

Me 163 Komet

A brilliant failure

TEXT & PHOTOS BY HEATH MOFFATT

The Komet was not a war's-end-crazy-idea born of desperation, as is often believed. In fact, the design began in the late 1930s, and the prototype flew in 1941. It was the hands-down winner for the crown of fastest operational aircraft of World War II, both in speed and climb. From the technological view, it included some of the most advanced aerodynamics airborne at the squadron level during the war, and might have presented the most performance ever eked out of nonstrategic materials (wood wings). It also presented, however, more danger to its pilot than any other aircraft flown operationally during WW II by any combatant (if Japan's Baka Bomb is ignored). Further, for all its stellar technology, it had little or no effect in combat.



The performance of the Komet was the result of some basic rules of high-performance airplane design: Put the biggest motor possible on the tiniest airframe possible. With the later motors, it had a thrust-to-weight ratio that approached 1:1 as the fuel burned down. It couldn't help but climb fast and fly fast.



The cockpit was adequate for medium-size pilots and had good visibility.

WHEN IT WASN'T EXPLODING OR BEING SHOT DOWN, THE KOMET REPORTEDLY WAS AN EASY AND PLEASANT AIRPLANE TO FLY.



Originally the Me 163 carried a pair of 20mm cannon. They were replaced with two 30mm Mk 108s, which fired too slowly to reliably hit the target at high speed.

Germany's high command, especially Hitler, was enamored with advanced technology. *Der Führer* was continually looking for newer, faster, bigger everything and micromanaged his side of the war to the point where he personally was responsible for much of the outcome. The Komet fell into that category. It was unique, it promised blinding speed, and it looked as if it might be an inexpensive aerial killer that no one could touch, so it was a must-have. It was, indeed, fast, but even that turned out to be a limited attribute. Germany had a number of true geniuses in its employ, not the least of whom was designer-engineer Alexander Lippisch, whose trademark was highly swept wings with only a vertical tail surface (no horizontal stabilizer). Lippisch had first developed the concept in sailplanes, and he brought that knowledge with him when he transferred to Messerschmitt in 1939 to do serious work on the Komet. He initially worked with a glider version to test the aerodynamics, but in 1941, the Me 163A V4 was shipped to Peenemünde, where the Messerschmitt HWK R11-203 rocket engine was installed. In October of that year, with Heini Dittmar at the controls, it set an absolute world speed record of

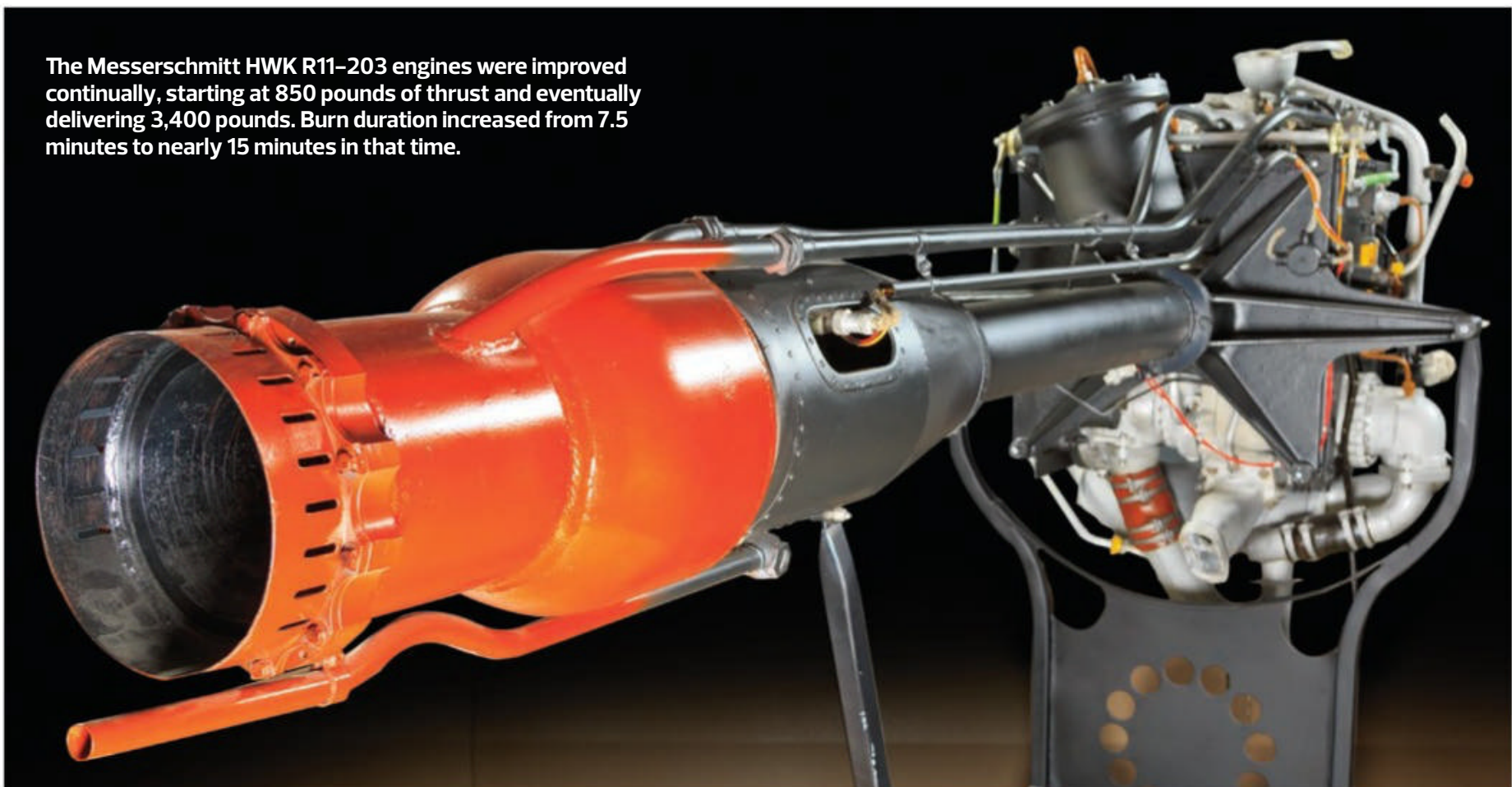


Above: The pilot jettisoned the landing gear immediately after takeoff.

Right: Nearly half of the Komet's weight was fuel.



The Messerschmitt HWK R11-203 engines were improved continually, starting at 850 pounds of thrust and eventually delivering 3,400 pounds. Burn duration increased from 7.5 minutes to nearly 15 minutes in that time.



The common Revi 16/B, reflector, noncomputing gun sight was used.

624mph. In July 1944, however, Dittmar pushed his own record to 702mph, in a Me 163B V18 powered by a new version of the original rocket motor. He returned from the flight with much of the tail missing. The original motors had roughly 850 pounds of thrust and only seven and a half minutes of power available, while newer, 3,400-pound-thrust engines ran for as long as 12 to 13 minutes. This sounds laughably short, but the flight profile during that time was impressive.

From takeoff, an Me 163B-1 could be at 39,000 feet, well above most bomber formations, in a little more than three minutes. Because rockets don't need

air to breathe, the 163B climbed faster the higher it went, reportedly achieving rates of climb of 16,000 feet per minute at altitude. The climb angle was an almost-impossible-to-believe 70 degrees! The initial plan was to station squadrons of Me 163s in rings around population and industrial centers, where, with five minutes' warning, they could be attacking bomber formations at altitude (jettisoning their landing gear on takeoff). The very thing, however, that gave the Komet its edge—550mph speeds in “cruise”—greatly hampered the pilot's ability to fire accurately. Even with multiple passes, pilots couldn't reliably achieve the four or five hits their 30 mm cannon required to down a bomber. Plus, fighter escorts quickly realized that the interceptors ran out of fuel rapidly, so they just waited until the Komet planes were gliding back to their bases and followed them down.

Another major shortcoming was that the aircraft were, literally, flying bombs. The two chemicals (C-Stoff, a methanol-hydrazine rocket fuel, and T-Stoff, a hydrogen peroxide oxidizer) comprising its fuel exploded if only a drop or two of each commingled. Even worse, both of the fuels were extremely toxic and capable of melting the pilot if he came in contact with them. When it wasn't exploding or being shot down, however, the Komet reportedly was an easy and pleasant airplane to fly and highly maneuverable, even when out of power.

Although the Komet appears to be a plane of the seemed-like-a-good-idea-at-the-time variety, it spawned technological advantages out of proportion to its tiny size. ✈