

Meteor Show

Flying the UK's first jet fighter

BY **FLIGHT COMMANDER ROBERT "BOB" LARGE, RAF 504 SQUADRON AND RAF 245 SQUADRON**
AS TOLD TO AND WRITTEN BY **JAMES P. BUSH**



Glorious Gloster—Stan Hodgkins, one of the world's most experienced Meteor pilots flies VZ476, an F.8 model. This aircraft was operated by the RAF well into the late 1980s, affectionately nicknamed "Winston," after the "Romeo y Julieta" puffing war leader. (Photo by John Dibbs/planepicture.com)



I began my combat flying in Spitfires for the RAF in early 1941, and did so through 1943. The Spitfires were a delight to fly and I loved to do aerobatics with them, which I enjoyed immensely. But it was during this time frame, in the early summer of 1942, that I had been obliged to leave my bullet-riddled Spitfire Mk VI in the English Channel, about 12 miles out from the White Cliffs of Dover. I had been up at high altitudes over France on a fighter sweep but the German Bf 109Gs were up even higher and dove onto me, spraying my Spit with cannon and machine gun rounds. Needless to say, I was out of luck and ended up taking a summer's swim in the Channel. In late 1943, I was assigned to a Lysander Squadron: 161 Squadron Special Duties. Although flying the Lysander was a "break" and quite different, I was very much interested in this cloak and dagger business, which involved flying at night into occupied France in a single engine, unarmed, in a relatively slow aircraft dropping off and picking up spies.

I did this for a period of time and rather enjoyed the work, but I must confess that I did miss the "fast aero planes" like the Spitfire. In the early spring of 1945, I got another chance to fly something fast again and was somewhat surprised to learn that my next airplane had no propeller attached to it. I joined 504 Squadron at Colerne, where I came face to face with the Allies' first operational jet fighter of the war—the Gloster Meteor I. My first impression of the Meteor was that it looked absolutely wonderful—and completely different from anything else I had ever seen. It was beautiful and clean, sleek and fast looking even on the ground as it squatted down low supported by a tricycle undercarriage. I relished the opportunity to fly fast again and likened it to going from a "Tortoise to a Hare."

A brief history of the Meteor at war

My old Spitfire Squadron (616 Squadron), was the first squadron to be equipped with Meteors during the war in 1944, and those chaps used them quite successfully against the V-1 flying bombs as they made their murderous attacks on England. Although the V-1s were a menace to our homeland, my old squadron mates really wanted to tangle with the Luftwaffe's Me 262 Swallow jet. Although both jets were similar looking—a jet engine and nacelle attached to each wing, tricycle landing gear along with guns in the nose—most of us felt that the Me 262 was superior to the Meteor, especially in the air speed arena.

The original Meteor Is we flew were powered by a pair of Sir Frank Whittle's influenced turbojet engines. The ones installed in the Meteor I were called the B.23 turbojet built by Rolls-Royce and they produced 1,700 pounds of thrust each. By the time I got into the jet game in early 1945, the much improved Meteor III was on line. The improvements included longer jet nacelles, a sliding bubble-type hood instead of a hinged one, a sturdier airframe, and larger internal fuel capabilities, along with some engine refinements. Even with all of these enhancements, the Meteor III, by all accounts, was still a short-range, single-seat interceptor fighter. The early turbojet engines were fuel hogs and gulped fuel at an alarming rate. They carried 330 gallons internally in one main fuselage tank, and I will never forget the sight of literally watching my fuel gauge moving from

full to empty as I pushed the throttle forward. Without drop tanks we could only get about 40 minutes of flying time with enough reserve to get us back to base safely.

The Meteor airframe was obviously constructed from all metal, with a very unique tail plane mounted on the fin. This design ensured that all moving parts—the rudder and elevator—would be well clear of the jet blast from the twin turbojets. A wingspan of 43 feet with a turbojet mounted in each mid wing also incorporated the use of split flaps. The wing supported a fuselage that was over 41 feet long and both rested on a hydraulically operated tricycle undercarriage. A single pilot seat offered outstanding visibility, especially sitting under the large bubble hood. For armament, we carried four Mk. II 20mm Hispano guns—two on each side of the cabin, imbedded in the nose, right in front of the pilot—with 150 rounds allotted for each gun. Our full loaded weight was over 12,000 pounds and that number increased to over 14,000 pounds when a 180 gallon ventral tank was later added.

A few of 616 Squadron Meteors were stationed on the Continent near Brussels and these were used sparingly in a ground attack role. Sadly, none of the chaps ever got to tangle with the 262s as the Luftwaffe was rapidly running out of fuel near the war's end. That must have been a godsend with RAF Fighter Command, because they certainly did not want the Germans to get their hands on one of our Meteors either. After familiarizing myself with the proper instruments and cockpit layout, along with the emergency procedures, I was ready for my first flight in a jet.

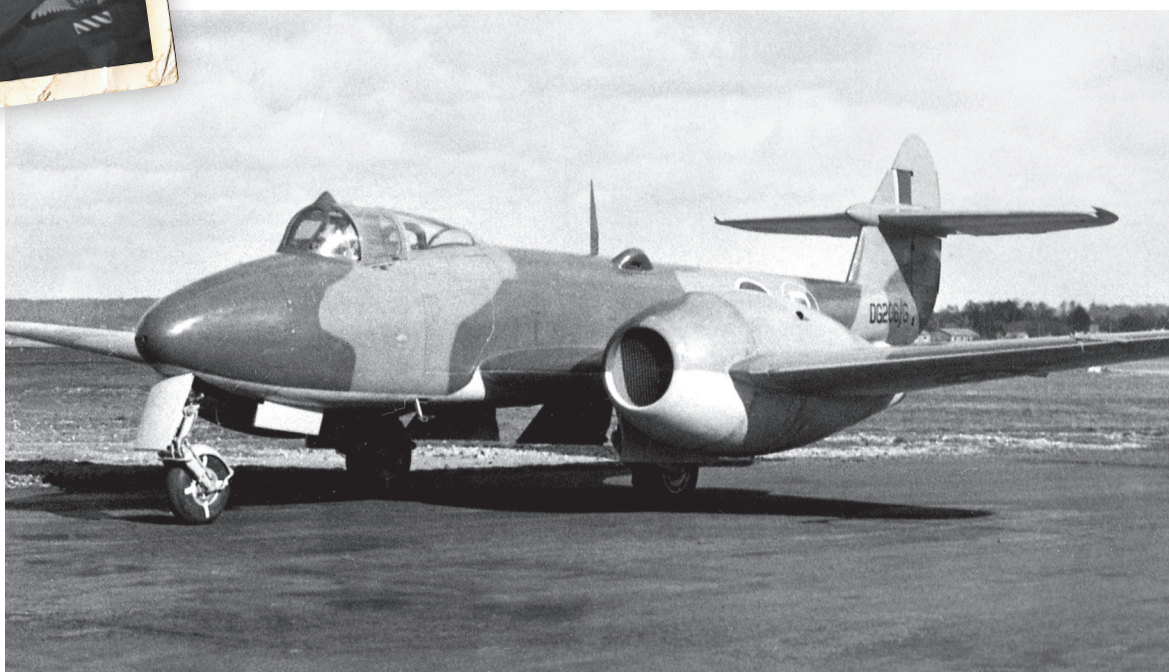
Jet jockey

On April 5, 1945, I finally got my chance to see



Above: Bob Large is all smiles, especially after flying the Meteor! (Photo courtesy of author)

Right: DG206/G was the fifth of eight prototype Meteors. It was the first one to fly, March of 1943. (Photo courtesy of Joe Gertler)





what a propellerless aircraft could do. Because we had no two-seater Meteor trainers in which to acquire dual in, it was more or less jumping in and going. The engine startup was simple and smooth. I was most amazed at the fact that there was no “clanging and banging” from under the hood like I had been accustomed to in my propeller days. As I taxied out for the first time, it felt as though I was driving an automobile because the tricycle undercarriage made the forward visibility quite remarkable. With the elevator and rudder trimming tabs set at neutral and the engine run up complete, I was all set to go.

As I advanced the throttle lever forward, I immediately noticed that there was no “swing” or torque like I would have encountered in a Spitfire. It stayed true to its heading as it trundled down the runway. Conversely, I did not get that “kick in the back” that I thought I would as we accelerated slowly down the runway. As you might imagine, the early Meteors were quite sluggish in those days, as it took some time to get up to flying speed. Relatively speaking, some of that was due in part to the shape of the wing that had been designed to combat compressibility at altitude; something I would encounter soon enough!

As flying speed was reached and the undercarriage was tucked away, it was very smooth and relatively quiet. There were no noises from rattling winds or shaking hoods because I was sealed up hermetically inside the very comfortable pressure cabin. The climbout was at a reasonable rate,

not outstanding by today’s standards, but acceptable once you established a high rate of speed and a suitable angle of climb. The one noticeable item while flying the Meteor was that the ailerons seemed a bit heavy at all speeds. All in all, I was quite pleased with the flying qualities of the Meteor and was delighted to, once again, fly something fast.

One particular item that was stressed early on in training was the fact that bailing out of a Meteor was more or less a death sentence. With that tall tail plane behind you, it was almost a certainty that you would hit it on the way out—even if you tried to slow it down before jumping. Slowing it down made the attitude of the Meteor become tail low and unfortunately, you would end

Lineup of 74 Squadron's Meteor F.3s. “Tiger Squadron” was the RAF’s Third Meteor squadron. (Photo courtesy of Joe Gertler)

AS I TAXIED OUT FOR THE FIRST TIME IT FELT AS THOUGH I WAS DRIVING AN AUTOMOBILE—WITH THE TRICYCLE UNDERCARRIAGE THE FORWARD VISIBILITY WAS QUITE REMARKABLE.

up hitting it anyway. But for all those naysayers, I did know a chap who was able to jump from his stricken Meteor and live to tell about it.

The chap was a wing commander and he was leading his whole squadron down on the deck, making a low pass, and beating up the airfield. As he pulled up very quickly, he heard a “loud

bang” as the Meteor’s nose shot up even higher above the horizon. He lost all control of his stick as the energy from the once rapidly moving Meteor began to recede quickly. As the Meteor leveled off for a second or two, and with only one solution left, he knew his only alternative was to get out before gravity took over. Quickly popping

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his hood, he knew he had to risk hitting the tail; unfortunately, he had no other viable options. As he went whizzing backwards down the fuselage, expecting to hit the tail at any millisecond, he realized what that “bang” was that he had heard earlier—his entire tail had snapped completely off! The wing commander was one of the lucky ones; regrettably, there were others that were not as fortunate. Thankfully, the odds became better for us once ejection seats were installed on newer Meteors.

With my Meteor checkout complete, I experimented on my own and found that the Meteor was a delightful aerobatic machine, one I had hoped to use in combat. Unfortunately, the war

came to an end before our squadron could test our newfound tactics out on the Luftwaffe. But it certainly didn’t stop us from mixing it up with the Yanks!

Tally-ho! Flying Fortresses below!

Although the war in Europe was over, we were thankful for some brilliant chaps within both the RAF and United States Army Air Force (USAAF) who decided that the best thing for all us Allied pilots to do was to continue to fly and develop combat tactics with our jets. There was just too much at stake to let both pilots and airplanes sit for too long, lest both become rusty in no time. It had been decided that aerial combat between fighters and bombers would continue, and instead of shooting with machine guns and cannons, we would shoot at one another with cameras. By this stage in my flying career I had obtained the rank of Flight Commander and rather enjoyed leading five other Meteors around the sky’s of England and parts of Europe.

These big practice flights, or “mock raids” as we called them, consisted of large formations with hundreds of B-17 Flying Fortresses being shepherded by their P-51 Mustang fighter escorts launching from the continent and making their way to targets in England such as London and other industrial cities, just like the Battle of Britain days. It was tremendously good practice for everyone involved and we enjoyed it immensely. You had the thrills of combat without having to worry

Members of 245 Squadron at RAF Horsham St. Faith strike a pose with their dogs in front of Meteor III EE294. (Photo courtesy of author)





Although the Me 262 was decidedly more heavily loaded, its superior aerodynamics gave it the edge over the Meteor in speed, range, and climb. They never met face-to-face, so we'll never know which was the superior fighter. (Photo courtesy of EN Archive collection)

about all the “hot lead” being thrown at you!

I had briefed the five other chaps in my flight that we would utilize the same tactics as the Me 262 pilots had used on the B-17 formations during the war—in other words, we would avoid the Mustangs at all costs and concentrate on the Fortresses. It was certainly a sight to see as we climbed well above the bombers and fighters in our Meteors and waited to pounce on them. As we broke, we did split off attacks and dove down towards the bomber formations as quick as we could. As soon as the Mustangs saw us turn over on our backs and begin our dive, they tried to break into us. The six of us ignored the P-51s and kept on going straight down. We knew we had a higher speed advantage and that there would be no way the Mustangs could catch us. However, if we tried to stick around and turn with them, then the tables would have certainly been turned on us.

I wasn't paying attention to my airspeed and as I broke through the Mustang gauntlet, I looked back to see their “tongues hanging out” as they tried to catch us. Nearing the Fortresses from high right, I locked into one of them with my G.45 camera that was mounted in the Meteor's nose fairing and “fired away.” As I broke away, I dove to the lower right, giving the rear gunner the most difficult target to follow. The difficulty for me however, occurred seconds later as I pushed the Meteors nose farther down as my speed increased to the point that I hit compressibility. It was definitely the most terrifying experience I have ever had at the controls of an airplane!

The entire airplane went from being very,

Meteor vs. 262

What if the first jet versus jet combat occurred five or six years before the Korean War? It could have happened. The Luftwaffe fielded the first Messerschmitt 262s in the spring and summer of 1944, within weeks of the Royal Air Force's initial deployment of Gloster Meteors.

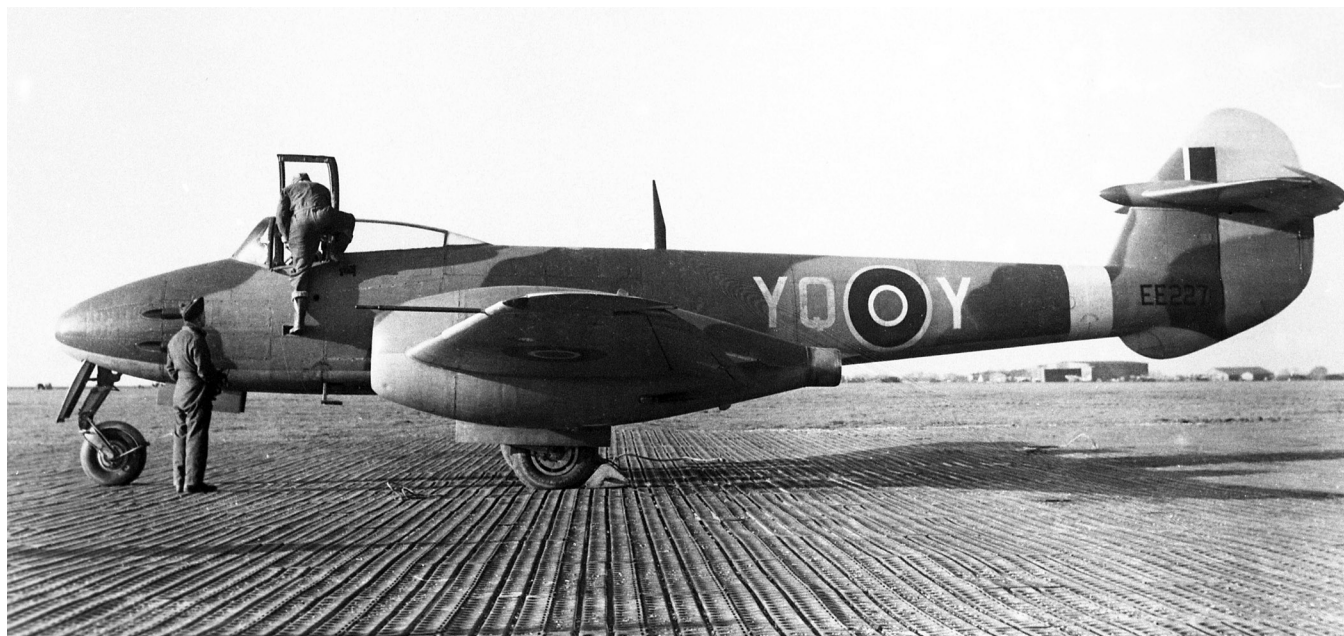
First flown in July 1942, the Messerschmitt jet equipped fighter, bomber, and reconnaissance units. Meanwhile, the twin-engine Gloster enjoyed a far quicker path to service, barely 16 months from March 1943 to July 1944.

Though the Meteor represented a revolutionary advance in Allied aircraft design, its performance was considered inferior to many piston fighters. At 540mph, the Me 262A was rated 130mph faster than the Meteor Mk I, and easily outclimbed the British fighter. The German Jumo engines produced nearly 2,000 pounds of thrust versus the 1,700 of Rolls-Royce jets, affording a lower power loading. However, the Meteor's far lighter wing loading would have permitted it to outmaneuver the German at any altitude. Both had cannon armament: German 30mm and British 20mm weapons.

Meteors flew with one squadron during the war, occasionally chasing down V-1 buzz bombs. No. 616 Squadron moved to Holland two months before V-E Day and never encountered 262s.

Schwalbe and Meteor Side By Side

	Me-262A-1	Meteor Mk I
Length	34.7 ft.	41.2 ft.
Wingspan	41ft.	43 ft.
Empty	8,400 lb.	8,139 lb.
Loaded	15,720 lb.	13,819 lb.
Engines	Jumo 004B turbos	Rolls-Royce W.2B turbojets
Thrust	1,980 lb. each	1,700 lb. each
VMax	540mph	410mph at 10,000 ft.
Range	650 miles	500 miles
Service Ceiling	37,500 ft.	34,000 ft.
Climb rate	3,900 fpm	2,150 fpm
Wing loading	67.1lb./sq. ft.	44.9 lb./sq. ft.
Thrust weight	0.28	0.45
Armament	Four 30mm cannon	Four 20mm cannon



616 Squadron leader, Dennis Barry's Gloster Meteor F.1, YQ-Y. (Photo courtesy of Joe Gertler)

very smooth and easy to maneuver, to one that became like a "rope snake"—fluttering up and down as the controls became useless as my nose dropped. I could waggle my stick around and it produced no response from the ailerons or elevator—it was as if the entire tail had come off! What was happening was that the lifting surfaces were reaching near the speed of sound and the airflow over the main plane was literally breaking away and not adhering to the shape of the airfoil. Ironically, I wasn't the only one in trouble with compressibility, as all the other chaps next to me in their Meteors hit it at almost the exact same time as I did. I immediately throttled back and so did the other chaps. Thankfully, none of us tried to trim the Meteor out of compressibility, like some other poor chaps had done and didn't make it.

Although all six of us in our Meteors were petrified as we hurtled earthward, not a word was said over the radio. For a long moment, it felt as though the Meteor was on the verge of disinte-

shy away from it as I began to experiment with it quite a bit on future flights. I filed reports with the lessons I had learned and these were later analyzed with hopes of keeping other chaps out of trouble.

Mustang melee

After the war, while I was stationed at Horsham St. Faith, our 504 Squadron was renamed 245 Squadron. There was a Polish P-51 Mustang Squadron, No. 303 Polish Fighter Squadron that was stationed nearby at Hethel and I became acquainted with one of their pilots. His name was Jan "Johnny" Zumbach, and he was quite famous in his own right after having scored eight victories during the Battle of Britain and ending the war with 13 total. He had a chest full of medals including a DFC with bar and an assortment of others, but none of that seemed to matter as we met socially at a local pub quite frequently.

Johnny and I were talking over a pint one day about the merits of our various aircraft and I brought up the fact that while the Me 109G was faster than the Spitfire, if you saw it in time there should be no reason to get shot down by it because the Spitfire could always out turn them. Now with the Meteor, I reckoned the tactics I used during the "mock battles" were similar to those of the 109G during the war. As I described these facts in great detail to Johnny, that these hit-and-run tactics worked very well for the Germans against the Flying Fortresses, I wouldn't under any circumstances go into combat against the Mustangs for fear that they could out turn me. But then again, I reminded him, it wasn't the Mustangs that the fighters were after, it was the bombers.

I must have piqued Johnny's interest because he looked at me, rubbed his jaw vigorously and said, "Why don't we have a little pre-arranged

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grating. As we passed through 5,000 feet with the bloody awful buffeting, we finally reached denser air and it suddenly became beautifully smooth once again. The lifting surfaces reverted back to what they were designed to do—lift us away! I reformed my flight as we very gently flew back to our base, all of us reciting our own little prayers of thanks. Although I had encountered compressibility by complete accident and endured the subsequent terror that followed, I didn't completely



Four guns, out front. Gloster's design looked square and blocky from the side, but nose-on takes on a classic beauty, but with a formidable punch of four 20mm cannon, unencumbered by a propeller arc. (Photo by John Dibbs/planepicture.com)

battle of our own and see who can shoot down who first?"

The following day I took off with six Meteors and met Johnny and his six Mustangs at 25,000 feet. We had previously briefed that we would circle around one another, straighten out, and then fly past one another straight and level with our flights going in opposite directions. As soon as our Meteor wingtips flashed by the Mustangs, the fight would be on and we were free to use whatever tactics we wanted to. I had briefed my chaps earlier that we would not mix it up with the Mustangs and to not even think about trying to turn with them. Instead, we would act as if we were 109Gs, just like the painful encounter I had

Not as radical a design as Messerschmitt's 262, the Meteor was a tough and reliable airframe, and though it was kept in service longer than it should have been, soon being outclassed by the Soviet MiG 15 and NAA's F-86 Sabre, the Allies' "First Lady" of Jet Ops holds a unique place in history. (Photo by John Dibbs/planepicture.com)



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experienced with them earlier in the war.

As soon as we passed by the Mustangs, we opened up our throttles and climbed. Our Meteor IIIs were significantly faster in a climb than the Mustangs as we sat up high on our perch, circled above Johnny's P-51s, and took advantage of our height. We pushed our noses over and dove down onto the Mustangs. As we drew closer, each of us picked out a target and began to fire with our cameras. We hit them hard and then continued to zoom right through them. We had a higher mach number than the Mustangs and there was no way they could catch us in a dive. Back at the

pub, each of us (with a pint in hand), claimed we had shot each other down. Broadly speaking, we held the edge with our Meteors because we didn't allow ourselves to engage them in a turning battle. To do that would have been quite absurd—like a 109G trying to out turn a Spitfire.

Dog flight

It was quite common for pilots in RAF squadrons to have dogs living with them while at the airfield. I was no exception and owned a young Labrador mix named Patrick. For whatever foolish reason, I really wanted Patrick to fly with me in the Meteor but knew I couldn't carry him on my lap, especially with the control stick between my legs. I couldn't put him on the floor either because there wasn't one—your feet rested in rudder pedal stirrups. I scratched my head for a while trying to figure out a way to carry him aboard the Meteor and realized I could put him right behind my head. Because the hood flared down into the fuselage behind the pilots head, there were transparent armor plates installed, made of heavy thick plastic to protect us from rear attacks. I decided to take one of these panels off from the left side and pushed old Patrick in stern first. As he lay in that position, he was held in place quite nicely and his head was just about level with mine.

As we took off on May 11, 1946, I received a lot of nervous licks from Patrick and I could see he was not in any distress. As I climbed, I did a beautiful roll with him and he didn't seem to mind in the least. I pushed the throttle forward and did 500mph, and I smiled as I looked at Patrick watching the world go by. I didn't go very high or do a loop for

that matter because I didn't want to hurt his ears. All the flying we did was down low and Patrick seemed to enjoy flying in the Meteor as much as I did—although his tongue hung out more than mine! After I landed, I quickly removed my stowaway before any one reported me—it was all quite illegal!

I included Patrick's name in my log book as a copilot and took him up on several more flights until he outgrew his window seat. Years later, word of Patrick's flight in the Meteor leaked out and he and I were eventually listed in the *Guinness Book of World Records* as the first Allied dog to ever fly in a jet. I had no way of confirming that the Luftwaffe chaps flying jets during the war didn't pack one of their dogs inside and take it out on a combat mission. If the German pilot had mixed it up with some Allied fighters, that literally would have been one cracking dog fight! ✚