Fighter Force and of a considerable part of the Bomber Force were lifted into *Italy* by aircraft under the Group's operational control.

The importance of these mammoth "lifts" is obvious when it is realized that, owing to the distances involved, no single-engined shore-based fighters would have been available to support the Allied armies during the critical early period except by this method.

In addition to its work in *Italy* in September, the Group also lent a hand in the Aegean operations. In August a detachment of eight No. 216 Squadron Dakotas had been sent to *Ramat David* in *Palestine* in connection with paratroop training. When the occupation of *Cos* took place on 13th September, six Dakotas dropped 120 paratroops at selected points on the island. Altogether, up to the end of September, Dakotas flew 680 Army personnel to *Cos* with vehicles, equipment and stores weighing 171,598 lbs., as well as R.A.F. Regiment and other air force personnel and their equipment.

September figures showed an improvement even on those of the two previous months and the transport squadrons set up a new record. A total of 17,374 passengers and 3,907 tons of freight were carried on the Group routes, the aircraft in doing this covering a total of 1,390,562 miles.

Three Years of Progress

As this article briefly indicates, great strides have been made in the development of transport and ferry work in the Mediterranean area since the beginning of the war. The ferry side was obviously essential all the time, as we strove to build up an air force capable of attaining air superiority — and at last succeeded. The value of the transport side was not so quickly recognized except by people with vision, but the record of the transport squadrons alone is sufficient proof of their value.

Even when they were inadequately equipped, they had an important share in all the Mediterranean campaigns — in the Desert, in *Greece* and *Crete*, in *Iraq* and *Syria*, in the retreat to *Alamein* and in the victorious advance to *Tripolitania* and *Tunisia*. By that time, with the invaluable help of U.S.A.F. aircraft, they had showed the possibilities of mass air "lifts", a development that was to be exploited still further in the Sicilian and Italian invasions.

Much air has flowed past the transport aircraft's wings since those days when, even before *Italy* was in the war, No. 216 Squadron assisted R.A.F. units to move from place to place.

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A Difficult Rescue

AT APPROXIMATELY 03.00 hours on 10th July, 1943, the ten members of the crew of a Liberator of the 93rd U.S.A.F. Bombardment Group, having completely lost themselves after an invasion-eve attack on *Sicily*, decided to bale out, as the aircraft had reached the limit of endurance and a forced landing was impossible in the darkness. Unfortunately, they were over one of the most inaccessible spots in the *Libyan* desert, some 200 miles south of *Nofilia*, in the *Gulf of Sirte*. The area consists mainly of hard, black volcanic lava, strewn with boulders, the only recognizable features being various rock formations. This barren and inhospitable region became known to the lost airmen and their rescuers as "The Coal".

The story of this rescue — which took the air force and army units concerned over ten days, during which aircraft flew 120 flying hours, the land party covered 1,350 miles and the total area searched was 15,500 square miles — is a good example of army and air force team work and of joint triumph over difficulties.

The Search Begins

Having made up their minds to bale out, the Americans sent out a W/T message to that effect. Bearings were taken on the distressed aircraft by the H.F. D/F stations at *Benina*, *El Adem*, *Misurata*, *Berka*, *Marble Arch*, *Heliopolis*, *Cairo West* and *Malta*. From these it was decided by No. 212 Group Flying Control and the Air/Sea Rescue Flight that the best position to start a search was 27.48 N., 18.27 E.

At 08.25 hours the search began with an Air/Sea Rescue Flight Wellington airborne for this position. After eight hours flying the pilot returned to base, having completed a square search of 900 square miles without result. Two Liberators of the IXth Bomber Command also made an unavailing search around this position.

On the evening of the 10th a conference was held between the Air/Sea Rescue Flight and the IXth Bomber Command and an extensive search was planned, using three Liberators, a Wellington and a Blenheim. The area to be covered was to the west of the one already searched and extended 150 miles north and south and 65 miles east and west.

On the 11th the Wellington and the Blenheim were unsuccessful, but two of the Liberators reported five survivors in position 27.10 N., 18.00 E., and two survivors in position 26.50 N., 17.50 E. Supplies were dropped for both parties.

A Land Party Organized

Meanwhile, a land rescue attempt had also been organized through No. 93 Sub-Area.

sisted of a light car patrol of No. 9 Motor Battalion of the Sudan Defence Force. The British officer in charge received his orders at 11.00 hours on the 10th, stocked five eight-cwt. vans and a fifteen-cwt. wireless truck, and with a party of sixteen men left *Benghazi* at 13.30 hours to report to the Civil Affairs Officer at *Jedabya*, who was to provide maps and route reports of the area.

The party arrived at 17.30 hours to find that the Civil Affairs Officer was at *Benghazi*. On being shown maps of the area around *Marada*, some 90 miles south of *Agheila*, the S.D.F. Bimbashi realized at once that he could not do the journey with his present vehicles since they could not carry sufficient water as well as the necessary petrol. He arranged, therefore, for a three-ton lorry and 1,200 gallons of petrol to join the party at *Agheila* at dawn on the 11th.

On telephoning the D.A.Q.M.G., No. 93 Sub-Area, he was ordered to proceed immediately and leave one van to collect maps and route reports when the Civil Affairs Officer returned. The Bimbashi, however, did not feel inclined to venture into the desert south of *Agheila* without making sure of maps, so remained at *Jedabya* until the Civil Affairs Officer returned at 19.30 hours. He did not have the necessary maps, and after telephoning the D.A.Q.M.G. it was arranged that next day maps should be dropped by air for the party at *Marada*. It was suggested that, owing to the difficult nature of the country, a sun compass should be provided, but the D.A.Q.M.G. said that he did not consider one was necessary since they did not have sun compasses ten years ago.

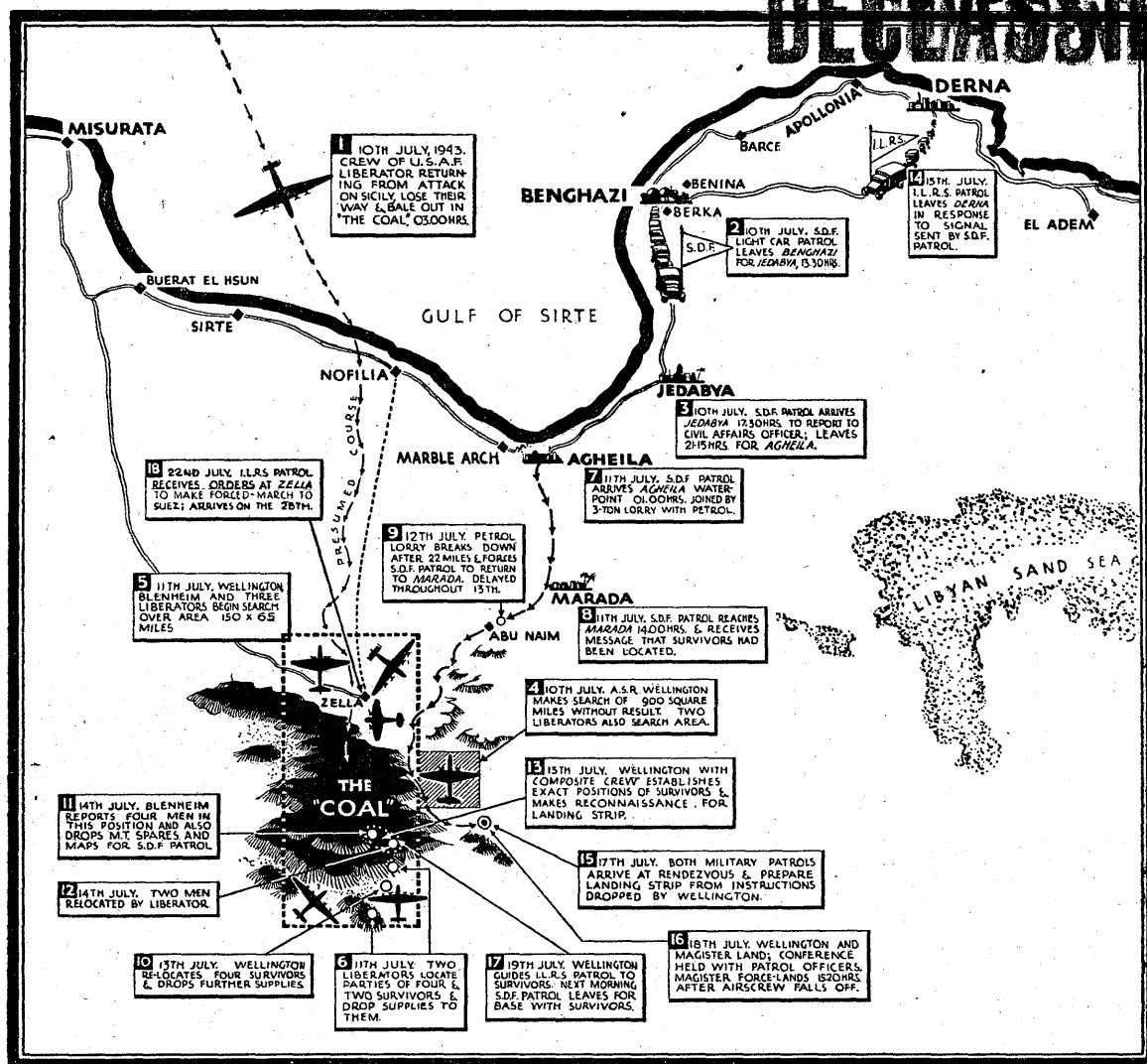
The patrol left *Jedabya* at 21.15 hours for *Agheila* and at 01.00 hours on the 11th reached *Maaten Bescer*, the *Agheila* water point, where it remained for the rest of the night. Soon after dawn it was joined by the three-ton lorry, and on arrival at *Marada* at 14.00 hours it was found that the R.A.F. had already dropped the maps. There was also a message saying that five survivors had been located in position 27.10 N., 18.00 E. The Bimbashi decided to proceed at dawn on the 12th south-west to *Abu Naim* and from there try to reach the survivors. The patrol was fortunate in finding a number of 2-gallon water and petrol cans at *Marada* as its own containers were leaking badly.

Difficulties to be Faced

From all reports it became evident that a most complex operation faced both the air and land units concerned. In the first place, much flying time was taken up in reaching the position and,

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secondly, "The Coal" in which the survivors were located consisted, as already mentioned, of rough, black volcanic rock, providing extremely difficult going for the land party and an equally difficult landing ground for aircraft.

For these reasons a Bisley carried out two sorties on the 12th to re-locate the survivors and also to reconnoitre the area. Although unsuccessful in finding the survivors, the pilot brought back much useful information, which later helped to speed up the rescue. The S.D.F. patrol on the 12th, having reached a point 22 miles west of Marada, had to turn back owing to a broken piston on the petrol lorry, without which it was impossible to proceed. They were delayed at Marada throughout the 13th, awaiting the arrival of two more three-ton lorries for which they had signalled, and certain M.T. spares which the R.A.F. was to drop.

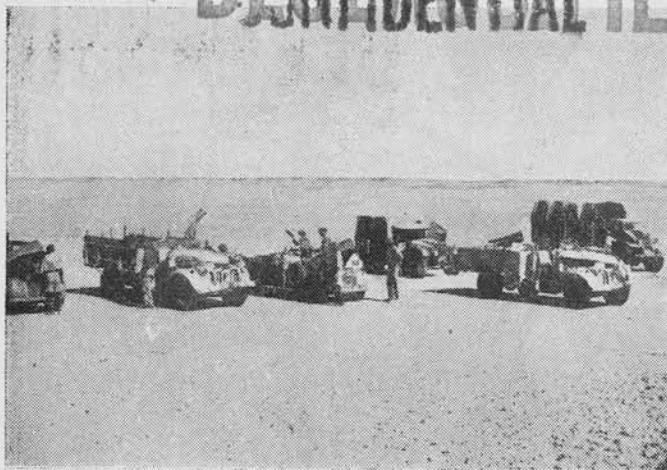
The American airmen had not been re-located since the 11th, and another extensive search was

organized by the Air/Sea Rescue Flight and the IXth Bomber Command for the 13th. Two Wellingtons and three Liberators carried out separate searches, one of the Wellingtons spotting four survivors in position 27.04 N., 17.56 E. and dropping further supplies. These men were the same as had been previously reported as five, a support for their parachutes fixed to provide shelter having been mistaken for an injured survivor. There was still no trace of the other members of the crew.

The two men seen on the 11th were, however, re-located by Liberators on the 14th in position 27.20 N., 18.00 E., and the group of four again seen by an Air/Sea Rescue Blenheim, who gave the position as much further north—27.24 N., 17.50 E. Supplies were dropped for both parties. The Blenheim also dropped the springs and other spares for the S.D.F. patrol and marked maps giving all known information about the missing airmen. The patrol then set out towards the

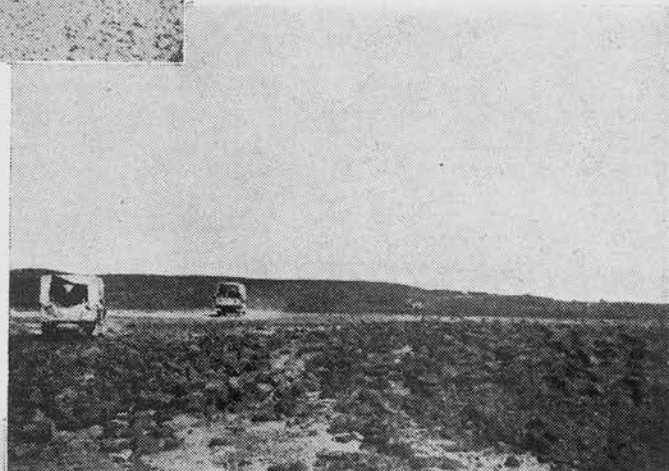
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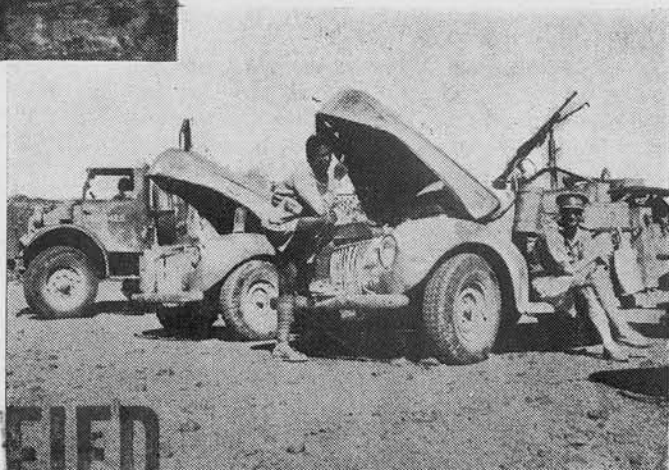
*Part of the Army land party
ready to enter the "Coal"*

*This glimpse of the convoy
travelling over the "Coal"
gives a good idea of the deso-
late nature of the terrain.*



*Making tracks for the trucks
to get through the "Coal".*

The S.D.F. patrol cooling off.



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estimated position, but the going was rough and rocky, with frequent patches of soft sand. All the vans boiled continuously and there were further breakdowns. These troubles persisted on the 15th and one of the three-ton lorries ran its big end. In the evening the Bimbashi signalled his battalion H.Q., suggesting that another patrol be sent out as he could not get the airmen back in the remaining vehicles without considerable delay. As a result, a patrol of the Indian Long Range Squadron, based at *Derna*, was despatched.

Preparing a Landing Strip

Up to the 15th July the exact positions of the survivors had not been clearly established. All personnel who had seen the Americans agreed, however, that they could re-locate, since they all said that there were various rock formations in "The Coal" that they could recognise. On the 15th, therefore, a crew for a Wellington was formed containing somebody who had been on each of the previously successful flights.

Between them they found all the survivors, the two parties turning out to be only eight miles apart. More supplies were dropped and a reconnaissance was made to find a landing strip for use as near "The Coal" as possible.

Information about the preparation of this emergency landing ground was passed next day to the S.D.F. patrol, which was still struggling forward, along a mountainous and rocky track, broken by large sand dunes, and as it was still mined from the time of the Wavell campaign great care had to be taken. The hard-worked vehicles, which were too light for the ground they were traversing, continued to give trouble and the battery leads finally broke up in the W/T truck.

On the 17th the going improved and better progress was made, although during the heat of the day the vans boiled ceaselessly. At 16.30 hours the patrol spotted an Air/Sea Rescue Flight Wellington, and after its attention had been attracted by very lights the aircraft dropped smoke generators and marking strips as well as full instructions for making the landing ground. At 17.30 hours the patrol reached the spot chosen for the landing ground and an hour later was joined by the I.L.R.S. party, which had made better time, having taken only two days and six hours from *Benghazi*. By 20.00 hours the combined parties completed the landing ground in position 27.30 N., 18.45 E. and had informed battalion H.Q. by signal.

The First Aircraft Lands

At 09.00 hours on the 18th an Air/Sea Rescue Wellington appeared and, guided by a smoke generator, landed safely on the prepared strip. Two and a half hours later the C.O. of the Rescue Flight arrived in a Magister. A conference was held at which it was decided that the I.L.R.S. officer should go up in the Magister and reconnoitre the best route into the volcanic rock area.

This was done and both parties left the landing ground at 14.30 hours.

At 15.00 hours the Magister flew over the patrols, but some twenty minutes later the airscrew fell off and the aircraft had to make a forced-landing. The crew was unhurt, but the position was so inaccessible that salvage of the aircraft was impossible. The accident was seen by the Rescue Flight's M.O., who was with the land party, and rescue was soon effected, the crew being sent back to the landing ground, 25 miles away, in one of the S.D.F. vans.

Next morning both patrols broke camp. The going was appalling among the black volcanic lava and the I.L.R.S., being better equipped with vehicles, drew ahead of the S.D.F., which had to stop continuously to remove boulders in order to get the vans through. At 13.45 hours the S.D.F. caught up with the I.L.R.S. patrol, which was resting in a native village. The S.D.F. drivers, having been at the wheel for seven hours, had to be rested, and the I.L.R.S. once more pushed on at 14.00 hours.

Shortly afterwards a Wellington flew over and when the S.D.F. Bimbashi wrote on the sand that the I.L.R.S. was ahead, the aircraft followed to assist in directing the search.

The Survivors Reached

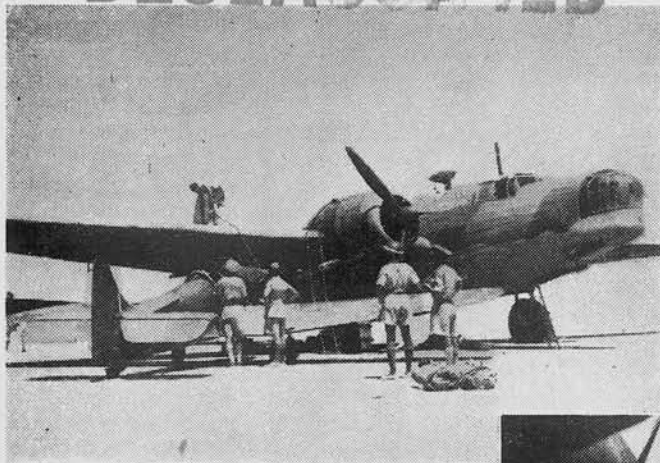
The search was at last successful. The Wellington guided the I.L.R.S. patrol first to the two Americans and then, eight miles away, to the other four. Two of the airmen were injured, but the others were well although weak and rather shaken after their ordeal. The two surviving officers reported that there were four other airmen somewhere in "The Coal". The First Pilot and the Flight Engineer, they said, had started to walk north—but had no water with them and their parachutes had been found rolled up under a tree; the remaining two airmen had at first been with one of the rescued parties but, being slightly injured, had dropped out when their comrades began to walk northwards. None of the missing men, however, had been seen by the searching aircraft.

It was decided that it would be better to get the survivors to safety before making any decision regarding further air searches for the lost airmen.

On the morning of the 20th the S.D.F., which on the previous evening had caught up with the I.L.R.S., left camp with the six survivors, the injured men riding in a borrowed I.L.R.S. truck. The other two trucks of the I.L.R.S. stayed to continue the search. They contacted a native village, but could get no news of the missing men and consequently made their way back in the evening to the landing ground, which the S.D.F. with the survivors had reached earlier. That night a message was received telling the patrols to remain at the landing ground for further orders, although by then the S.D.F. had water left for only two and a half days.

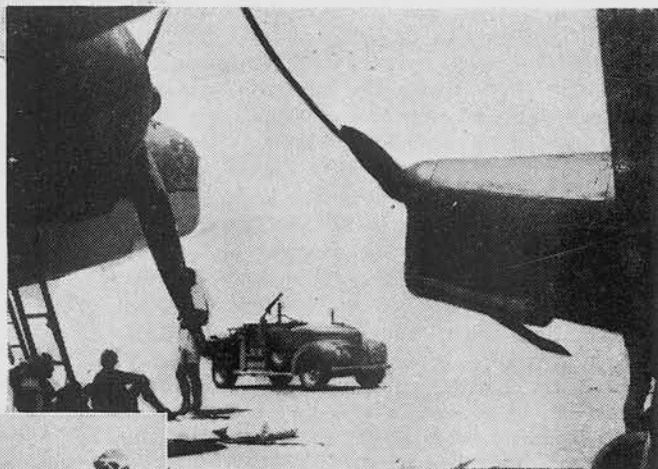
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The A.S.R. Flight Magister, used during the search, being refuelled from a Wellington.

Another view of the Magister being refuelled, with one of the Army cars in the background.



The American survivors being shown their position in the "Coal" on a map.

The rescued airmen safely back at Berka.

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First thing next morning two Air/Sea Rescue Flight Wellingtons flew the six rescued airmen back to base at *Berka*. A conference was then called to decide whether any further action was likely to be fruitful. No. 212 Group Flying Control, No. 93 Sub-Area, the 93rd Bombardment Group and the Air/Sea Rescue Flight were all represented, and it was finally agreed that further searching would be useless and that the missing men were to be considered lost. The landing ground was, therefore, evacuated by all personnel.

The S.D.F. patrol left at 13.45 hours on the 21st and limped into the Company camp at *Benghazi* at 16.00 hours on the 27th, after suffering almost every known type of breakdown. The I.L.R.S. patrol received orders when at *Zella*, 150 miles south of *Nofilia*, on the 22nd to proceed by forced-march to *Qassassin*, in the Suez Canal Zone. It reached *Benghazi*, at 18.00 hours on the 24th, rested and carried out repairs for the next 24 hours, and made *Suez* by 16.00 hours on the 28th, embarking for *India* next day.

As already mentioned, the Air/Sea Rescue Flight's aircraft had flown 120 flying hours,

searching a total area, excluding areas covered two or three times, of 15,500 square miles.

Owing to heavy commitments at that time in connection with the invasion of *Sicily*, the Flight was short of aircraft at base, but the small maintenance organisation left behind completed six engine changes in eight days on the aircraft employed in this rescue.

An American Tribute

The following message was received by No. 212 Group Flying Control from Brigadier General U.G. Ent, the C.O. of the IXth Bomber Command, U.S.A.F.:—"This Command wishes to express its appreciation for the untiring efforts expended by Flying Control personnel in the recent rescue of six American airmen of the 93rd Bombardment Group, who were stranded in the desert. The problem of rescue in this case was unusually difficult and only by the intelligent planning and prompt action of your organization and other units involved was the rescue made possible".

An extract from the Operations Record Book of No. 209 Squadron was given in "From the 540s" in Number 3 of the Review. On the following page is an interesting diagram showing the distances from base of the Squadron's Detachments.

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A DIAGRAM, SHOWING OVER THE MAP OF EUROPE THE DISTANCES FROM BASE OF THE DETACHMENTS RUN BY No 209 SQUADRON SINCE 1st JANUARY, 1943. BASE HAS BEEN TRANSPLANTED TO LONDON, THE DARK LINES REPRESENT DISTANCES BY THE ROUTES NORMALLY FOLLOWED BY THE AIRCRAFT; THE DOTTED LINES REPRESENT DISTANCES AS THE CROW FLIES.

LIST OF ADVANCED BASES

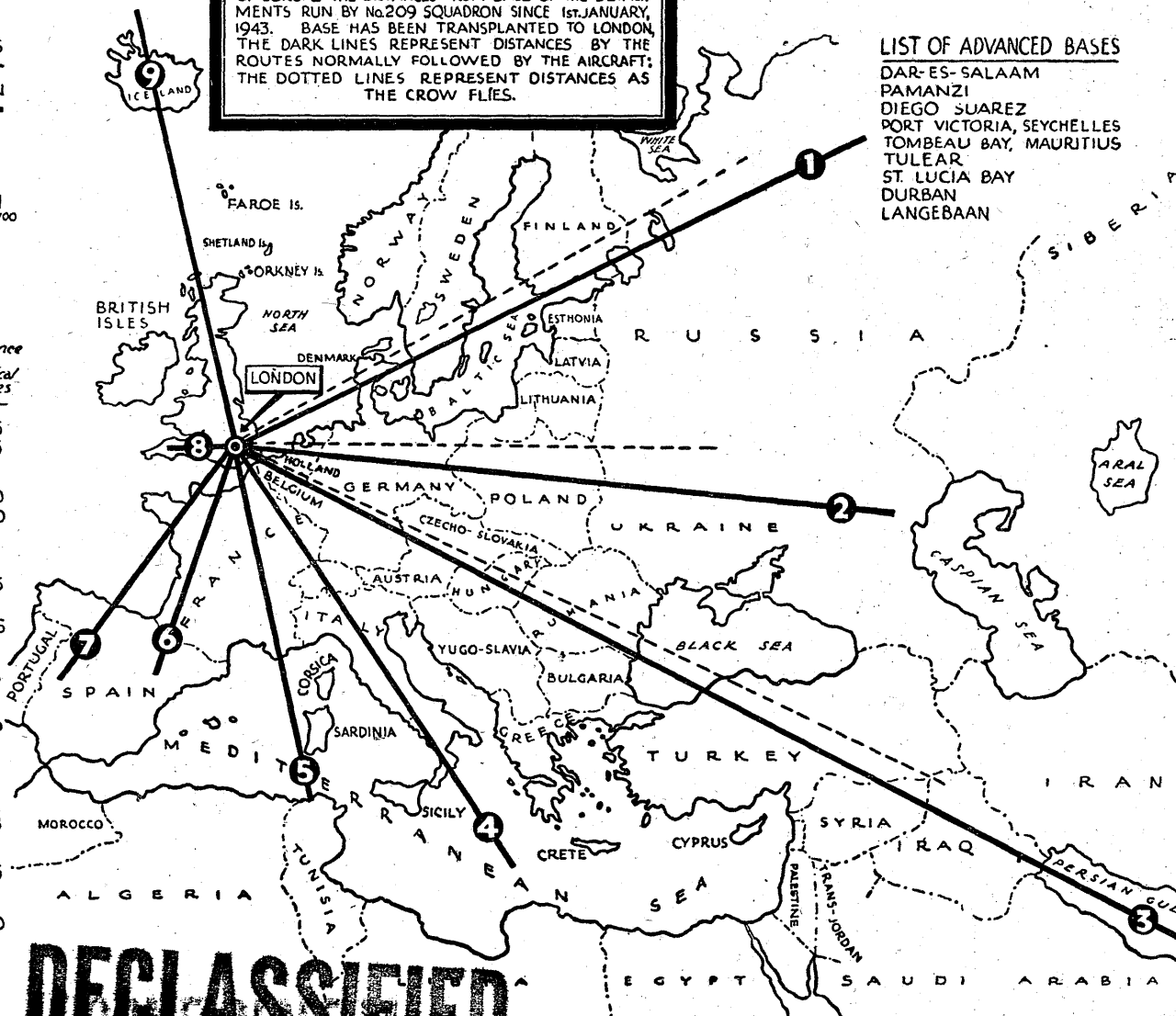
DAR-ES-SALAAM
PAMANZI
DIEGO SUAREZ
PORT VICTORIA, SEYCHELLES
TOMBEAU BAY, MAURITIUS
TULEAR
ST. LUCIA BAY
DURBAN
LANGEBAAN

GREAT CIRCLE DISTANCES
SHOWN THUS: - - - -
ACTUAL DISTANCES FLOWN
SHOWN THUS: ————

APPROXIMATE SCALE
(British Statute Miles)

0 50 100 200 300 400 500 600 700

ROUTE	Distance in Nautical Miles
1 MOMBASA-DURBAN - - - -	1625
///A PAMANZI - - - - -	1946
2 MOMBASA-ST. LUCIA BAY -	1510
///A PAMANZI - - - - -	1800
3 MOMBASA-LANGEBAAN, SALDHANA BAY - - - -	2125
///A PAMANZI, DURBAN, CAPETOWN - - - - -	2925
4 MOMBASA-MAURITIUS -	1425
5 MOMBASA-SEYCHELLES -	950
6 MOMBASA-PAMANZI - -	626
7 MOMBASA-DIEGO SUAREZ -	758
8 MOMBASA-DAR-ES-SALAAM -	165
9 MOMBASA-TULEAR - - -	1180



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ACCOUNTS OF OPERATIONS in *Sicily* contained in the Operations Record Books of this quarter could have filled the R.A.F. Mediterranean Review alone, but following the previous policy the selection of extracts has been kept as diverse as possible, covering past as well as current events. Further sidelights on Sicilian adventures will be included in future numbers.

No. 1. A Canadian Squadron in Sicily (From No. 417 Squadron, R.C.A.F.)

Malta. 15th July. Ordered at 1130 hours to embark on barges in *Valetta* harbour at 1700 hours. In view of previous instructions, and inspections under way, this was very difficult, but the Squadron began loading on to the barge at 1703 hours. Rear party of 20 airmen and Engineer Officer left to finish inspections. Landing barge very fine double decker, accommodating all our 20 vehicles and 165 men quite easily. Left *Valetta* harbour and anchored off *Valetta* until

2300 hours. Convoy of ten barges and two corvettes sailed under full moon, calm sea.

Sicily. 16th July. Were off Sicilian coast at 0400 hours; heavy air raid on *Pachino*, with impressive barrage. Lay off until raid was over, then drove right up on to rocky beach at 0600 hours. F/O E. and F/Lt. S. first ashore. Transport came through water and up on beach without a hitch. Proceeded immediately to *Pachino* aerodrome three miles away, arriving at 0700 hours. Wing decided to move ahead to a field the Engineers had hacked out of an almond grove, so we moved on as advance squadron to *Cassibile*. Secured a fine dispersal in a big almond grove, with camp lines in a vineyard just behind. Had camp set up and flights ready to receive aircraft at 1800 hours. Aircraft landed at *Pachino* on last patrol and pilots stayed there for night. Heavy raid from 0005 to 0130 hours on ships at *George Beach*, *Syracuse* and *Augusta*. No bombs fell on aerodrome, but great

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corded deliveries of aviation fuel exceeding one million gallons. The total mileage for all unit M.T. vehicles was 147,285. All vehicles were serviceable and there was a clear bill with regard to accidents.

31st July. During the month a great deal of consideration was given to the question of food. The stoves installed in the cookhouse lorry caused considerable trouble, and the lack of fresh meat was a great handicap to the cooks. The "eternal bully" quotation was much in evidence, but the men accepted the position in a very cheerful manner. All Sawyer stoves were converted to oilfed and field kitchens were built. These proved to be of great assistance and lessened the risk of fire. Morale was good, and was helped by the events in *Sicily* and *Russia*. The men are very proud of the work they are doing, and their meetings with the Americans in the course of their duties has proved intensely valuable in creating a better understanding between the U.S.A.F. and the R.A.F. here. The Officers have encouraged U.S.A.F. Officers to visit this unit and whilst this cannot be developed to any great degree, it is felt that what has already been achieved by individual invitation has had an effect which will spread.

Liaison between our unit and the U.S.A.F. units is given a high degree of importance.

During the month no effort was spared to improve accommodation and recreational facilities in the camp. An exceptionally good and fairly well-stocked canteen now operates, and a piano has been hired. A violin has also been purchased through Welfare, and both instruments are being used to good advantage.

Sickness was at a very low percentage and health was good.

No. 4. Taxi, Sir ? (From No. 284 Squadron)

Cassibile. 4.8.43. Weather good. Aerodrome O.K. At 1020 hours Sgt. L., W/O P., and F/Sgt. B. were sent off to meet escort and proceed three miles east of *Catania*. Here they picked up F/O K. (R.C.A.F.) of No. 72 Squadron, alive but badly wounded in the leg. Could not take off again in area so taxied to better conditions near *Augusta*, and took off.

At 1240 hours, ten minutes after landing, Sgt. L. took off again in another Walrus with Sgt. B. and F/Sgt. P., to position 400 yards east of *Catania*. They picked up Sgt. W. (R.A.F.) in position without opposition, and were on homeward journey when re-vectored to position five miles further north, one mile off-shore, and here found and picked up P/O B., alive. With the extra weight they were unable to take off, so after two attempts proceeded to taxi. However, it was found that a hole had been made in the port float which proceeded to fill so three men were sent on to the starboard wing. As aircraft continued to take water, Sgt. L. decided to beach, which was done successfully six miles south of *Catania*.

F/Lt. H. flew to *Malta* to collect cigarettes and soap for the boys. State of aircraft, two serviceable, two u/s.

No. 5. A Change of Luck. (From No. 152 (Hyderabad) Squadron)

18.7.43. Another sweep of the same area as yesterday by twelve aircraft proved uneventful. In the afternoon the ground party received word to move again at one hour's notice and at 1700 hours they left *Syracuse* to move forward, arriving at *Lentini* at approximately 2100 hours where the night was spent under the transport.

The ground party spent the day in settling in and preparing a camp site. Meanwhile, the pilots in *Malta* put up an excellent show. Four of our aircraft on convoy patrol five miles north-west *Augusta* ran into a number of *Reggiane* 2001 bombers attempting to attack the convoy. We went in full of joy, to send no fewer than six of them into the sea. F/O J. got three of them and F/O K. and Sgt. S. each got one and shared half another. This was the best break the Squadron has had since coming overseas. Perhaps our luck, which has been pretty poor so far, may be changed.

25.7.43. The best day in the history of the Squadron! At least thirteen enemy aircraft destroyed, one probable, and one damaged; twelve of them in one scrap when, led by W/Cdr. G., we ran into a crowd of JU.52s, escorted by ME.109s, attempting to land on the shore in the *Gulf of Milazzo*. The other aircraft destroyed was a ME.109 claimed by Sgt. S. on patrol in the same area during the evening.

The Squadron was flying on the "deck" when the JU.52s were sighted and soon got among them. Several went up in a mass of flame, probably petrol transports. W/Cdr. G. got two of the JU.52s, F/O K. two, Sgt. B. two, F/Lt. B. one and a half, F/O J. a half, Sgt. P. one and F/O B. and P/O M. shared one. After dealing with the transports we got mixed up with the ME.109s of which F/O J. destroyed two and F/O K. chased one into *Italy* before his ammunition ran out and he had to leave it smoking badly very low in a narrow gully. He claimed it as a probable. Incidentally it got a shot into his wing before he first saw it. One of the JU.52s which F/Lt. B. destroyed blew up right in front of him so that his cockpit was filled with smoke, and when he got back he found a length of parachute cord in his radiator.

The whole affair was a tremendous lift up to the Squadron, particularly in view of the six Italian aircraft destroyed on the 19th. The only black spot was that F/O M. failed to return.

No. 6. For Services Rendered. (From No. 216 Squadron)

April, 1943. *El Djem* turned out to have a grass landing ground and this is the first time since 1919, when the Squadron first came to *Egypt*, that our aircraft have operated from a grass aerodrome.

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Towards the end of the month crews began to be detailed back to base and Dakotas made their appearance, firstly for training purposes and later on replaced the Bombays.

In recognition of our services in evacuating wounded under difficult conditions, we received a letter of appreciation from Colonel P. F., 2 N.Z. Division in which he said: "Would you please convey to Group Captain O'M., to No. 1 R.A.A.F. Air Ambulance Unit, and to the other air units involved the gratitude of the New Zealand Division for their help and co-operation during the recent fighting.

The total of 420 cases evacuated by air from a position in close proximity to the enemy, and virtually behind his lines, would appear to be the largest undertaking of its kind so far in this theatre of war. By cutting out a journey of 160 miles over rough desert tracks it must have saved many lives and spared our wounded a great deal of suffering and so contributed to their early recovery.

The work of the pilots in landing all types of planes on an improvised airfield under extremely bad weather conditions was most praiseworthy.

May I also express my gratitude to you for the immediate response to all requests for assistance with supplies of blood and other stores, which contributed greatly to the solving of our difficulties."

No. 7. Uncomfortable Moments.
(From No. 249 Squadron)

Pachino. 4.8.43. A captured ME.109 piloted by a 72 Squadron pilot was airborne only for a short time before the gunners in and around the A/D, not having been warned previously and unable no doubt to distinguish British marking, opened fire. An exciting few minutes followed, ground personnel running for cover, the 109 taking evasive action, a Spitfire taking off, circling the

drome wagging wings, signalling ack-ack to cease fire. Finally the 109 came in making an excellent one wheel landing; luckily the pilot escaped unscathed.

Pachino. 12.8.43. News was received from Ops. that F/Lt. G. had baled out near *Lentini* and was safe with 244 Wing. He returned to the Squadron in a Whitley bomber on the 20th. After the first attack, his section had broken and he had become separated from it but not before he had seen a Spitfire going down in flames at about 12,000 feet and two other Spitfires in his section still breaking. On his way to *Sicily*, a FW.190 had attacked him from below and astern, severely damaging his aircraft. Most of the controls were shot away, the tail unit damaged, the port and starboard mainplanes holed, parts of the elevator were missing, the port flap hanging in pieces, the radio was dead, and only the engine appeared untouched. The machine was almost beyond control. At first he decided to try a forced-landing to save the engine. When he realised the futility of this he undid his straps and prepared to bale out. The hood refused to jettison, and he found it impossible to re-fasten his straps. After climbing from 3,000 ft. to 5,000 ft. and making for *Lentini* he eventually forced off the hood, after several attempts, whilst holding the stick between his knees. The hood struck the tail unit, rolling the aircraft on its back and his feet caught under the instrument panel. He hung suspended for a time until managing to kick himself free; he felt for the rip cord — more delay; the parachute had slipped round his body. He dropped about 1,500 feet before he could pull the cord when the parachute opened immediately. He now found it necessary to control the 'chute to avoid high tension cables and eventually landed in a cactus grove, *luckily in an open space!* During the descent he saw his own aircraft crash in a vineyard and burst into flames.

CORRECTIONS

1. *Attention has been called to the fact that in the historical account of R.A.F. operations in No. 3 of the R.A.F. Middle East Review, the activity of the Western Desert Air Force was described in a manner implying that it was still acting independently, whereas it was, w.e.f. 23rd February, 1943, operationally controlled by the North-west African Tactical Air Force and from then on operated, of course, as an integral part of that Force.*

2. *A printer's error occurred in the same issue. On page 50, line 16, the bomb load, which was made up primarily of 20 lb. fragmentation bombs, should read 99 tons, not 739 tons.*

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ACKNOWLEDGMENT

is due to the
Officers Commanding

THE R.A.F. REGIMENT

No. 216 GROUP

AIR STAFF INTELLIGENCE H.Q., R.A.F., M.E.

P.M.O. BRANCH H.Q., R.A.F., M.E.

**AIRCRAFT SAFETY ORGANISATION
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