Desert Storm



Above
A tropicalised Typhoon – thought to be EJ906 – 'beats up' a 451 Squadron Hurricane IIc at El Dabaa during the type's "operational simulations" sometime in September 1943.
All images KEY Collection unless stated otherwise

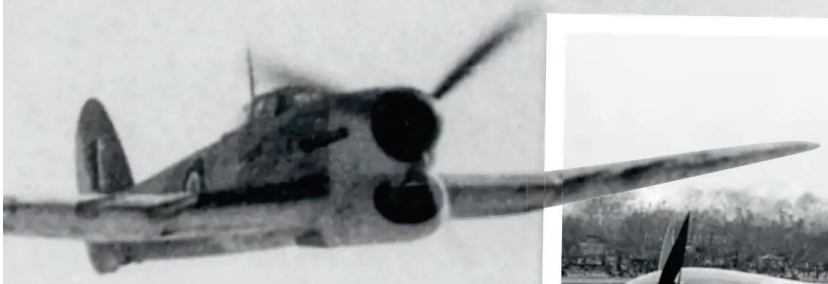
Months prior to the Hawker Typhoon's entry into service with the Royal Air Force in September 1941, the suggestion to 'tropicalise' the type was soon voiced. However, little happened until September the following year, when the project quite suddenly came to fruition following instructions from British Prime Minister Winston Churchill that a small number of Typhoons should be sent to the Mediterranean area for compatibility trials. At that time, preparations and necessary materiel for the Allies' upcoming push in the Western Desert were of the highest priority.

Receiving the proposal, Hawker selected three practically new 'car door' Typhoon IBs – R8889, R8891, and R8925, the 447th, 449th and 462nd examples built by Gloster at its Hucclecote factory in Gloucestershire – and readied them for trials in the Middle East at its Langley facility near Slough.

The aircraft had originally been part of a much-changed Air Ministry order for 250 Sabre II-powered Mark IAs and IBs under Contract 12148/39. Notably, while the rest of aircraft were handed over to the RAF between July 1942 and November 1943, many of them were delivered directly into storage with numerous Maintenance Units (MU) across the United Kingdom – including 5 MU at RAF Kemble in Gloucestershire, No. 18 at RAF Dumfries in Scotland and No. 51 at RAF Lichfield in Staffordshire – until they were reduced to spares or reassigned as ground instructional airframes, before finally being struck off charge (SOC).

With R8925 already at Langley engaged in flight testing, it was chosen to be the prototype – work to modify the aircraft beginning in earnest on October 21. As part of this, the aircraft was fitted with a newer Napier Sabre II and a dry air-cleaning filter assembly. The latter, designed by Vokes, was said to have been a relatively simple piece of equipment. Dubbed the "interim filter" and fitted beneath the fuselage at the rear of the radiator and extending back almost as far as the wing trailing edge, it was arranged in such a way that air could be drawn into the Sabre either via the standard inlet or through the filter. The former was to be used while the aircraft was in the air and the latter for ground running, taxiing, taking-off and landing. Selection was by means of a lever installed







Typhoon IB DN323 still wearing the Standard Temperate Day Fighter finish of Dark Green / Ocean Grey camouflage over Medium Sea Grey, at Langley shortly after 'tropicalisation' by Hawker, circa April 1943. Note the fairing covering the air cleaner just visible below the wing.

Proposals to 'tropicalise' the Hawker Typhoon for possible use in the Middle East were raised as early as mid-1941. But was the type suitable for tropical operations? **Jamie Ewan** explains

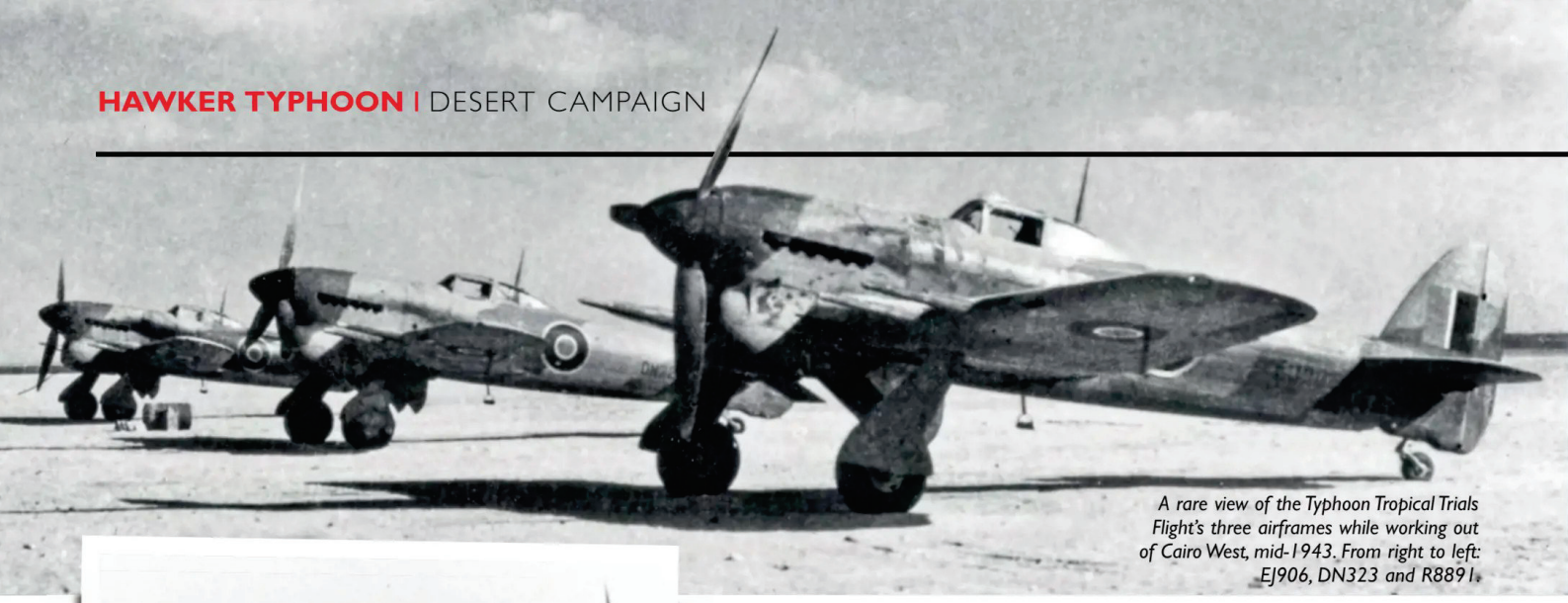
on the starboard side of the cockpit. Records show the work took almost a month to complete, and as such, it was around mid-November before R8925 flew with the modifications. However, on November 18 during only its second flight with the 'mods', R8925 suffered engine trouble – resulting in a forced landing. While Hawker test pilot Merrick Hymans escaped with only a slight bruise to his forehead, the aircraft never flew again. Records show it was reassigned as an instructional airframe with the serial 3486M on January 3, 1943.

Delay to the project was minimal, with R8889 taking over the initial flying trials less than a week after R8295's crash. Fitted with a revised air cleaner control, the aircraft was transferred to the Aircraft & Armament Experimental Establishment (A&AEE) at Boscombe Down in Wiltshire, on December 1 for official testing. During one test flight, the aircraft was dived to 525mph... reportedly without trouble!

After returning to Langley during early January 1943, it later came to grief while being ferried to No. 47 MU at RAF Sealand in northeast Wales by First Officer Richard 'Dick' Baxter-Jones of No. 1 Ferry Pilot Pool, then based out of White Waltham in Berkshire. Baxter-Jones, boasting a flamboyant moustache, overshot on landing, resulting in the aircraft flipping over and ending up in a ditch. With the damage initially classified as 'Cat.B' – beyond repair on site but repairable at a Maintenance Unit or a contractor's works – R8889 was returned to Langley. However, while there the damage was reassessed as 'Cat.E1' and the aircraft deemed a write-off, but suitable for spares recovery. Reduced to components, it was struck off charge on June 17, 1943. By then, the third of the original three Typhoons,

Below
Prior to being dispatched overseas, the chosen Typhoons gained their desert colours comprising a Dark Earth and Middle Stone camouflage over Azure Blue – as seen in this depiction of R8891, which spent its early career with Hawker undertaking performance and handling trials for the Directorate of Technical Development. Andy Hay–Flyingart





A rare view of the Typhoon Tropical Trials Flight's three airframes while working out of Cairo West, mid-1943. From right to left: EJ906, DN323 and R8891.



Above
Although not of the best quality, this view of Plt Off George Myall – who led the Typhoon Tropical Trials Flight across the Western Desert – posing with DN323 at El Dabaa shows the sheer size of the type.

Below
A contemporary mid-1943 study of EJ906 (by far the most photographed of the TTTF's three machines) at the RAF station at Aboukir for attention by the resident 103 MU.



R8891, had been introduced to the programme, while another pair of IBs – DN323 and EJ906 – were accepted as attrition replacements; these aircraft were just two of the 700 examples rolled out by Gloster between October 1942 and July 1943 under Contract ACFT/943. Meanwhile, the testing of the Typhoon's air cleaning filter in "temperate climates" had been satisfactorily completed and emphasis shifted to the Western Desert. It had been suggested the Air Ministry planned to send at least another nine examples out east to form a squadron sometime during the second half of 1943. But by then, the urgency of the tropical trials had shifted somewhat following the successes of the Allies at El Alamein and across French North Africa. This downgrading is clearly indicated by the fact that it wasn't until April 1943 that shipping space was allocated to move the Typhoons overseas.

Just prior to this, the aircraft were flown into Sealand from RAF Aston Down in Gloucestershire where they had been brought up to near-standard configuration by 20 MU. It is said that while at Aston Down all three gained their desert paint scheme comprising a Dark Earth and Middle Stone camouflage over Azure Blue. Once at Sealand, the trio were broken down to major components, crated, and dispatched to the Moroccan city of Casablanca by ship on April 12.

The team assembles

To support the aircraft overseas a small team comprising an officer and five tradesmen was formed. Led by Plt Off George Myall, who had flown the Typhoon operationally with 56 Squadron, the detachment (which would fall under the umbrella of 219 Group, Air Defence Eastern Mediterranean Air Command) was bestowed the rather impressive title of Air Special Technical Party of the Typhoon Tropical Trials Flight – or TTTF for short.

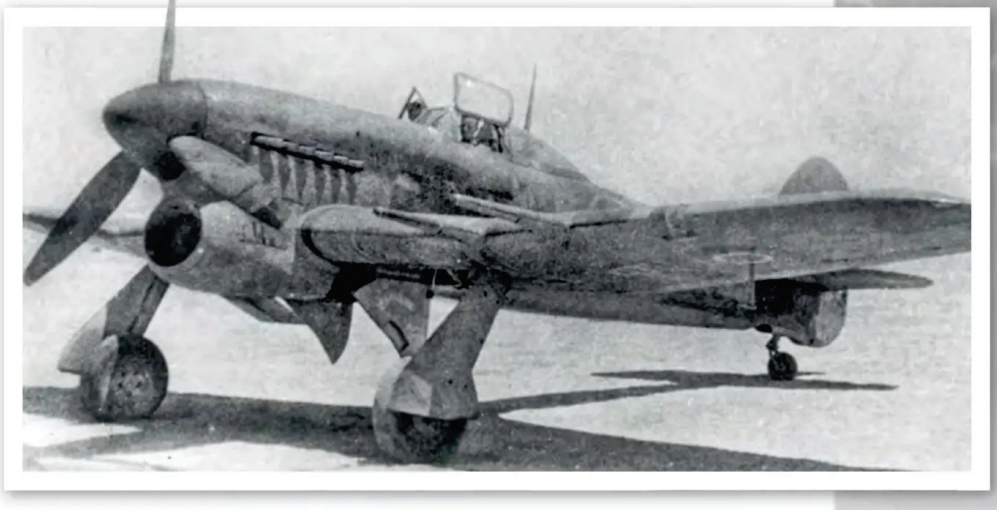
Surprisingly, the team didn't travel with the aircraft. Instead, minus Myall, they departed the major Scottish port of Clyde at the end of March aboard the vessel SS *Nieu Holland* bound for the Algerian anchorage of Oran – some 600 miles to the west of Casablanca; the last stage of their journey was by train.

They were followed by a second party – comprising John Gale from Hawker's design office, Victor Richardson from the Flight Department of Napier's Acton Vale facility and Philip Lucas, who was then the chief test pilot at Langley – that flew out for the trials. Flying commercially with the British Overseas Airways Corporation to Gibraltar via Lisbon in Portugal, they picked up an RAF transport to the Algerian capital, Algiers. While Gale and Richardson proceeded from there to Casablanca, Lucas left the party for a time to visit Hawker Hurricane units in the area. George Myall also arrived about this time, but still missing were the specialised tools needed to reassemble the Typhoons, which had been despatched separately.

With the Typhoons unloaded in Casablanca on April 25, the crates were transferred to the nearby 145 MU for reassembly; uncrating began some three days later. The aircraft had been despatched with their engines installed, while their wings, tailplanes, rudders, propellers and cowlings had been removed. Even so, without the specialised tools, and with a senior NCO inexperienced on the type, the reassembly process dragged on – albeit under the watchful eyes of Gale and Richardson. On hearing there was a "local NCO" with

experience on the Typhoon, he was quickly co-opted.

It turned out to be May 7 before Lucas was able to test fly the first of the aircraft – DN323, which in retrospect was remembered as being by far the best of the three sent out for the trials. Of that first flight, Gale recalled: "Philip Lucas flew the first Typhoon to be ready and subsequently let the MU test pilot, whose name I can't remember, have a go." It would take another 11 days to get both EJ906 and R8891 reassembled and satisfactorily air-tested. Ironically, the much-needed missing tools turned up on the 18th – the day after the job was finished!



Above
George Myall in the cockpit of EJ906 at El Dabaa in July 1943

"During one test flight, the aircraft was dived to 525mph… reportedly without trouble!"

Egypt or bust

The following day, the TTTF was told to prepare the Typhoons for a move some 2,200 miles east to RAF Landing Ground 224 (LG. 224) in Egypt's Canal Zone. The fighting in North Africa had only just ceased with the surrender of the last of the Axis forces in Tunisia, and so the way was now open for safe passage to Egypt across the top of North Africa. Located just to the west of the Egyptian capital Cairo, LG. 224 was better known as 'Cairo West'. Lucas had gone ahead to organise things, so Wg Cdr Hugh 'Cocky' Dundas was "coerced" into assisting Myall with the transfer. Dundas, who had commanded 56 Squadron during the very early days of the Typhoon's introduction into RAF service, had arrived in the Middle East earlier in the year to take over a Spitfire Wing, but was still awaiting an appointment. With Myall flying both R8891 and DN323 in relay east from Casablanca to Maison Blanche in Algiers on May 29 and 31, respectively, he and Dundas ferried them the rest of the way – the pair arriving in Cairo on June 3. However, their flight was not without incident. Using a small-scale map taken from a toilet block wall, they had barely reached the Algerian city of Bone – about 270 miles to the east of Algiers – for the first overnight stop when Dundas collapsed. Whether from the effects of a binge the previous night or something more obscure, he was never sure. Seemingly fine the next morning, they carried on. With Dundas heading off on leave when they arrived in Cairo, Myall returned to Casablanca to collect EJ906. There, he found the aircraft was unserviceable following a supercharger clutch failure on take-off – the test pilot from 145 MU managing to get the stricken aeroplane back on the ground without any further damage. Fortunately, three spare engines had not long arrived in country up the coast at the port of Tangiers, and Gale and Richardson, before they left for Cairo, were able to repair EJ906's broken Sabre with parts taken from one of them.

Fully laden with those little extras procured from the American 'PX' in Casablanca, EJ906 eventually caught up with R8891 and DN323 at Cairo West on June 5. Of note, all three Aircraft Movement Cards – their Air Ministry Form 78s – record them as having arrived at Cairo West on July 1. A clerical error, or a corrected omission in the haze of war?

As for Gale and Richardson, they followed the fighters across the top of North Africa by air – the first leg to Algiers by Douglas transport and then on to Cairo aboard a Consolidated Liberator bomber. Their trip was enlivened somewhat during the second leg when they were shot at by US anti-aircraft guns over Tunisia! Thankfully, with the crew quickly firing off the day's colour by flare, they managed to escape unharmed.

Meanwhile, the ground party remained at Casablanca where,



Left
Having flown the Typhoon operationally with 56 Squadron as a Sergeant Pilot in 1942, Plt Off George Myall (second from right, front row) had experience with the type that was key to the success of the Typhoon Tropical Trials Flight's mission in the Western Desert. ALAMY-Piemags-WW2archive



Right
With most of its lower cowlings removed, Typhoon IB R8891 sits broken at El Dabaa. Note the heavy exhaust staining visible on both it and EJ906 behind.

"Without the specialised tools, and with a senior NCO inexperienced on the type, the reassembly processdragged on"

Right
Evident in this view of a TTTF machine being prepared for flight at Aboukir in mid-1943 is the type's thick, cranked wing.



despite strenuous efforts by Myall, their movement orders had failed to materialise. It appeared the TTTF was to be broken up and personnel reassigned elsewhere. In desperation, they managed to scrounge a lift to Maison Blanche on a United States Army Air Force C-47 Skytrain, and from there caught the daily flight heading for Cairo in company with several British Army officers – and a French general. Nor was their trip without some drama. About half an hour out of Maison Blanche, the Skytrain's port engine cut due to fuel starvation. Incredibly, the blockage was cleared mid-air by a grinning, cigar-wielding crewman, before the aircraft landed safely at Cairo West.

With the Typhoons requiring planned servicing and inspections, they were flown north to the long-established RAF station at Aboukir (LG.34) – just to the east of the city of Alexandria on the Egyptian coast – for attention by the resident 103 MU. There it was discovered the Vokes dry-type air filters fitted to the aircraft back in the UK were saturated with fuel leaking from the carburettor butterflies. This was a consequence of engine backfires, which could occur due to closing the throttle too quickly, improper mixture control, or over-priming, causing fuel to flow back down the intake trunk – resulting in a distinct fire hazard. With Hawker quickly advised, new wet-type filters arrived within 48 hours.

Anonymous 'Egyptian Artisan'

By this time, it had been decided that the TTTF would be attached to the Hawker Hurricane IIc-equipped 451 Squadron of the Royal Australian Air Force (RAAF) as a "lodger unit" for the duration of the tropical trials. Then under the command of Sqn Ldr Jim Paine and based at RAF Idku (LG. 229) just to the east of Alexandria, as well as boasting several detachments across the Canal Zone, '451' was then primarily engaged in mind-numbing convoy patrol work, as well as air defence across the Nile Delta. However, it also boasted a trio of specially modified 'Marker' Supermarine Spitfire Vs on loan from 103 MU – these being used to counter high-flying Luftwaffe Junkers Ju 86Ps then regularly flying reconnaissance missions across Alexandria. Despite already operating two different types, it was decided that all flight-line maintenance for the Typhoons was to be performed by 451 Squadron's groundcrews, while they would be ferried back to 103 MU at Aboukir for any modifications or major work.

On June 10, the British party began arriving at Idku. Three days later, Lucas delivered the first Typhoon – although before landing, he put the aircraft (R8891) through its paces with

Below
DN323 at El Dabaa around the time it was officially released to 451 Squadron for general flying. It is believed the unit never used them operationally. Note, the aircraft carries the code letter 'Y'.





one of his matchless flying displays for those on the ground. Just prior to this, 451 Squadron's diary notes that three pilots were transferred to them "for operational flying duties on Typhoon": Sgt Lancelot Pennell on June 1, Flt Sgt Anthony Davis three days later, and Sgt Trevor Hough two days after that.

On June 11, the first of the Australians selected were introduced to the aircraft. This was a pretty casual affair and consisted of little more than a cockpit briefing as there were no pilot's notes! But with the pilots already experienced on the Hurricane, they took to the new type with enthusiasm; likewise, the groundcrews assigned to the trials learnt by working alongside the British team. By the end of the first day, several of 451 Squadron's pilots had carried out their first flights in R8891.

But there was an early setback. On the 15th, FO John 'Kirk' Bann – airborne for only his second flight in the big Hawker machine – suffered a hydraulics failure. With a belly landing looking like a distinct possibility, some instructions over the radio from Lucas resulted in him managing to get the undercarriage down and locked. However, he was forced to land without flaps. Despite this, he managed to get R8891 down safely. Inspections revealed that a burst hydraulic line was the culprit; it was repaired within 24 hours. Seconded to the TTTF for a short period, Bann went on to regularly fly the Typhoon – as well as the Fairchild Argus (HK948) the outfit had acquired for the duration of the trials as a communications aircraft.

Initially, R8891 was the only Typhoon at Idku. However, on June 17, the aircraft was deemed unserviceable. With 30 hours then on the engine, it required a sleeve wear check by the representative from Napier, Richardson – who was still to arrive. Fortunately, DN323, which had been stuck at LG. 224 following a hydraulic leak and a landing gear door solenoid failure, arrived that day, allowing training to continue. Even when R8891 was released back to service, it was rare to see more than one of the Typhoons in the air at any given time.

By then, Lucas had returned to Langley to start flight testing the Tempest II, which flew for the first time on June 26. With training continuing, it was decided the Typhoons would be detached some 180 miles to the northwest to LG. 106 at El Dabaa for their first "operational simulations". Accompanying them would be an RAAF detachment comprising five officers and 25 other ranks – as well as both Gale and Richardson.

Flt Lt Ray Hudson was chosen to lead the detachment, and he flew DN323 across to El Dabaa on July 13 accompanied by Myall in EJ906. At that time, R8891 was again unserviceable – this time with a faulty air cleaner. With complications arising when trying to get it back into the air, it was decided to take an air cleaner from a Martin B-26 Marauder, modify it to drawings prepared by Gale and Richardson, and fit it. The work itself was entrusted to an anonymous "Egyptian artisan" in Aboukir. Not only did he complete the job successfully within a day, but he did so with such care and skill that that particular cleaner remained trouble-free for the entire course of the trials. And while the end product worked perfectly, the Air Ministry ordered an improved version of the Vokes system to be fitted to the aircraft.

Trial by fire

At El Dabaa, it was agreed the aircraft would be used on operations while carrying out the necessary trials under "sand" conditions; they would be called on to carry out interceptions etc, in the ordinary way, but were not to be vectored out of gliding distance from land until such times that they had completed 100hrs engine time (total); after the trials, and subject to the trials being a success, the aircraft would be used as fully

Above
The 67th of the 700 examples rolled out by Gloster from its Brockworth factory in Gloucestershire, in April 1943, as part of the third production batch, DN323 is depicted here around the time it was given up by 451 Squadron in October that year.
Andy Hay–Flyingart

Below
While in use with 451 Squadron, the three Typhoons – when serviceable – were flown extensively. The Operations Record Book lists the names of no fewer than 19 pilots who flew the type, including the four pilots seen here posing with one of the unit's Hurricanes while at Idku in May 1943. From left: Sqn Ldr 'Jim' Paine, Fg Offs John Schofield and 'Len' Trenordan, and Flt Lt 'Ed' Kirkham.
Royal Australian Air Force





Right
Flt Lt Francis Barker was 23 when he was killed flying R8891 during an air test on August 7, 1943. Royal Australian Air Force

operational and could be then vectored outside gliding distance of land. A stipulation from the outset was that each sortie had to include five minutes at full throttle in level flight. This indicated some rather uninspiring flying for the pilots – especially once the novelty of being airborne in a Typhoon wore off.

On completion of the flight programme, the engines were to be stripped down and checked for excessive wear and tear – particularly to the sleeve valves – and a detailed report prepared. In the grand scheme of things, the trials proved to be rather protracted with the unserviceability rate of the aircraft being quite high.

A common problem was the plugs in the Sabre's lower cylinders "oiling up", which caused rough running, low rpm, and massive 'mag drops' – the latter, the magnetos, being a key element in the aircraft's ignition systems. As a result, the aircraft suffered a high engine and engine component failure rate. The Typhoons also suffered several fires resulting from backfires that necessitated ferrying them to Aboukir for repairs.

A constant source of irritation at El Dabaa – other than the flies, near-unbearable heat, and less than hospitable conditions

Below
The tropicalised Typhoons achieved little directly, but there was a useful spin-off from their work – including testing designs of air filters, which provided invaluable data. This proved useful when the RAF's 2nd Tactical Air Force – including MN529/ BR-N of 184 Sqn, seen here taking off from Advanced Landing Ground B-2 Bazenville armed with 3in RP-3 rockets – ran into trouble due to the fine, abrasive dust over Normandy, following the Allies' invasion on June 6, 1944.

"The Typhoons also suffered several fires resulting from backfires that necessitated ferrying them to Aboukir for repairs"

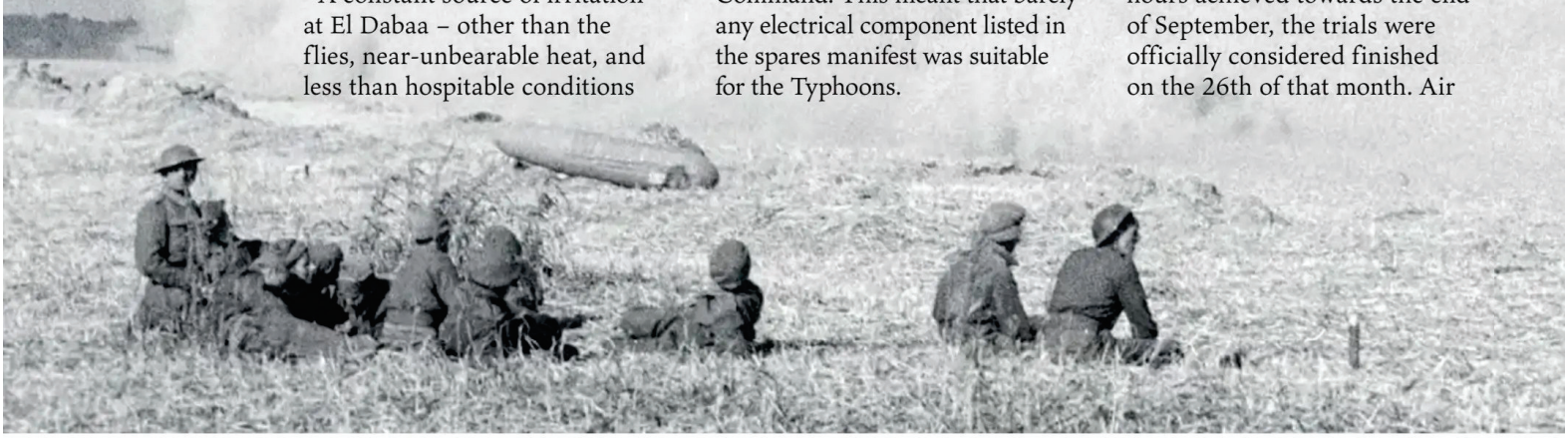
– was the difficulty experienced in locating spare parts for the Typhoons. Apparently, there was no shortage of these items. The problem was they were scattered across at least three MUs!

In view of the possibility of the Typhoon entering service in the theatre, stocks of spares began flooding into the Canal Zone, only to become "lost" in the maze of stores administration. As a result, they were distributed between the three major MUs (the aforementioned '103' and '107' at RAF Kasfareet, near the Great Bitter Lake in Egypt's Ismailia Governorate, and '111', based in the underground tunnels and caves at Tura, near Cairo) and were either entered in three stores' manifests or not at all. For example, when a wheel door fell off one of the Typhoons into a lake and was lost, it was quickly replaced by one found at Kasfareet. But when a Dowty live-line pump – the heart of the aircraft's operational system supplying hydraulic pressure continuously while the engine was running – failed at Idku, no spare could be found in any manifest. As it was, Gale flew to Idku himself to collect the unserviceable pump and deliver it to Aboukir for repair. One problem that had not been anticipated was that the Typhoon possessed almost the only 24-volt electrical system in the whole of Middle East Command. This meant that barely any electrical component listed in the spares manifest was suitable for the Typhoons.

In August, while unserviceable with a broken propeller following a forced landing at Idku, it was decided EJ906 needed an engine change. However, at that time there were no Sabres available in the Middle East. As a result, permission was sought to hold the airframe as "unserviceable" to provide a source of spares for the two remaining airframes; it would be late August before two new engines were dispatched to 103 MU from Napier. With EJ906's propeller removed, it was sent to 111 MU at Tura for repair. With just two spares in theatre, EJ906 was back flying by early September.

Towards the end of that month, the "operational simulations" concluded with armament trials. Reports of stoppages and other armament problems during these were attributed to the lack of experienced armourers on the type. With the issues continuing, a severe rebuke was issued to 451 Squadron's then new commanding officer – Sqn Ldr Reginald 'Reg' Stevens, who had taken over on September 7 – by OC 219 Group, Gp Capt Max Aitken. This resulted in a warrant officer from the Armament Inspection Unit being assigned to the squadron to assist in resolving these issues.

As it was, around this time 451 Squadron's Typhoon activities at El Dabaa began winding down. And with the prescribed hours achieved towards the end of September, the trials were officially considered finished on the 26th of that month. Air



Defence Eastern Mediterranean Air Command concluded they had been successful; published figures show that among them, the three Typhoons flew some 312 hours during the tests – 238 of them from El Dabaa. The trials revealed that the wet-type air cleaners had worked well.

With the trials complete, Richardson and Gale returned to the UK by air, while the Typhoons were officially released to '451' (which by then had moved across to El Dabaa) for general flying. However, while they were flown extensively – the squadron's Operational Record Book lists the names of no fewer than 19 pilots who flew the type at one time or another – it is thought the unit never used them operationally. In fact, other than those actively involved in the trials at El Dabaa, most of the pilots had only a casual acquaintance with the big fighter. For example, Flt Lt Ed Kirkham, commander of 'B Flight', logged just six hours on the type. The majority had even less. This indicates there was no serious intention of equipping the squadron with the Hawker type – as had been suggested. Undoubtedly, its pilots were never told that they were going to get Typhoons, but according to the squadron diary, "all expressed their admiration of the capabilities of the aircraft". Likes included the 400mph level speed at 18,500ft, a *limited* dive speed of 525mph, the superb visibility out of the canopy and the type's light and sensitive controls.

Although the feasibility of the 'Tropical Typhoon' was proven, the build-up of the recently formed Second Tactical Air Force (2TAF) back home in the UK for planned invasion of Europe was then the main priority. As a result, it was deemed that no Typhoons could be spared for the Desert Air Force. In fact, just one other example of the type would reach the Middle East – MN290, boasting a modified cooling system, being dispatched to Khartoum in Sudan during October 1944 for trials, with the aim of testing it in hot environments demanding superior cooling capacity. Little is known about the trials; it has been suggested they were ultimately "abandoned due to multiple cooler failures"; records show MN290 was "presumably" struck off charge (SOC) on January 1, 1947.

As for EJ906, R8891, and DN323, on October 20, 1943, they were withdrawn from use by '451' as it prepared to convert to Spitfire IXs, its first example arriving in early December. Three days later, the three Typhoons were ferried across to 161 MU at RAF Fayid in the Canal Zone for return to the RAF. Initially kept airworthy, EJ906 was ultimately SOC on February 1, 1944, due to a shortage of spares. As for R8891 and DN323, they were kept flying well into the second half of the year. However, tragedy struck on August 7 when R8891 crashed during an air test, killing the pilot, Australian Flt Lt Francis Barker. Said to have little to no experience on the type, eyewitnesses reported that he was beating up a NAAFI complex just south of Cairo, where it was rumoured his girlfriend worked, when he flew into the ground. Barker was 23 years old. By then, R8891 was listed as being on strength with 107 MU. It was officially SOC the following day. Just three weeks later, DN323 was grounded, and while it was recorded as being stored with 161 MU, its fate is unknown, but it is more than likely it was struck off charge and scrapped at Fayid.

While the desert Typhoons achieved little following the trials, there was a useful spin-off from their work – testing designs of air filters, which provided invaluable data when 2TAF's Typhoon force encountered abrasive dust kicked up over Normandy during the June 1944 invasion.



Left
A rare view of R8891 awaiting its fate at 161 MU at RAF Fayid, in late 1943 – the aircraft having been ferried there on October 23 following completion of its trials with 451 Squadron.

