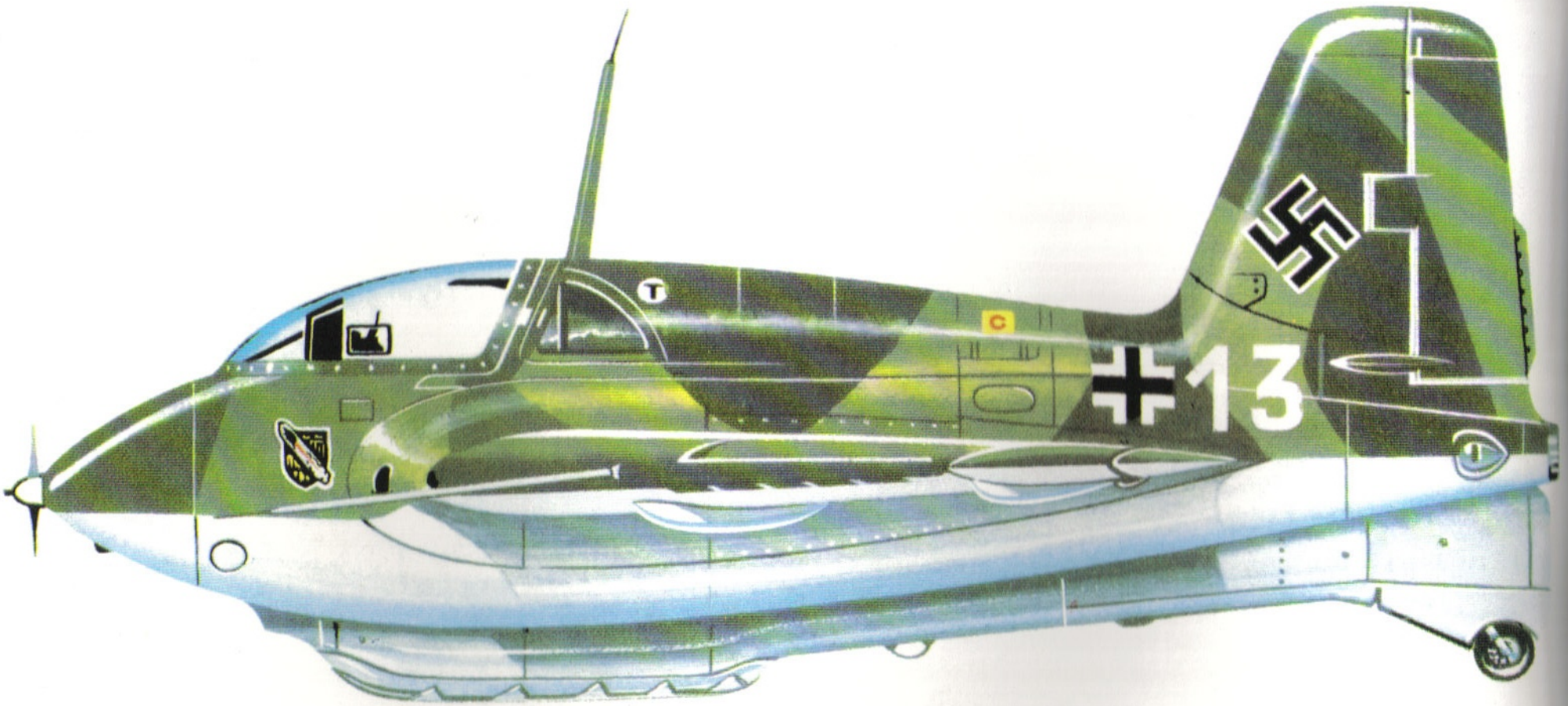
MESSERSCHMITT Me 163 "Komet"

Vol.II

Schiffer Military History VOL. 57

M. Emmerling/J. Dressel

MESSERSCHMITT Me 163 VOL.II Schiffer



Me 163B of II/JG 400 - early 1945, Brandis.

MESSERSCHMITT ME 163
VOL. II

Text: M. Emmerling
Photos: J. Dressel

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Former pilot and NJG 1 and 3 (Bf 110),
and EK 16 (Me 163)
Translation courtesy of RZM Imports

Cover Artwork by Steve Ferguson, Colorado Springs, CO

BANDIT FROM BRANDIS
This painting is of an attack by a Brandis-based JG 400 Me 163B "Komet" against the last elements of the 44th Bomb Group B-24 Liberators withdrawing from the target area near Leipzig in late summer 1944. One Liberator had been previously hit by the diving *Raketenflieger* who has wheeled about and swept upward in his follow-up, 400 knot "yo-yo" firing pass. If enough rocket fuel remained and escort fighters did not intervene, the skilled Komet pilot could make a third diving pass on the hapless bomber crews who rarely could keep the deadly, streaking Komet in their gunsights.

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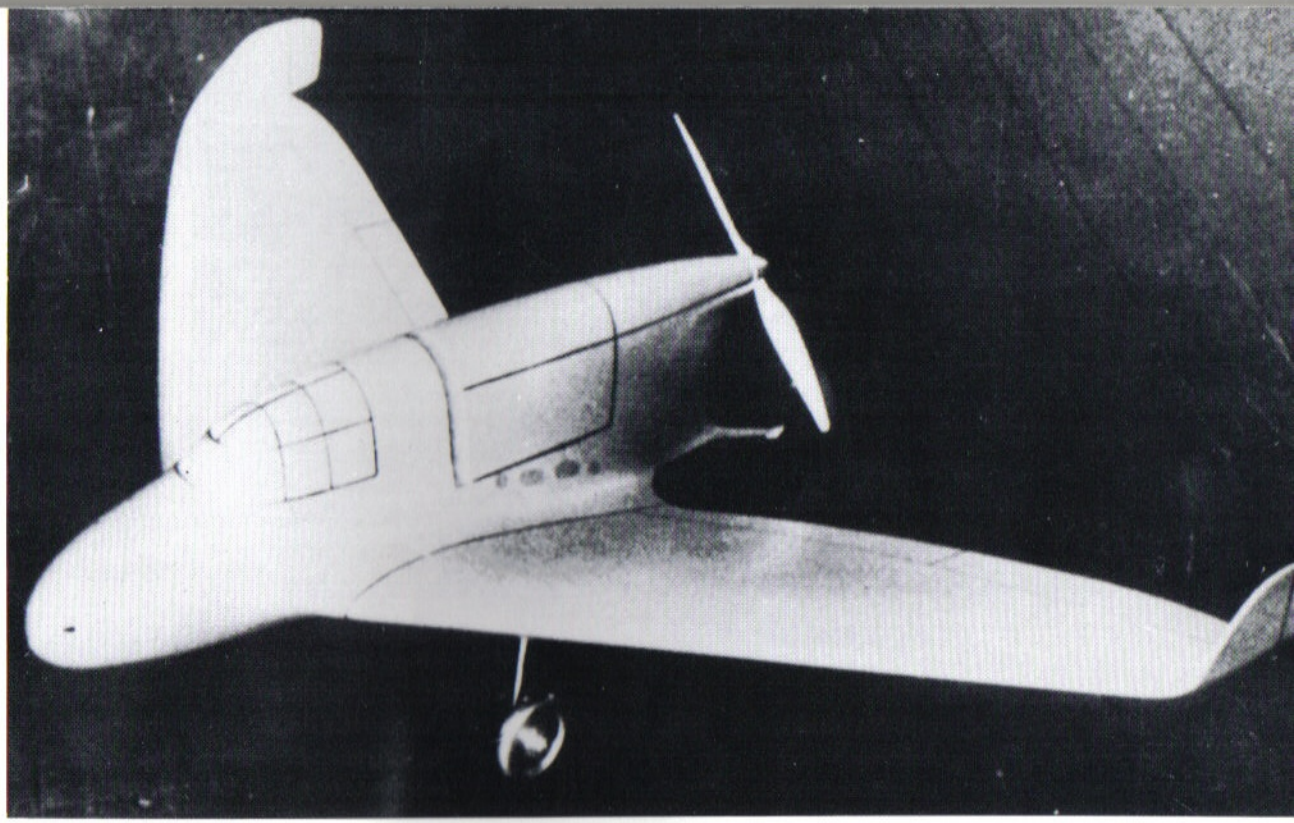
The insignia of 2./JG 400.

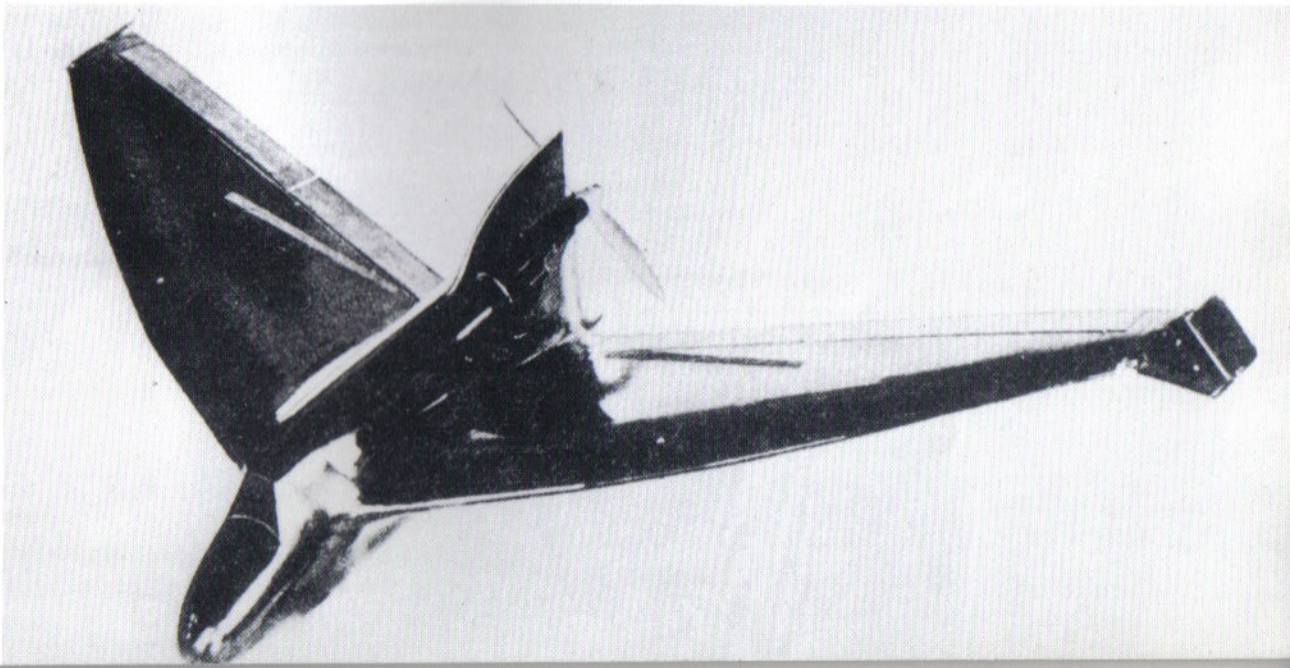
Inception of the Me 163A

In January 1939, section L of the Messerschmitt works in Augsburg under the guidance of Prof. Dr. Alexander Lippisch, started to work on "Project X." The subject was a research aircraft for high-speed flight with rocket propulsion. It would later go under the designation of Me 163.

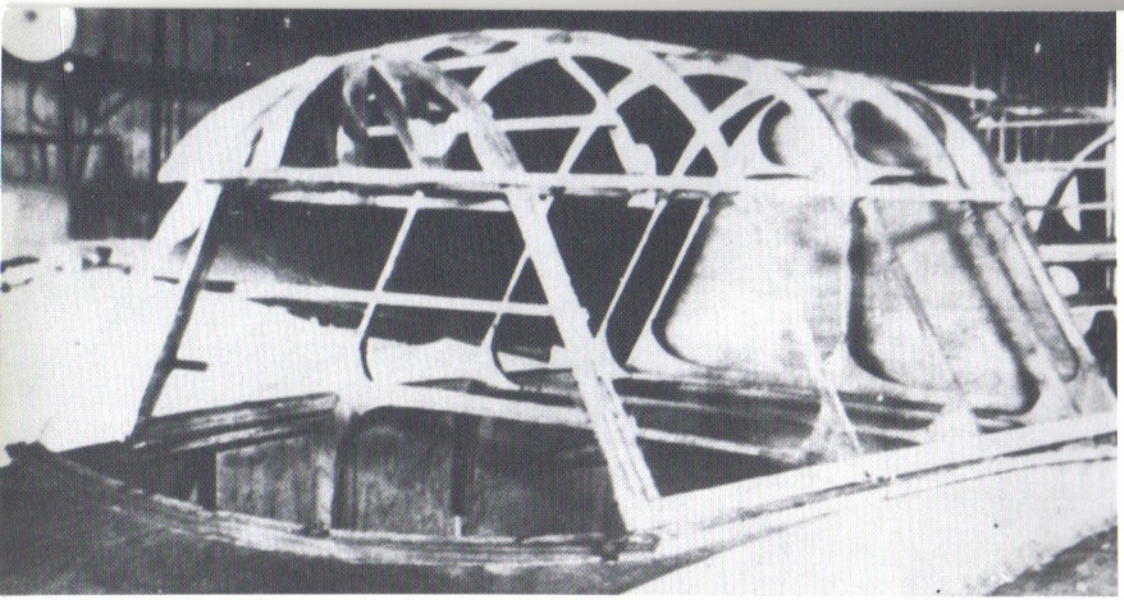
The Me 163A was developed from the DFS 39, also known as "Delta IVC," In June 1939, the first drawings for the rocket aircraft were ready. A month later the manufacturing process started. Production of the 163A was delayed however, due to the start of the campaign in Poland. To get experience with rocket propulsion, Lippisch installed a rocket engine in the DFS 194, which was designed for a piston engine, and a pusher propeller. Work ended in the summer of 1940. Until November 1940, several flights were accomplished. The results were used in the construction of the Me 163A.



Above right:
Early view of the DFS 194 without central rear fin and pusher prop.

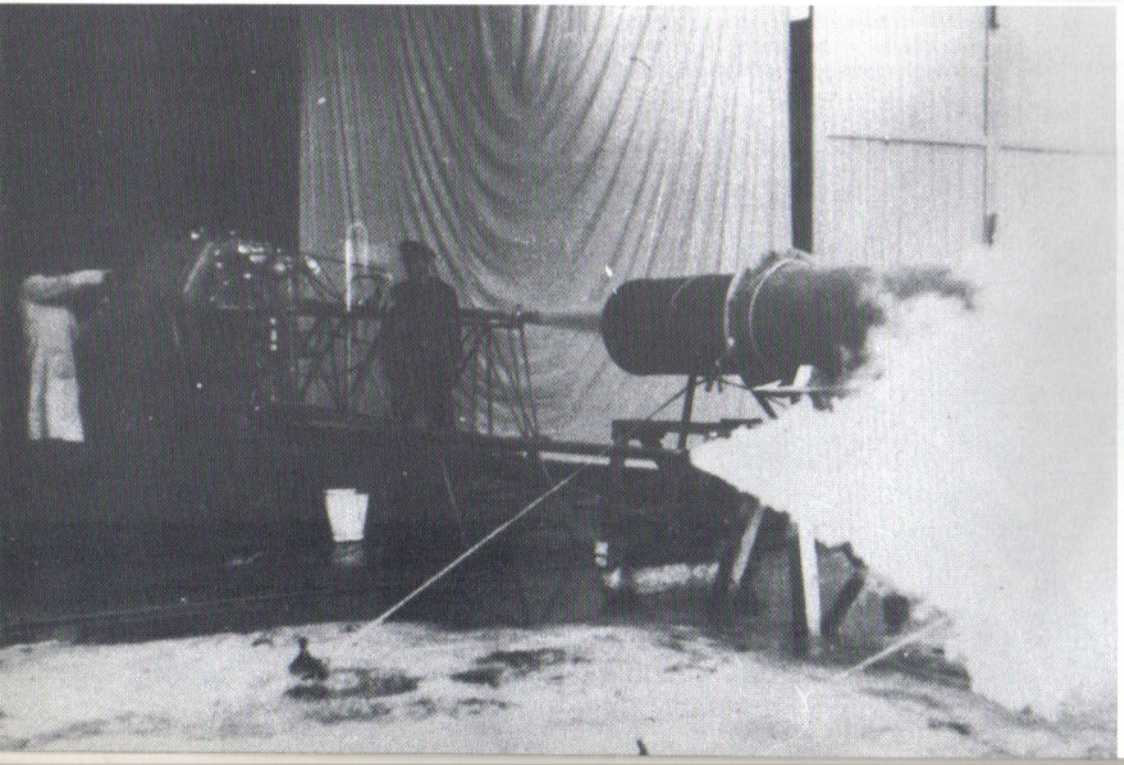


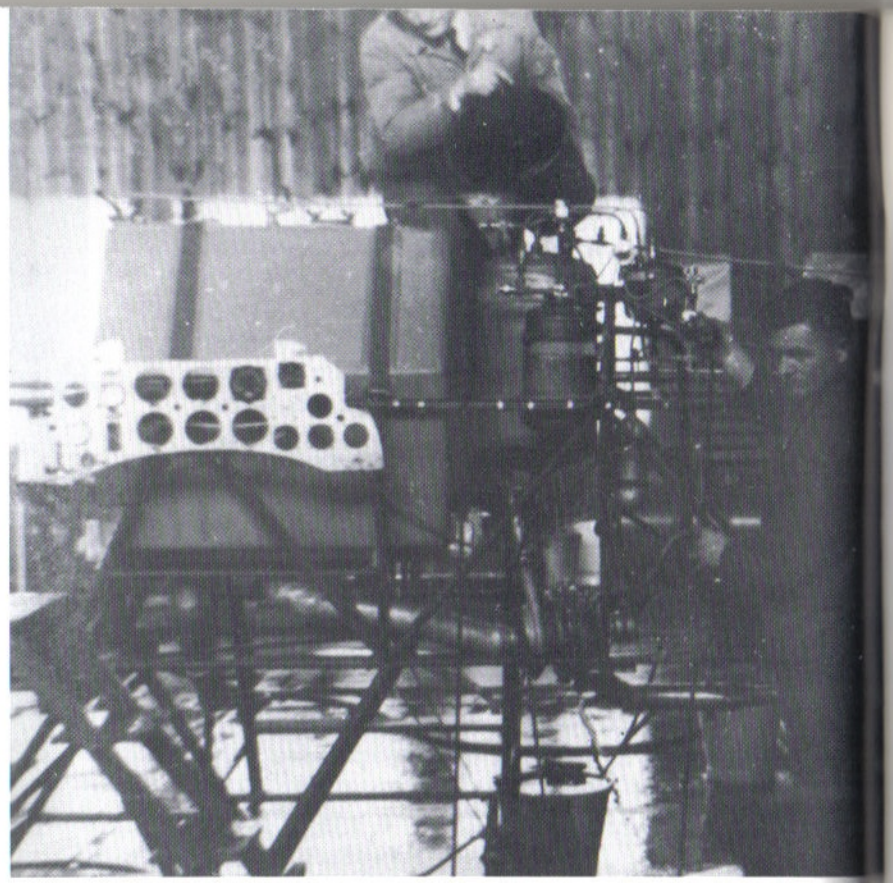
Right:
The DFS 194 with central rear fin and piston engine. This fuselage was the starting point for the predecessor of the Me 163A, the DFS 194 with rocket propulsion. Due to the location of the engine, the aircraft was ideally suited for a rocket engine, which out of necessity was installed in the rear.



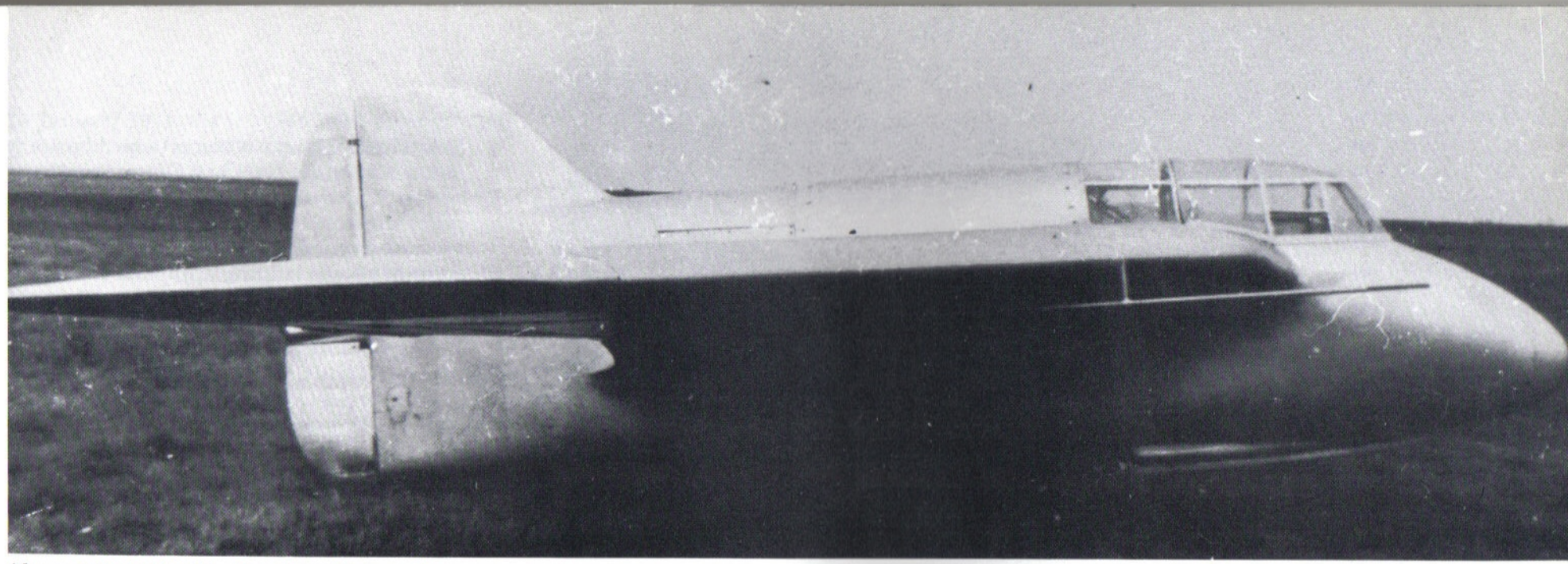
Above left: The cockpit of the DFS 194 under construction.

Below: Stationary testing of the rocket engine for the DFS 194 in the summer of 1940. Hydrogen Peroxide and a solution of Kalium Permanganat was used as engine fuel.

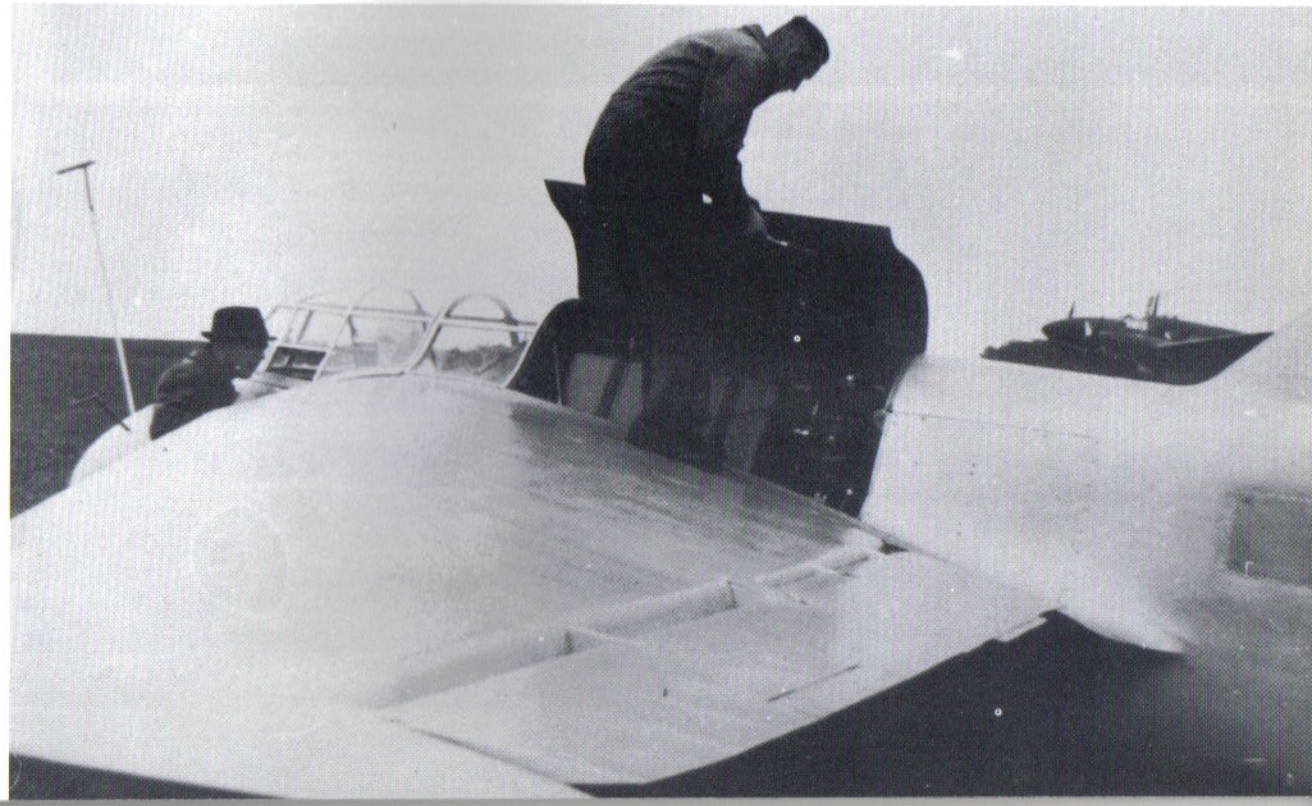




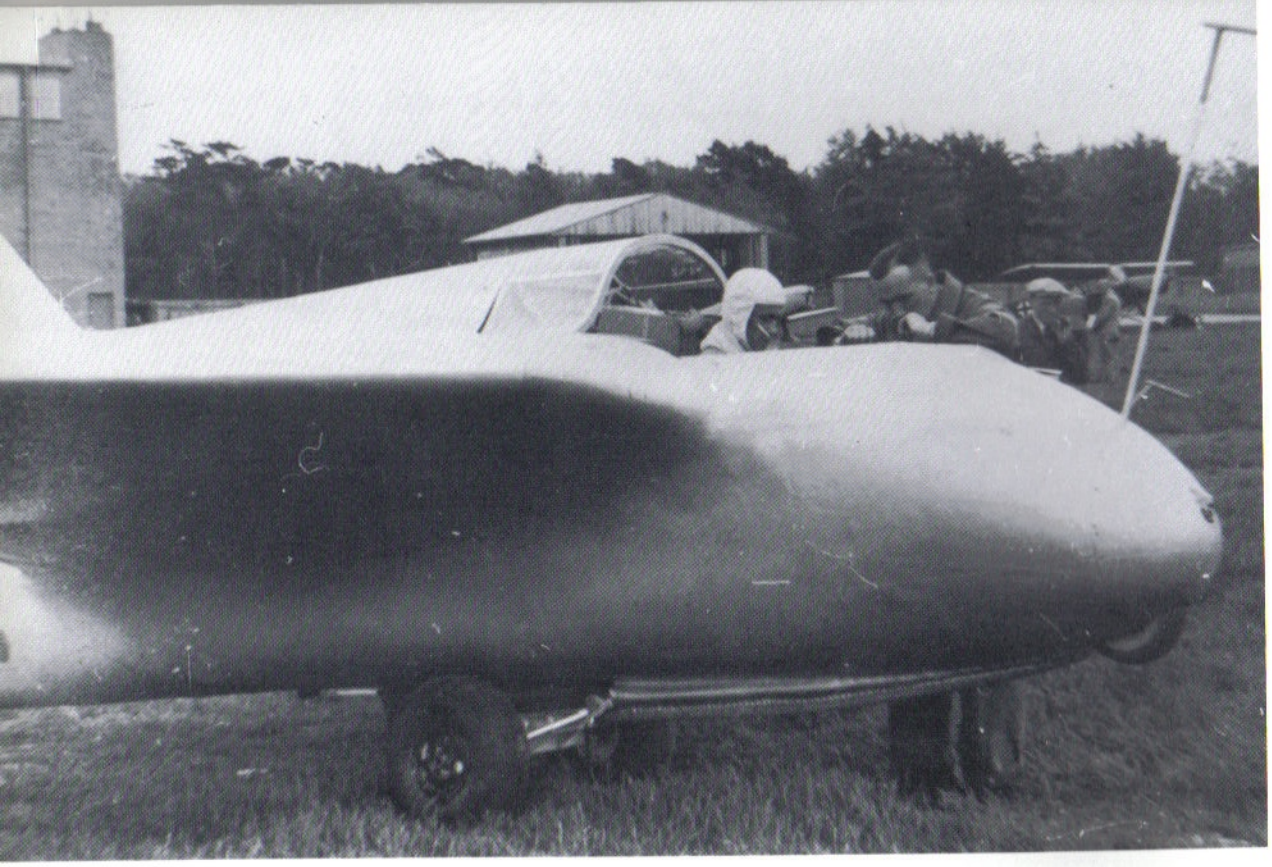
Above right: Preparations for the test run of the HWK RII 203.



Above: The DFS 194 after the refit to rocket propulsion in the fall of 1940.

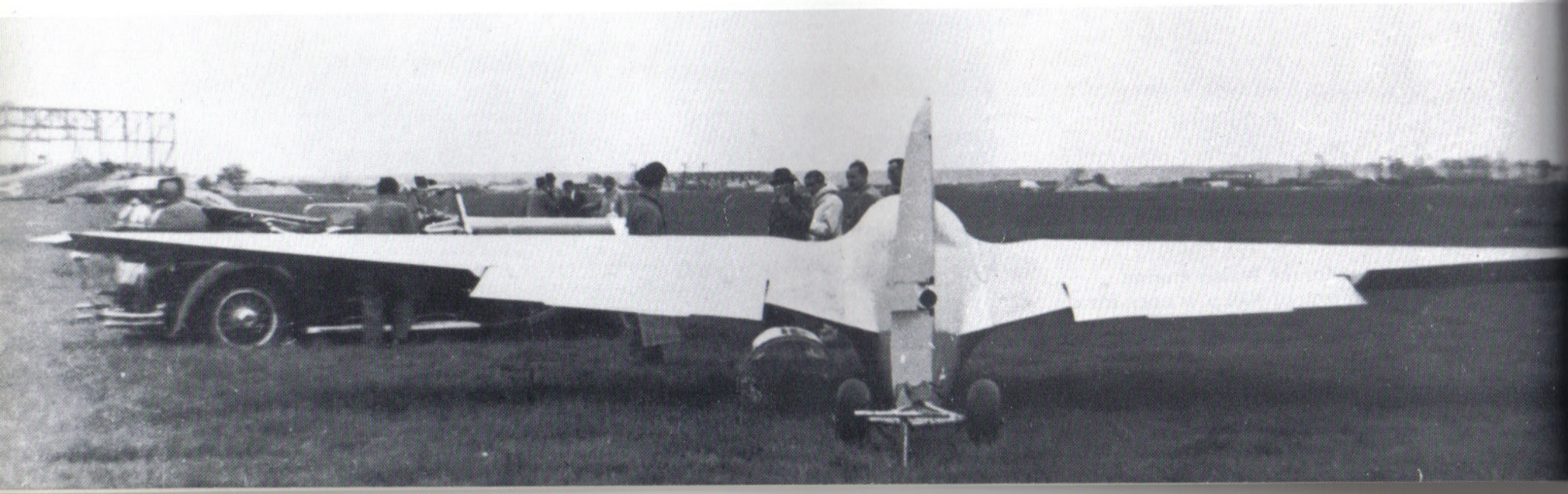


Right: The cover for the Walter engine, which had an output of 400kp, is open for a last check before the flight.



Left: Heini Dittmar is being helped by a technician before the start. Of note are the oversized pitot tube and the small wheel under the nose of the aircraft. The wheel was to prevent damage to the aircraft in the event of a steep landing approach.

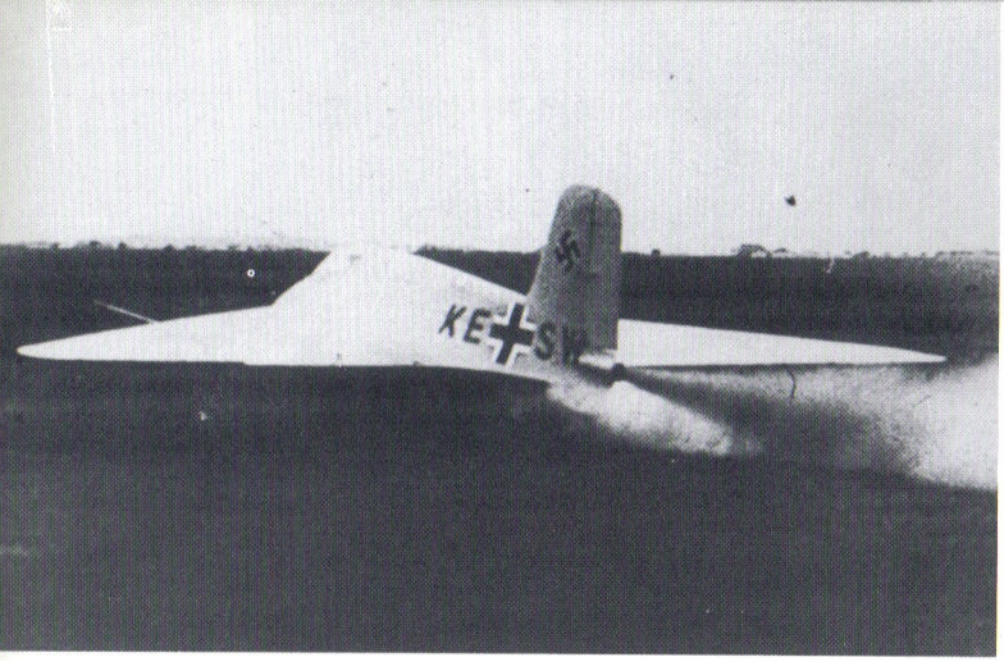
Below:
In August 1940, the test career of the Walter engine for the Me 163A had its first start at the airfield of Peenemünde west under Heini Dittmar.

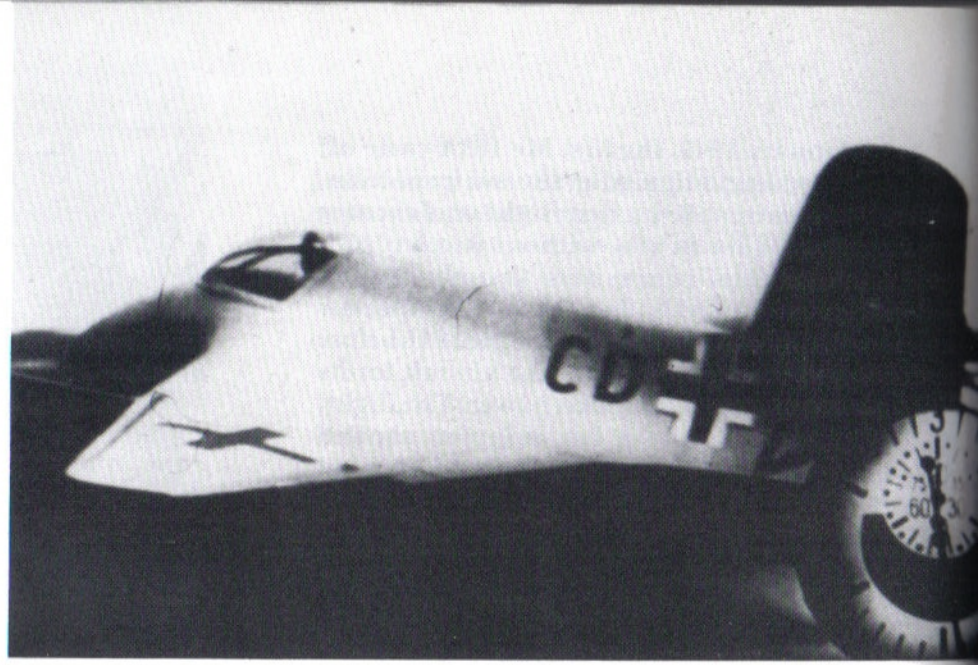


In January 1941, the first Me 163A came off the production line. After the end inspection, the aircraft made its first flight on February 13, 1941, first in tow without its own propulsion. The reason was that the Walter company in Kiel had problems with the new engine. It took until August 13, 1941 before Heini Dittmar could take the aircraft for its maiden flight under rocket power. The flight, which lasted only a few minutes, showed everyone present that the aircraft was of satisfactory construction. A short time later the absolute world speed record of 755/kph could be topped. On October 2, Heini Dittmar even passed through 1000/kph, reaching exactly 1003.67/kph. The Me 163A had succeeded as a high speed aircraft.

Above right: The first aircraft of the A series in a hangar in Peenemünde. The aircraft had a glossy light gray paint scheme.

Right:
The Me 163 AV4, marking KE+SW, Factory No.16300000001.

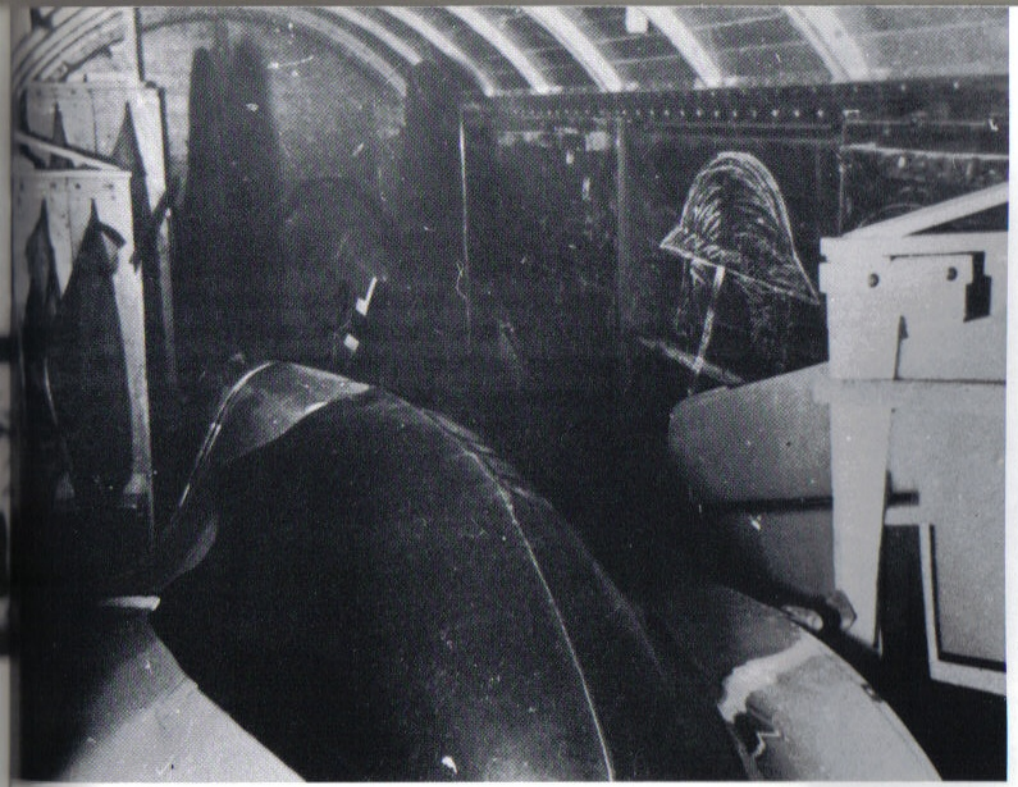


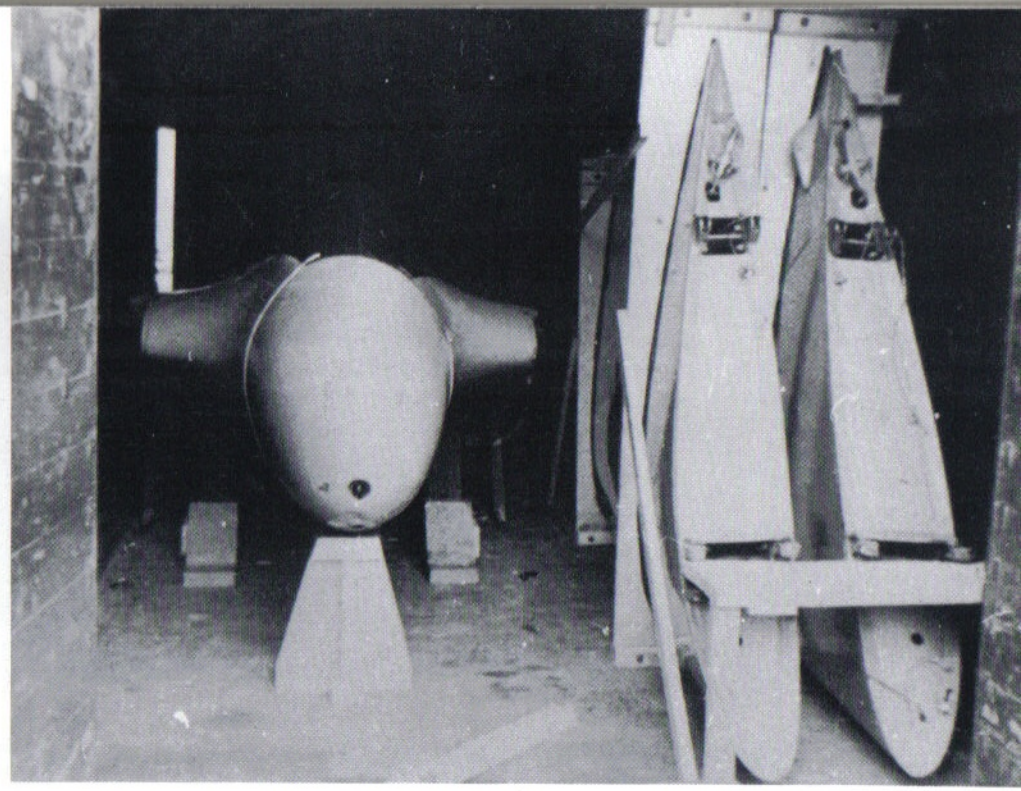


Above:
A starting Me 163 AV6. A camera with a built in stopwatch took pictures, to be able to evaluate the sequence later.

Above left:
On August 13, 1941, the first start of the Me 163 AV4 was executed with rocket power.

Left:
The wreck of the Me 163 AV5 after an accident during an exhibition at Peenemünde on August 25, 1942. The A/C with the markings GG+EA was 70% destroyed and was later scrapped.

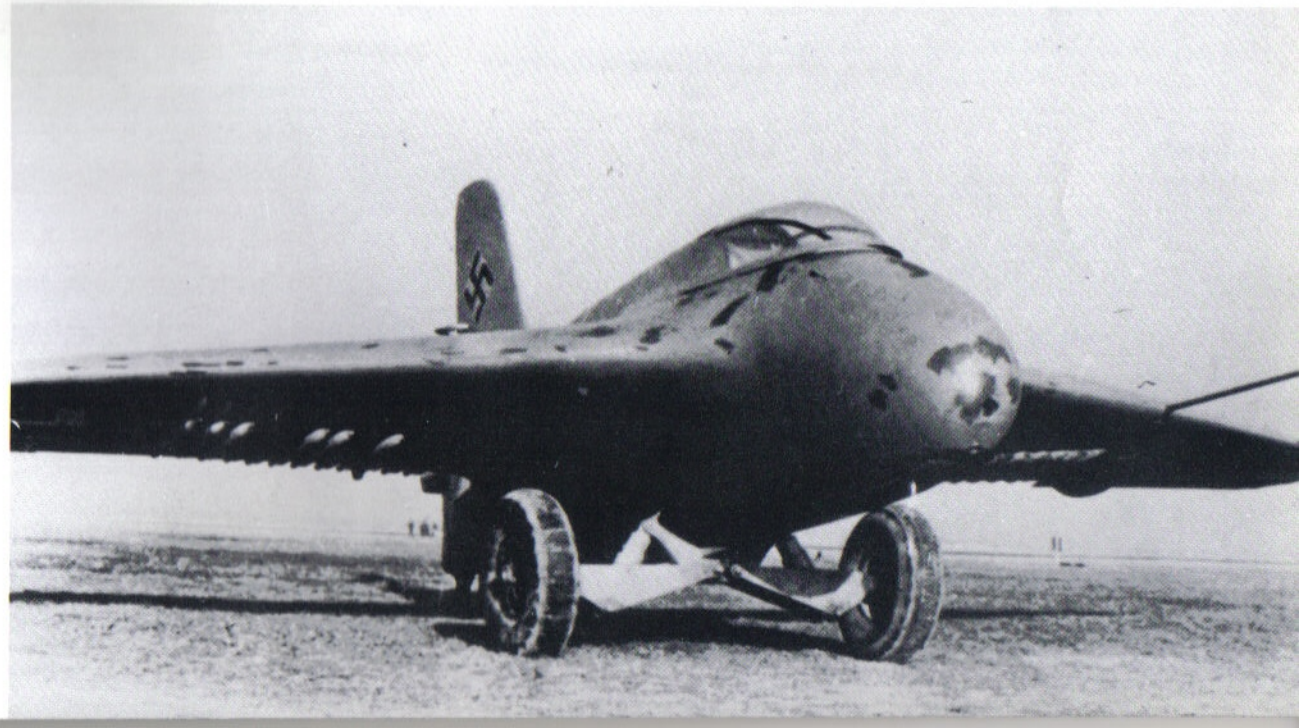


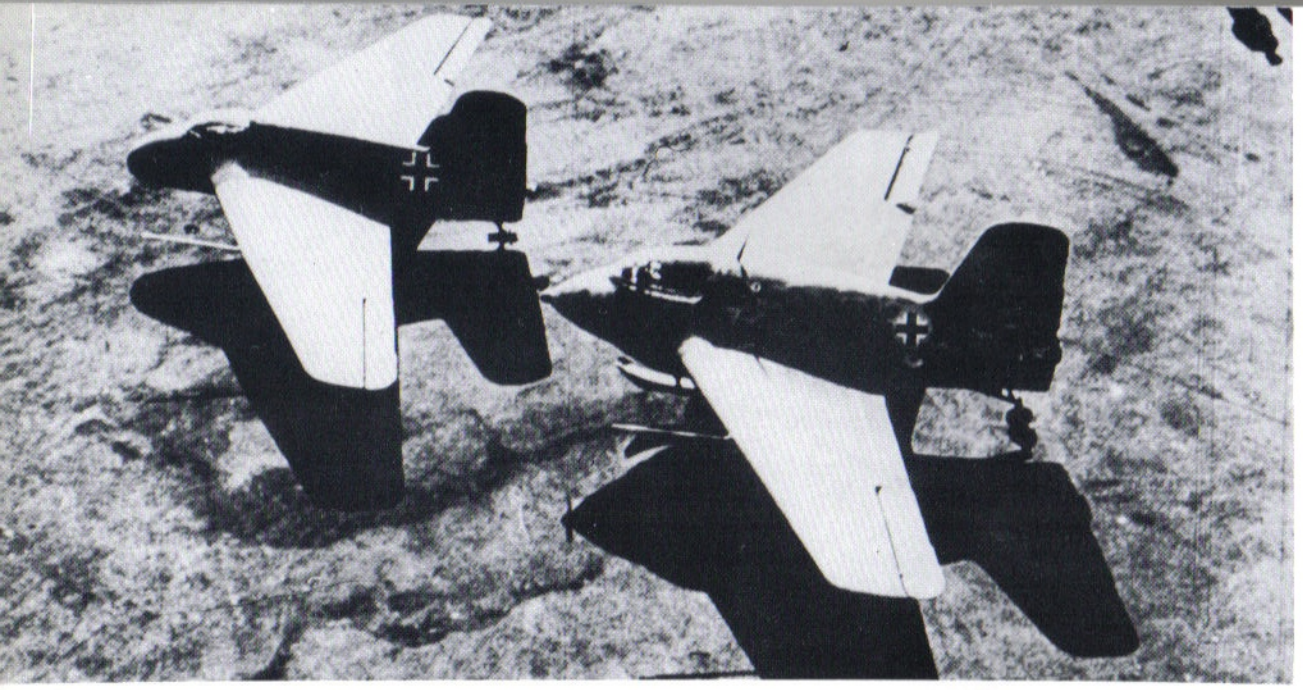


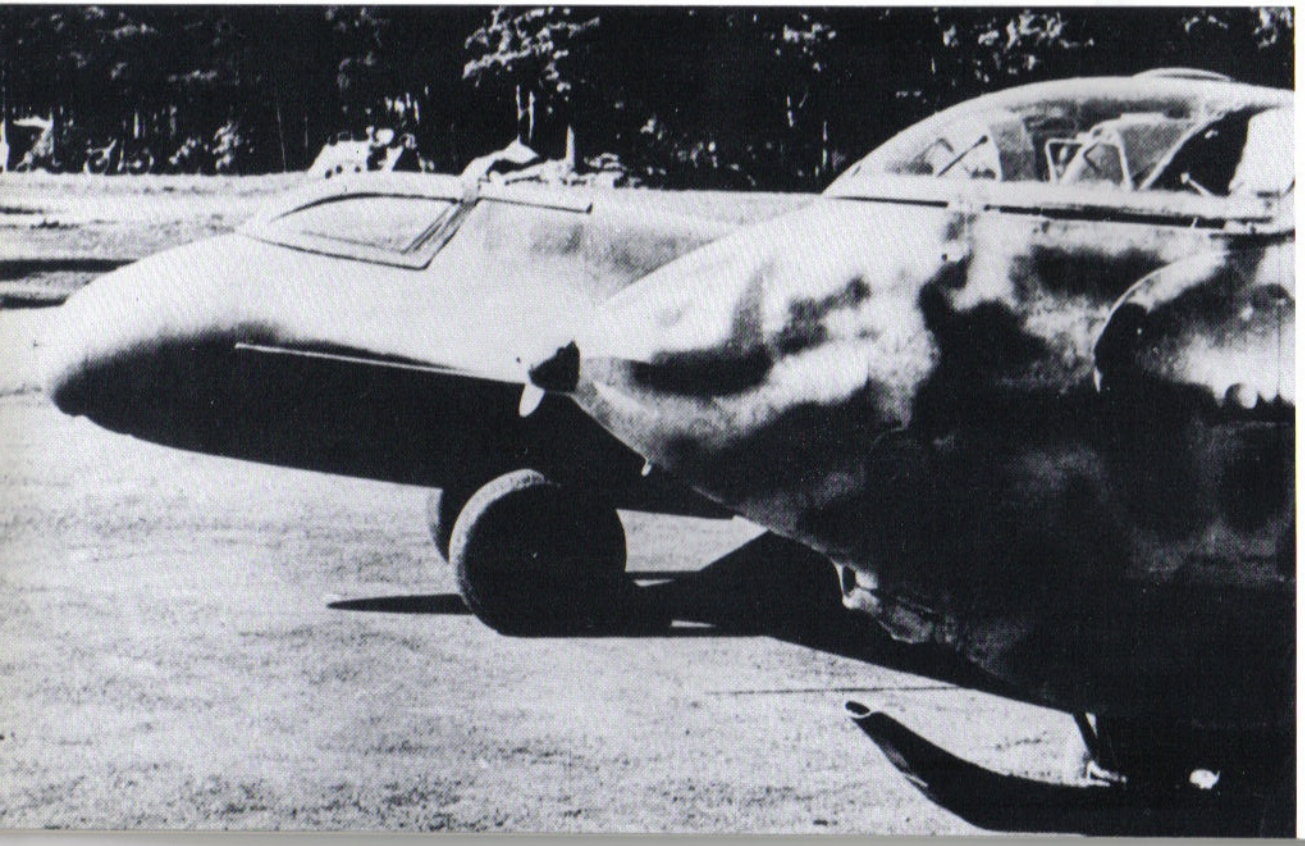
Above: Railway transport of the Me 163A. In the background the Me 163 AV6, marking CD+IK.

Above right:
For the transport, the wings were removed and the fuselage was mounted on wooden supports to prevent sliding around. The opening in the nose is the tow coupling.

Right: Possibly in March 1945, an Me 163A was equipped with two wooden supports for twelve R4M projectiles. This armament was also used on the Me 262 A-1a/R1 of JV44 and some Focke-Wulf Fw 190s.







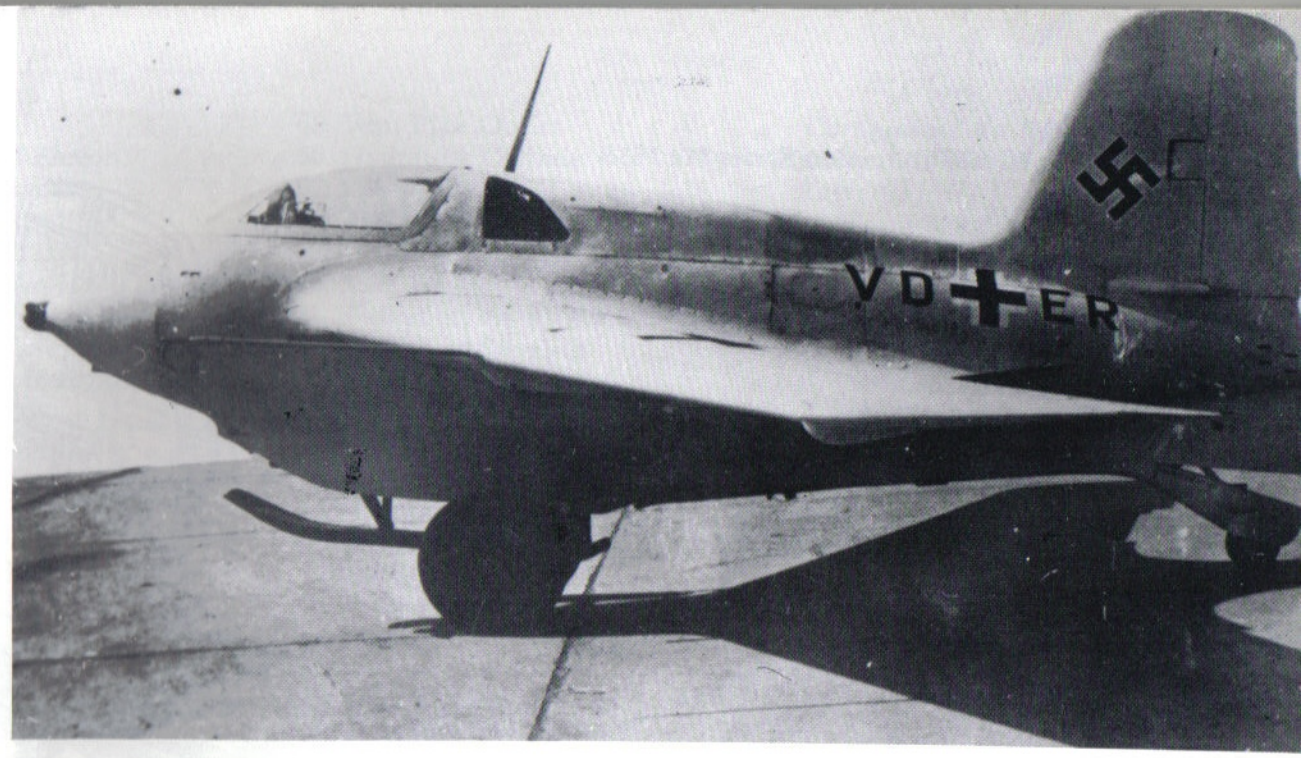
Aside from the Me 163 AV4, nine other aircraft existed — the Me 163 AV5 to AV13. They were used for test purposes and for flight training.

After the success of the Me 163, General Udet, Director General of Luftwaffe Equipment and member of Luftwaffe High Command (OKL), ordered Lippisch to produce an armed version of the rocket aircraft. In view of all the positive characteristics of the 163A and all other further studies of aircraft with rocket propulsion, the legendary Me 163B was conceived in the fall of 1941 as the first armed and built production rocket fighter in the world. In March 1945, it was given the added name of "Komet."

Above left and left:
These photos show the optical difference between the Me 163A and the Me 163B (the 163B with spotted camouflage paint).

Me 163B

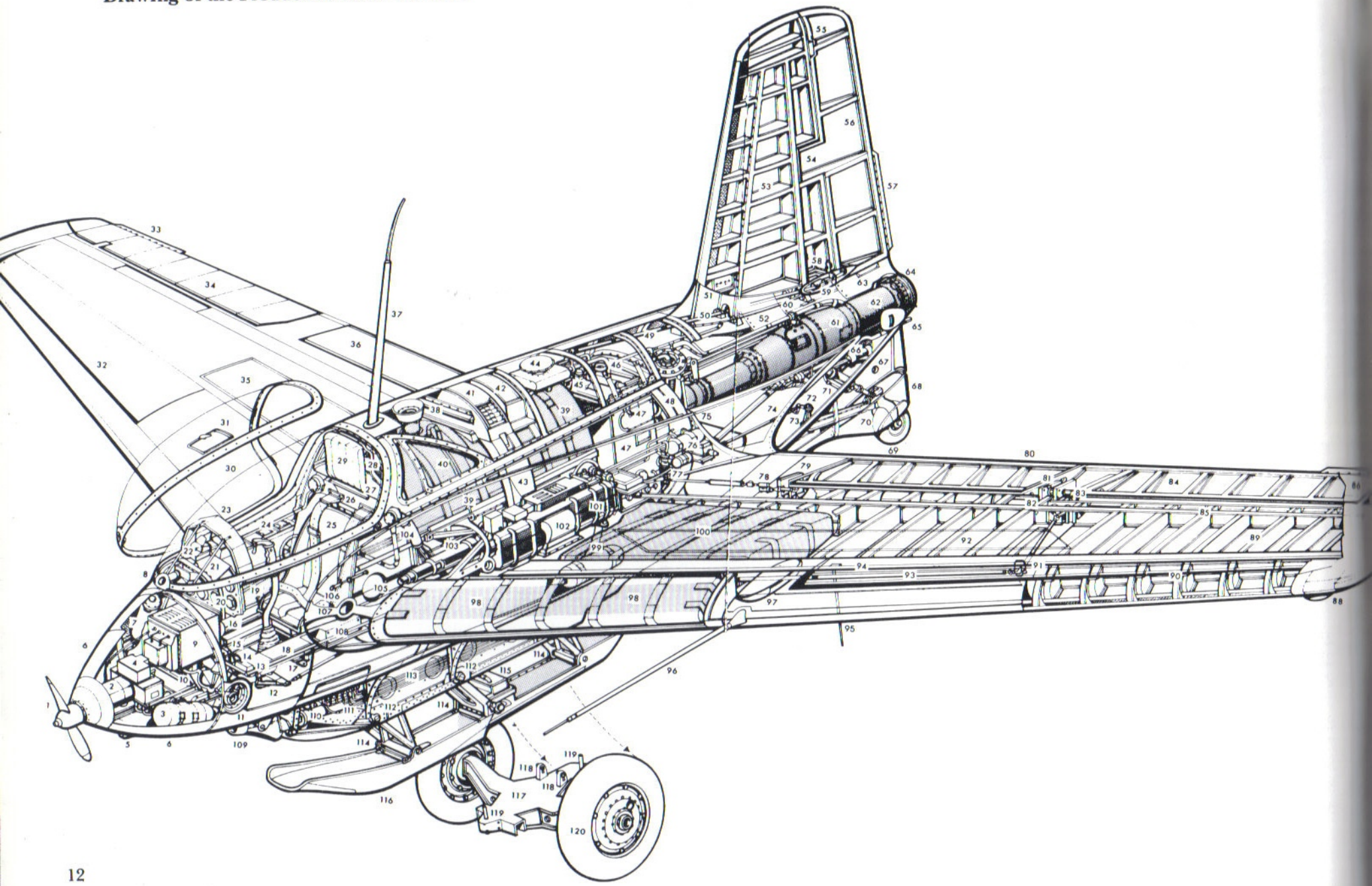
The Me 163B was a tailless cantilever midwing aircraft, in mixed construction with jettisonable gear, tailwheel and retractable landing skid. The fuselage was of an oval cross section in monocoque aluminum construction connected with flush rivets. The main sections were the armored nose cap, the forward section, the cabin and the wing connections. The cabin had an armored windscreen and the sides and rear had armor plating of 20mm to shield the pilot from enemy fire. The fuel tanks for the T-stoff were located unprotected on the sides and behind the pilot. The plywood wings had fixed leading edge slots, flaps, ailerons and additional tri-flaps. The ailerons acted also as elevators (elevons) the C-stoff tanks were in the wings. The radios used were the FuG16 ZE and the FuG25a.



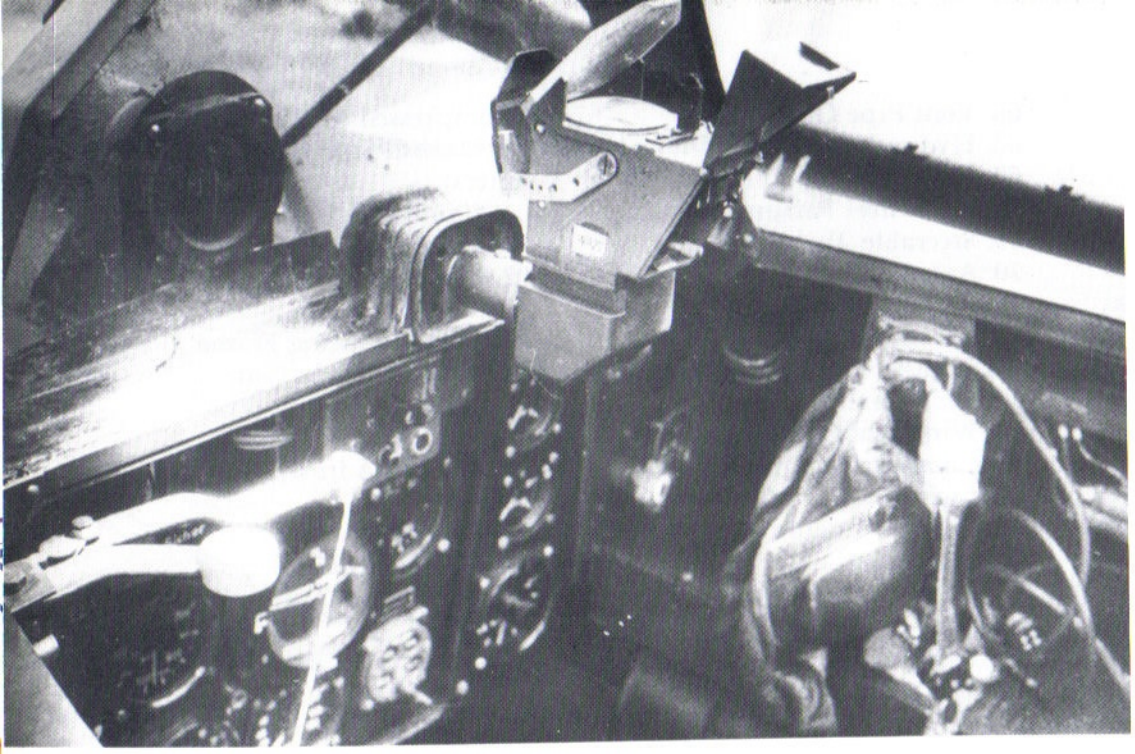
Above right: The ninth prototype had airvent slits at the rear of the engine exhaust. In addition the tail was flanged and no longer screwed on, in order to facilitate a faster maintenance time when work on the rocket engine was necessary. This aircraft was used for weapons testing.

Right:
The Me 163 BV21 was used for gear and high-speed testing. The first flight was on June 24, 1943.

Drawing of the Production Series Me 163B



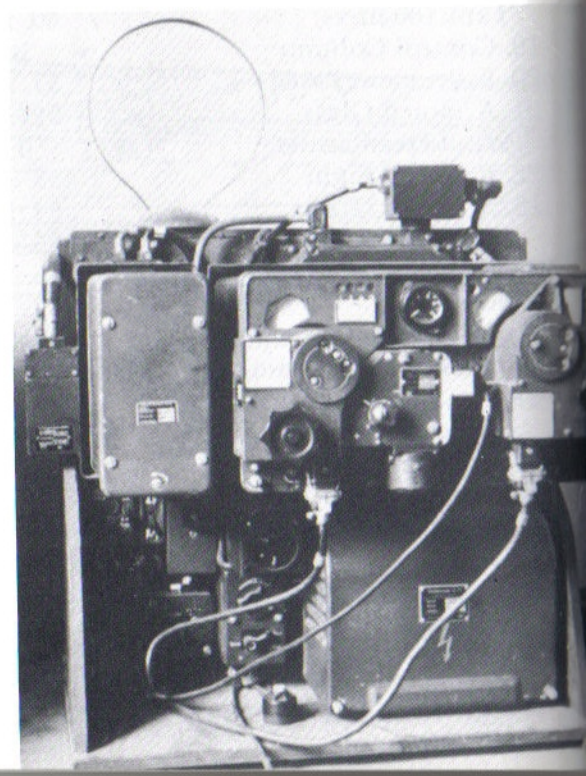
1. Generator Drive Propeller
2. Generator
3. Compressed Air Bottle
4. Battery and Electronic Pacs
5. Cockpit Ventilation Intake
6. Armored Nose Cone
7. Accumulator Pressurizer
8. Airvent for Cockpit
9. Radio Pack FuG 25a
10. Rudder Control Assembly
11. Compressed Air Point
12. Linkage of Combined Aileron and Elevator
13. Steering Relays
14. Flying Control Assembly Box
15. Rudder Pedals
16. Radio Turning Controls
17. Turning Shaft
18. Port T-Stoff Cockpit Tank (60 liters)
19. Control Column
20. Instrument Panel
21. Armored Glass Windscreen Struts
22. Revi 16B Sight
23. Armored Glass Windscreen - 90mm
24. Armament & Radio Switches
25. Pilot Seat
26. Back Armor - 8mm
27. Head & Shoulder Armor -13mm
28. Frequency Selector
29. Headrest
30. Cabin Roof
31. Airvent
32. Fixed Leading Edge Wing Slot
33. Trim Flap
34. Fabric Covered Elevon
35. Underwing Landing Flap
36. Inboard Trim Flap
37. FuG 16ZY Radio Mast
38. T-Stoff Filler Cap
39. Unprotected T-Stoff Fuselage Tank (1040 liters)
40. Cockpit Glazing
41. Ammunition Case (60 rounds)
42. Ammunition Case (60 rounds)
43. Ammunition Feed Chute
44. T-Stoff Start Tank
45. Rudder Direction Lever
46. C-Stoff Filler Cap
47. HWK-509 A-1 Turbine
48. Frame of the Main Rocket Motor
49. Rudder Control Rod
50. Rudder Control Rocker Bar
51. Aerial Matching Unit
52. Attachment Tailfin/Fuselage
53. Tailfin Construction
54. Rudder Horn Balance
55. Upper Rudder Linkage
56. Rudder Frame
57. Trim Flap
58. Rudder Rod
59. Rod Fairing
60. Attachment Point Fuselage/Rear Rudder Spar
61. Combustion Chamber for Rocket Motor
62. Tailpipe
63. Rudder Root Fairing
64. Rocket Thrust Orifice
65. Vent Pipe Outlet
66. Hydraulic Cylinder
67. Lifting Point
68. Tailwheel Fairing
69. Steerable Tailwheel
70. Axle Fork
71. Tailwheel Oleo
72. Tailwheel Steering Linkage
73. Tailwheel Steering Lever
74. Wing Root Fillet
75. Combustion Chamber Bracing
76. Weapon Loading Mechanism
77. Trim Flap Steering Motor
78. Worm Gear
79. Trim Flap Mounting
80. Inboard Trim Flap
81. Elevon Mounting
82. Elevon Rod
83. Elevon Actuator Rod
84. Elevon
85. Rear Wing Spar
86. Trim Flap
87. Outside Joint of Elevon
88. Wingtip Bumper
89. Wing Spar
90. Fixed Leading Edge Wing Slot
91. Elevon Actuator Linkage
92. Port Underwing Flap
93. Actuating Linkage in Front Wing Spar
94. Front Wing Spar
95. FuG 25a Antenna
96. Pilot Tube
97. Wing Tank Cover
98. C-Stoff Leading Edge Wing Tank (73 liters)
99. Gun Cocking Compressed Air Bottles
100. Main C-Stoff Tank (173 liters)
101. 30mm MK-108 (Cannon)
102. Expended Shell & Link Chute
103. Gun Mounting Frame
104. Pressure Tight Gun Control Passage
105. Blast Tube
106. Cannon Adjust Mechanism
107. Cannon
108. FuG 25a IFF
109. Tow Bar Attachment Point
110. Compressed Air Ram for Landing Skid
111. Hydraulics & Compressed Air Pipes
112. Landing Skid Pivots
113. landing Skid Mounting
114. Landing Skid Mounting Brackets
115. Mechanism for Jettisoning Trolley (Dolly)
116. Landing Skid
117. Take-off Trolley Frame
118. Take-off Trolley Retaining Lugs
119. Take-off Trolley Alignment Pins
120. Low Pressure Tire



Below left:
This frontal view gives a good impression of the racy look of the Me 163B.

Left:
View from the right into the cockpit of the Me 163B. At the middle of the picture one can see the gunsight (Revi). In front of the gunsight is the armored glass wind screen of 5cm thickness with integrated compass. The lever on the left would actuate the emergency release of the canopy.

Below:
Test assembly of the FuG 16ZY, which was installed in the Me 163B with approach module and loop antenna.



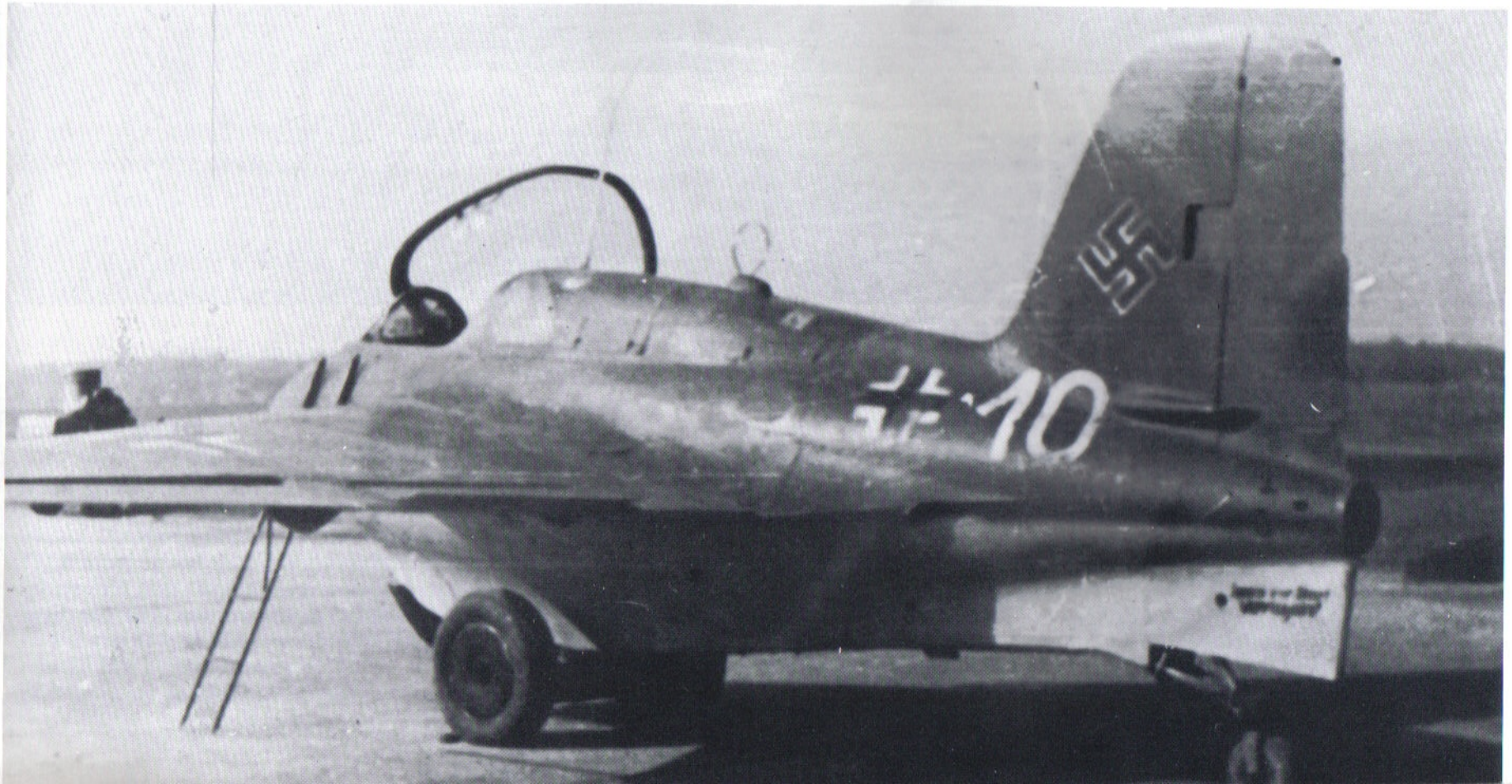
The powerplant consisted of the rocket engine HWK 109-509 made by the Walter Company in Kiel. The fuel tank used was C-Stoff, consisting of Methyl Alcohol, Hydrazine Hydrate and water, as well as T-Stoff, consisting of pure Hydrogen Peroxide.

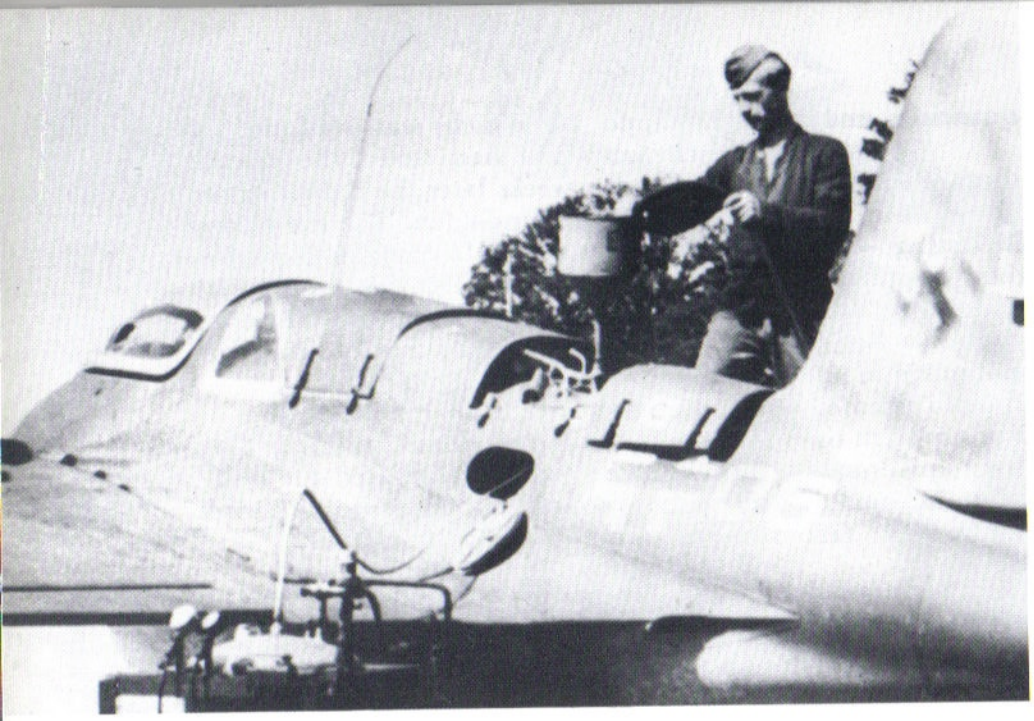
On June 26, 1942, Heini Dittmar made the maiden flight, being towed, in the Me 163 BV1. As before, in the Me 163A at first, no engine was available due to problems of the manufacturer with the new power plant technology. As a stop gap measure, an Me 163A engine was used in the first Me 163B test aircraft. Later the proper engine could be manufactured in sufficient quantities, and it proved to be relatively safe.

In the beginning of 1944, the production of the Me 163B was in high gear. With the seventy available aircraft all testing — for flight behavior, altitude flights, weapon tests and powerplant testing — was done satisfactorily.

Subsequently, the high command of the Luftwaffe (OKL) gave the order to assemble the first operational fighter group with the Me 163B rocket aircraft. The first squadron of JG 400 was assembled in Bad Zwischenahn. It consisted of former members of Test Commando 16, which was stationed in Zwischenahn and had tested the aircraft before. A few weeks later the fighter group moved to Wittmundhafen. There a second squadron was added. In May 1944, the unit consisted of thirteen rocket fighters of which only one aircraft was operational. The other aircraft were in various stages of being out-

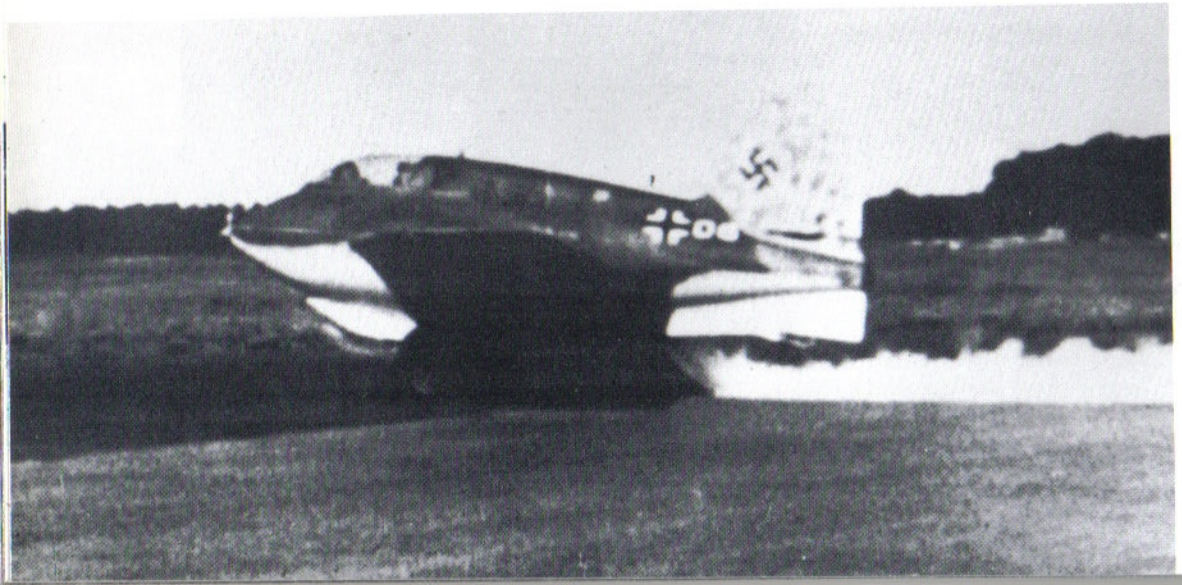
Combat model of the Me 163 in Brandis. The fairing of the tail-wheel, as on the V models, is missing. It was deleted due to a tendency to collect dirt which would hinder the functioning of the tail-wheel.





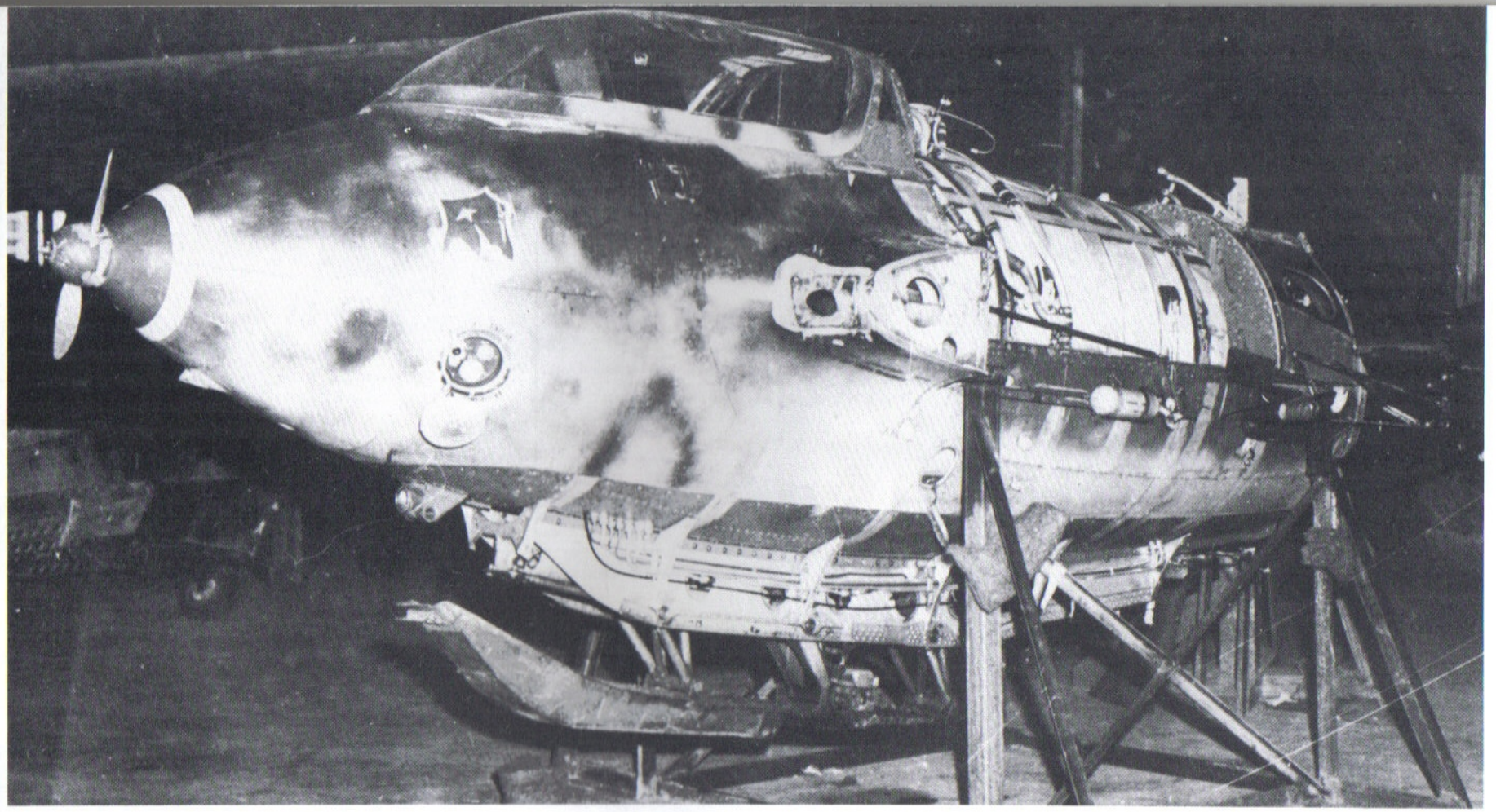
Above left:
Fueling of the rocket fighter with C-Stoff, a mixture of Hydrazine-Hydrate, Methyl-Alcohol and water with Potassium Cupro-Cyanide. The second fuel component, Hydrogen Peroxide (T-Stoff) was not allowed to touch the C-Stoff — this pairing would cause an immediate explosion.

Above right:
Starting of the steam turbine which would drive the pumps that would circulate the fuel for the aircraft. The accompanying steam can be clearly seen in the picture.



Left:
An Me 163B with running turbine shortly before take-off.

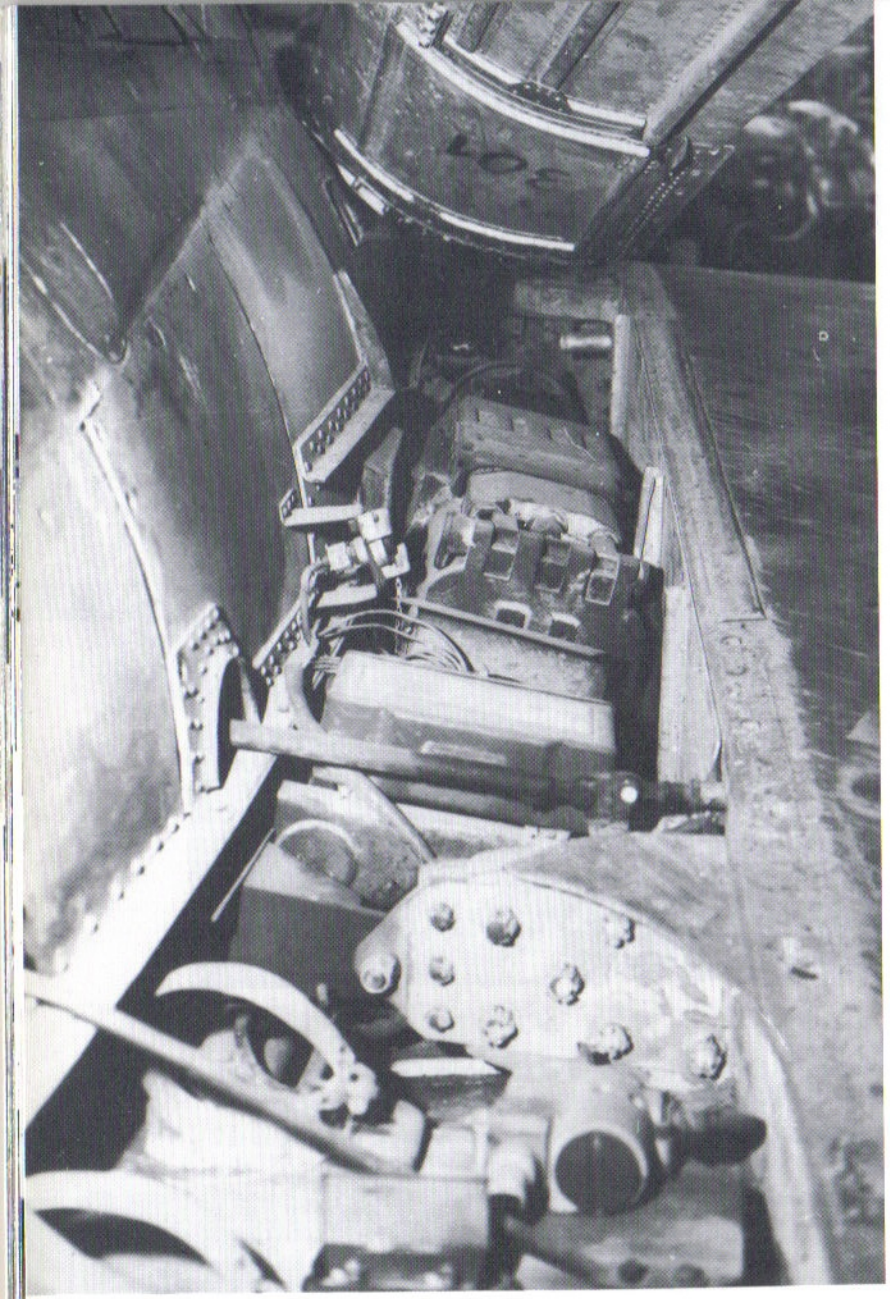
Top right page:
A 163B of JG 400 minus wings, fairings and rudder. This photo shows a good view of the skid, the hydraulics and only the compressed air bottle, which was used to cock the cannon is still mounted. The opening in the nose was used to fill the oxygen system for the pilot.



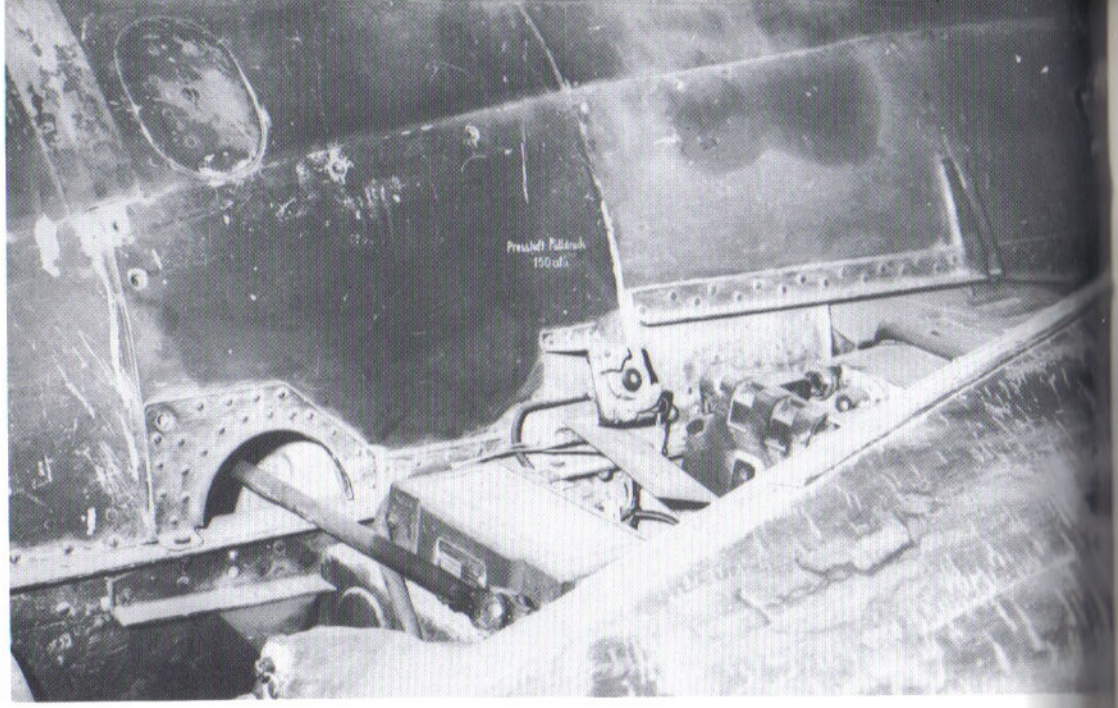
fitted. A month later the second squadron received two Me 163B's from the first squadron JG 400.

In the meantime, the Me 163B was frequently sighted by allied pilots. The reports would then mention a very fast tailless flying object. An example is the report of a P-51 "Mustang" pilot. He saw on July 28, 1944, while he was engaged in a fighter cover action for B-17 bombers, two Me 163B fighters in the vicinity of Merseburg. The formation was flying at an altitude of 24,000 feet, the fighter cover in close proximity and a little higher. The two Me 163's approached the formation from the rear at approximately 31,000 feet. After sighting the 163's, the Mustang pilots released their auxiliary (drop) tanks and climbed higher. It did not look as if the two rocket fighters wanted to attack. They flew a left turn and climbed higher with an angle of eighty degrees. The P-51 pilot was very surprised about the climbing ability and the speed. He reported at the debriefing about the Me 163 as a "wonderful thing in the air." The Mustang pilots recognized that their own aircraft, when compared to the Me 163 and the Me 262 turbojet fighter, were at a disadvantage and outmoded. The reason for the unsuccessful Me 163 attack on the B-17 formations was a miscalculation of the closing speed and faulty ground guidance.

On August 24, 1944, lady luck was smiling for the first time for the German pilots. Siegfried Schubert and another pilot were at readiness in their fighters. After the alarm, they started their engines and took off in an almost vertical climb. They were followed by Hans Bott and Herbert Straznicky in the second formation — altogether, there were

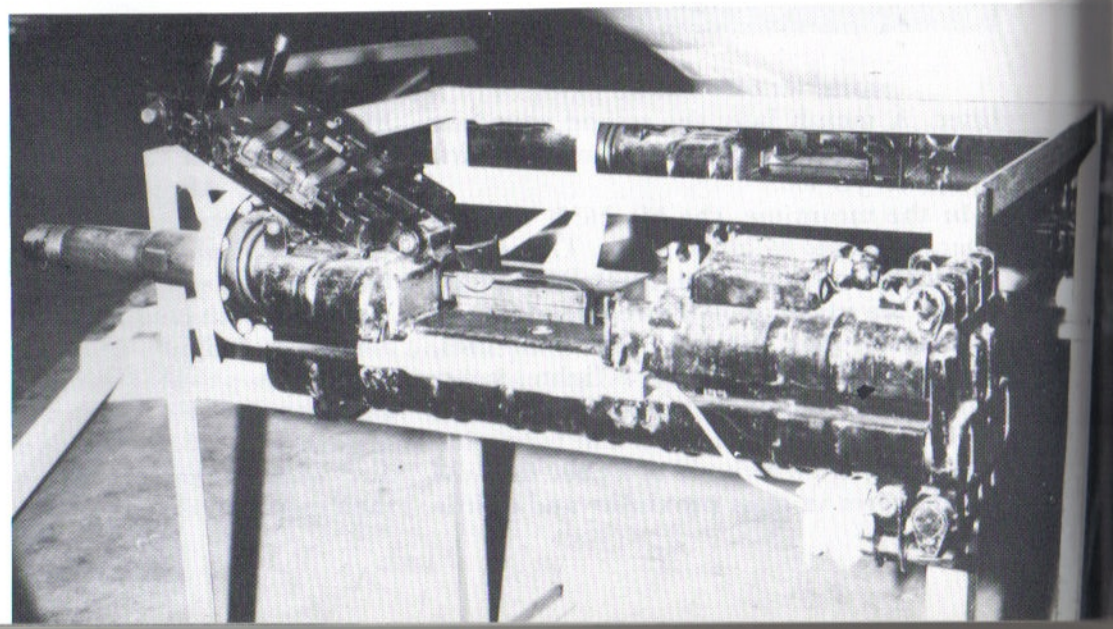


Above:
Seen in flight direction. The fairings for the wing root are removed and one has a good view of the cannon.



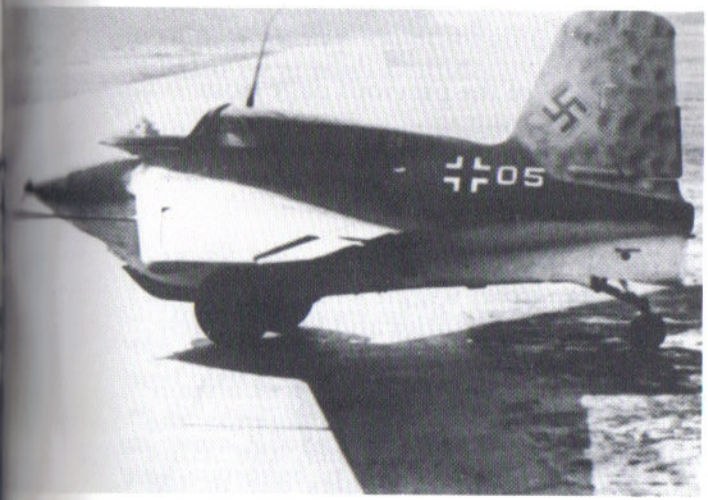
Above:
View of the right fuselage and wing root connection. To the left is the steering linkage and to the right the rear of the MK 108 cannon.

Below:
The dismounted MK 108 cannon of an Me 163B.

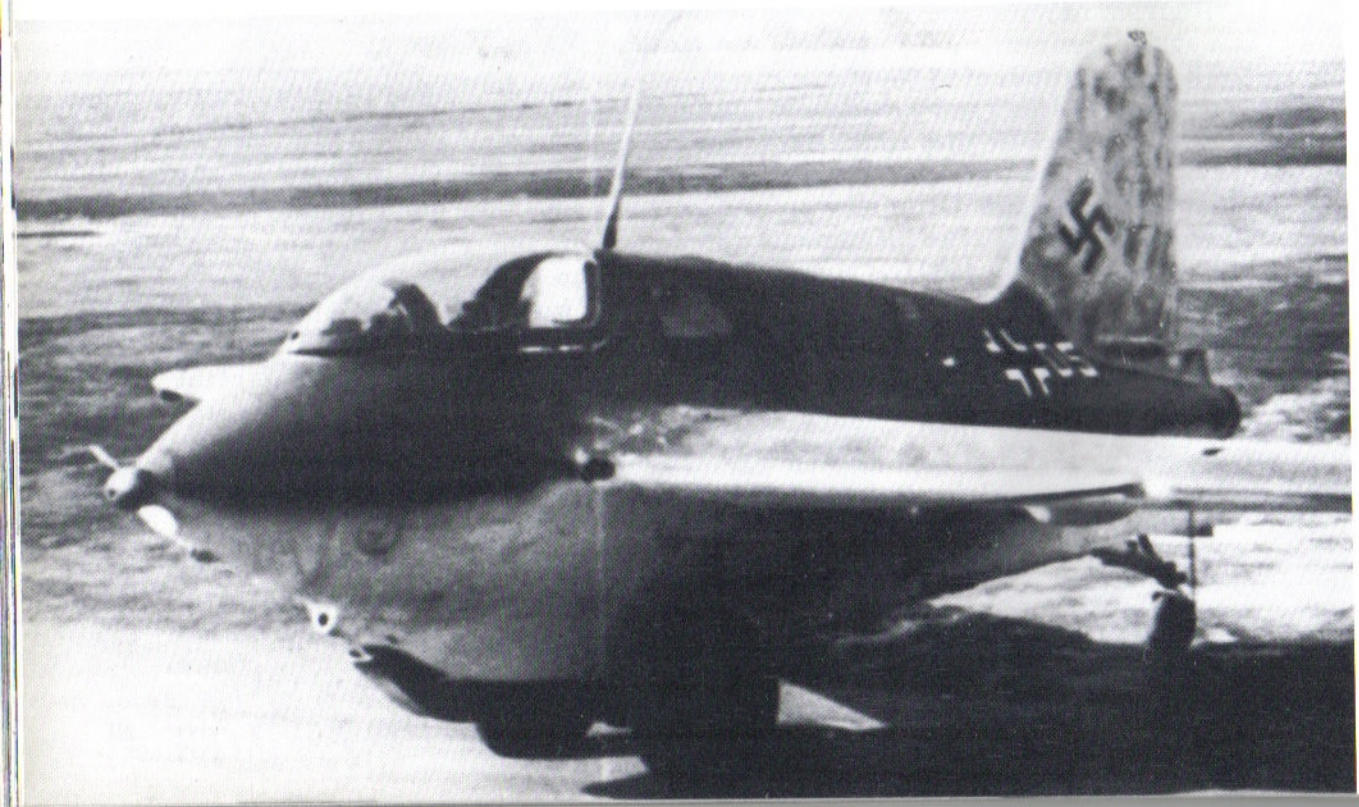


Right:
A production aircraft of JG 400 at the beginning of a take-off run. The white cloud is caused by the steam turbine. The compressibility knots are also visible in the exhaust flame.

Below:
A production model of the Me 163B in standard camouflage paint.



eight aircraft. At an altitude of 33,000 feet the first formation throttled back and was gliding down to 18,000 feet because they could not sight the enemy. Schubert spotted the first bomber of the 92nd Bomb Group at an altitude of 19,500 feet. He restarted his engine and gained altitude to about 4500 feet above the bomber formation, ready to attack. At 12.07 hours Schubert and his wingman crossed through the enemy formation. Schubert sighted the leading B-17, flown by lt. Koehler, in his gunsight, fired, while he closed almost to ram distance, and noticed hits in the left wing of the "Flying Fortress." The bomber started to roll before it left the formation. With running engine, Schubert climbed to altitude in the ten o'clock direction and crossed over his critical mach-speed. His aircraft reared up but was controlled fast and brought back to a normal altitude. Just below him the 452nd Bomb Group passed, getting ready for their bombing run on the target area of Weimar. The pilot put the Me 163 into a diving attack, aiming at the leading group of the bomber squadron at exactly 12.12 hours. He selected the bomber flying as number three and fired with both cannon. The hits ripped off metal parts of the bomber. The rocket fighter dove by the seriously wounded bomber and selected the rear for his second attack. He registered hits in the right wing and right hand outboard engine, which started to burn. The bomber crew abandoned the aircraft by parachute, their bomber spinning and exploding at about 12,000 feet.

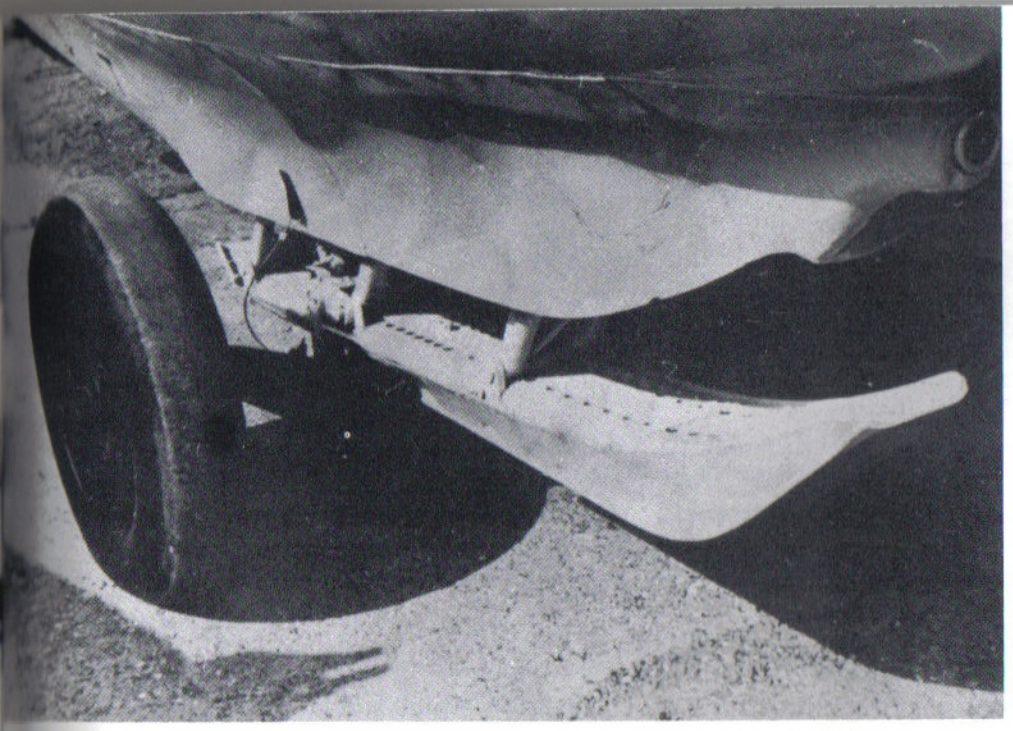


Above left:
Test results of trial firing. The armor glass windshield of the rocket fighter.

Above right:
The skid of the Me 163B without wheels.

Left:
The Me 163B of the previous page from another view point.

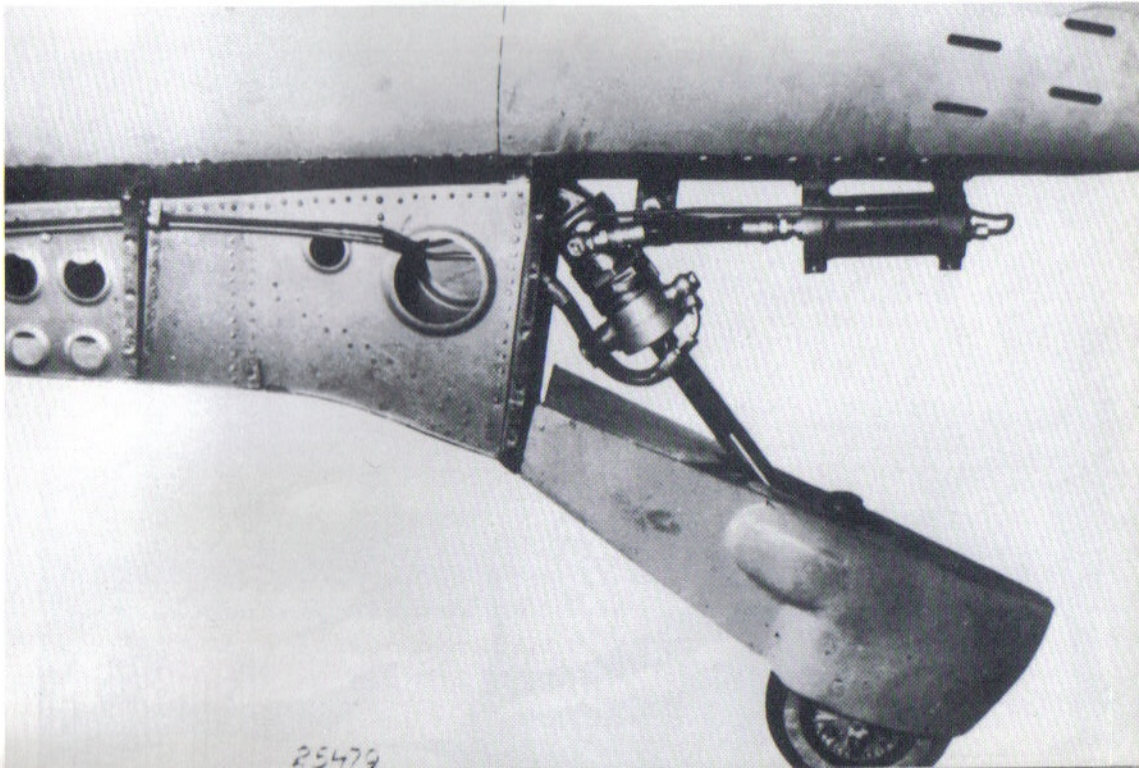
Schubert returned to Brandis with his Me 163B, gave a victory wiggle with his wings to indicate his two victories and landed safely. While his aircraft was being towed back to the hangar, the fighter group was already preparing for another sortie against the returning bombers. Altogether, the Allies lost four four-engine bombers due to 163 action. It was the most successful day of the



Above:
The skid with wheels. The cable coming out of the fairing would release the wheels.

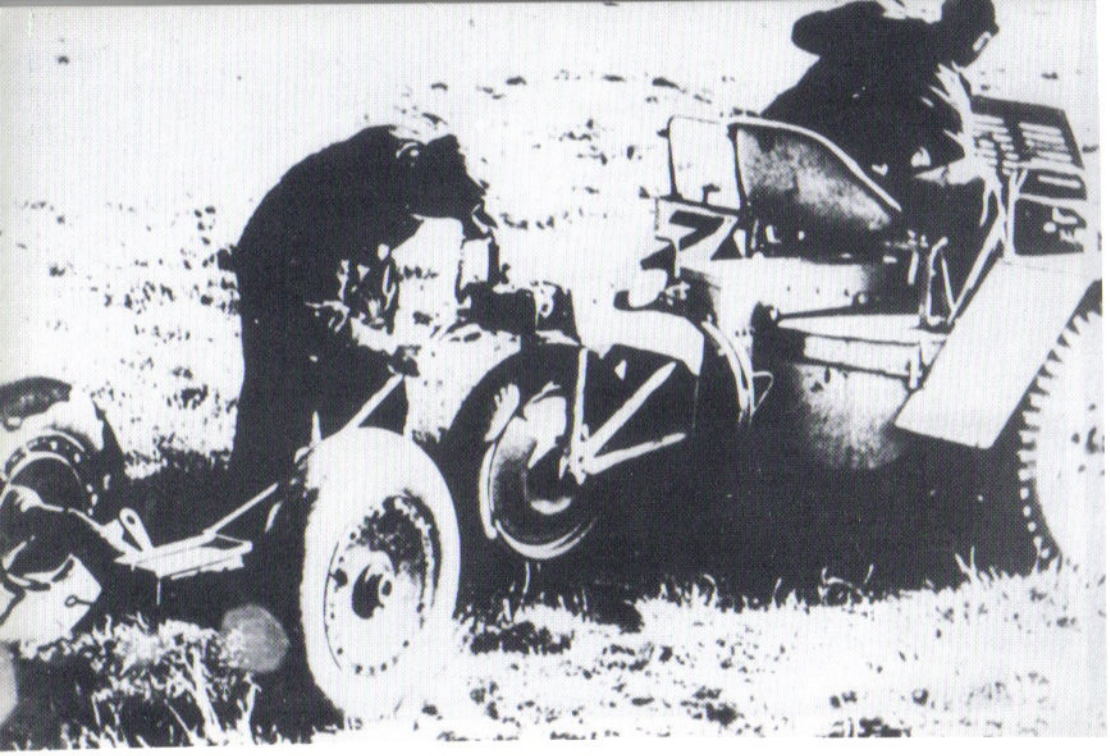
Above right:
Starting with the 51st production model a vent window was installed to prevent fogging and icing due to exhaled air at high altitudes.

Right:
Tailwheel with hydraulics of the Me 163B.



new rocket fighter weapon.

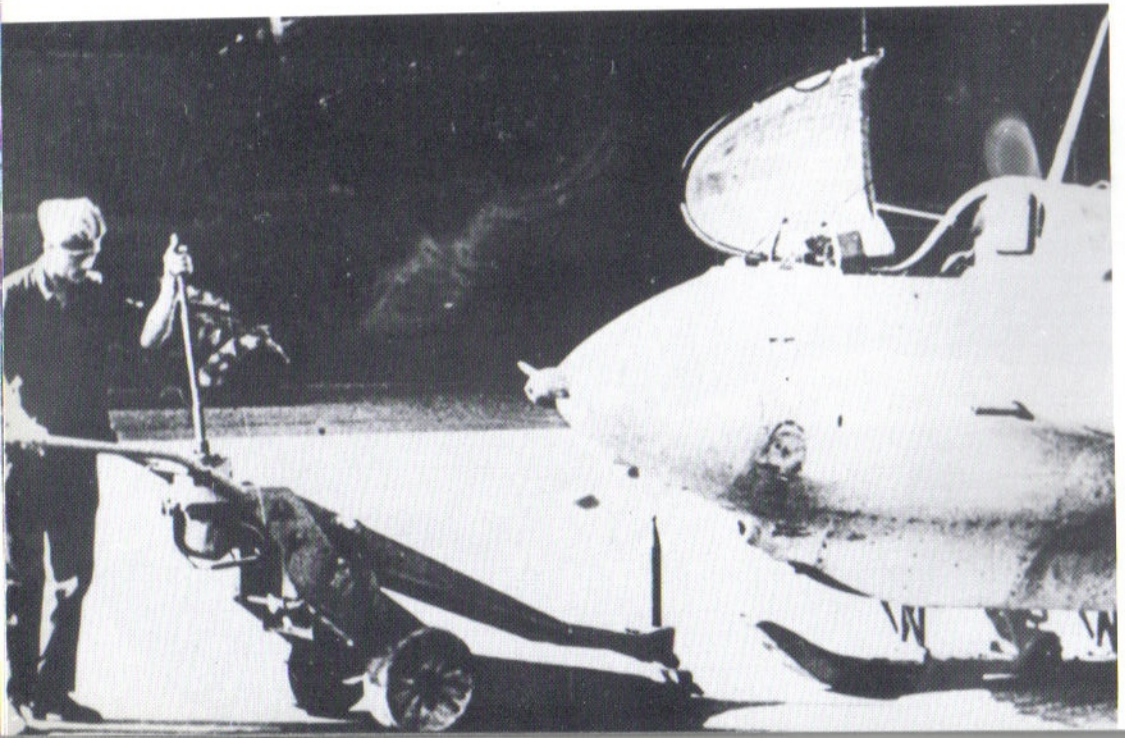
Due to this success, the expansion of JG 400 was pushed ahead. On July 31, 1944, the staff of JGr 400 and the 3.Staffel was created — the latter was stationed in Stargard/Pommerania. Replacement Group 400 was created and stationed at Udet Field with nine Me 163B's and several Bf 110 tow aircraft. However, only 50% of the aircraft were ser-

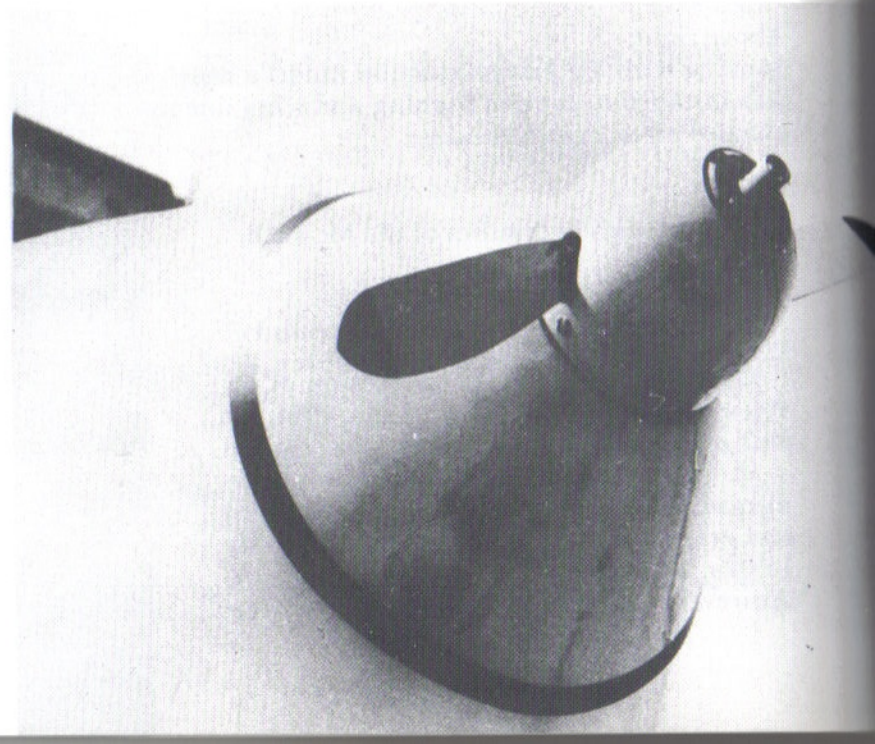


Left:
A take-off dolly is returned to the take-off point by tractor.

Below left:
A lifting device for the nose of the Me 163B to facilitate reinstallation of the take-off dolly.

Below:
Propeller, driving the generator, which was providing electrical power during the flight.

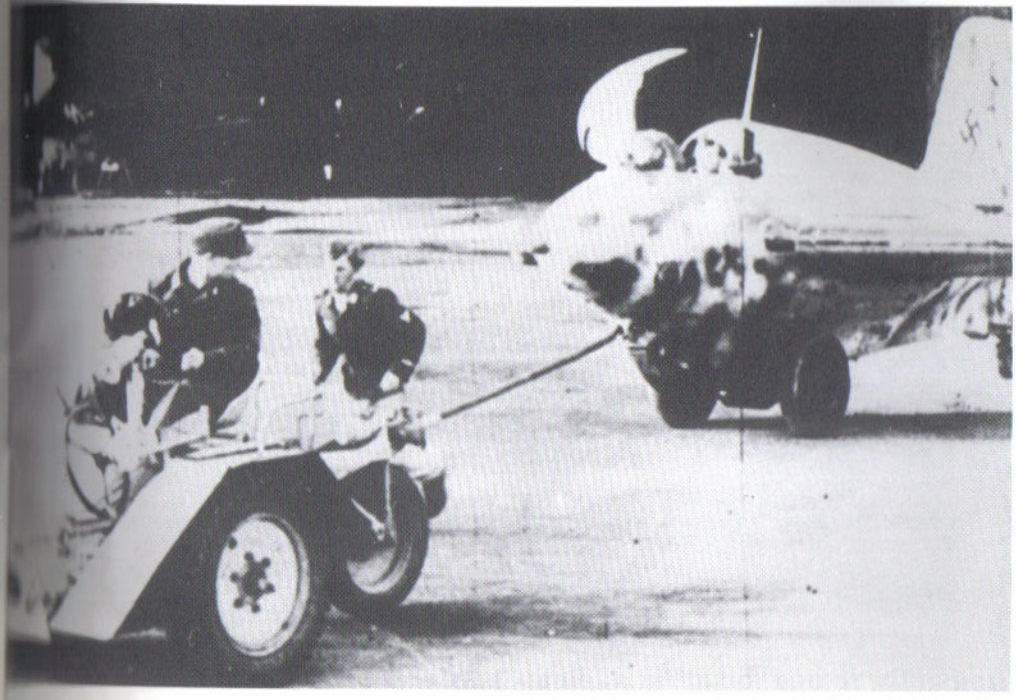


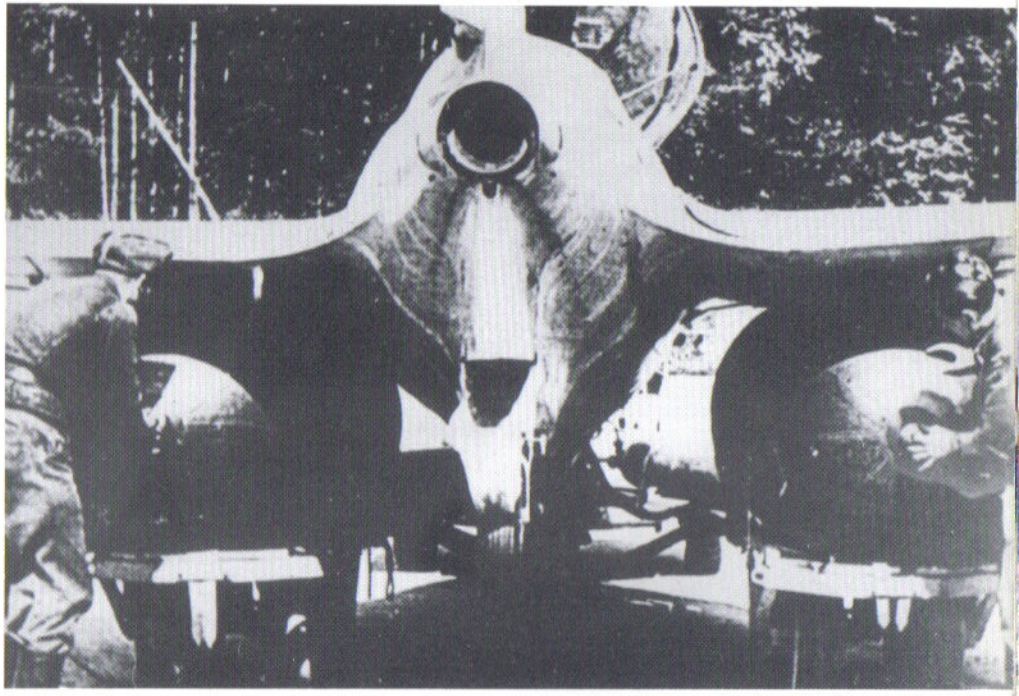


Right:
The aircraft being towed with the old inflatable bag type trailer. The picture shows the Me 163 BV14 at the end of 1943 during gear tests in Lechfeld.

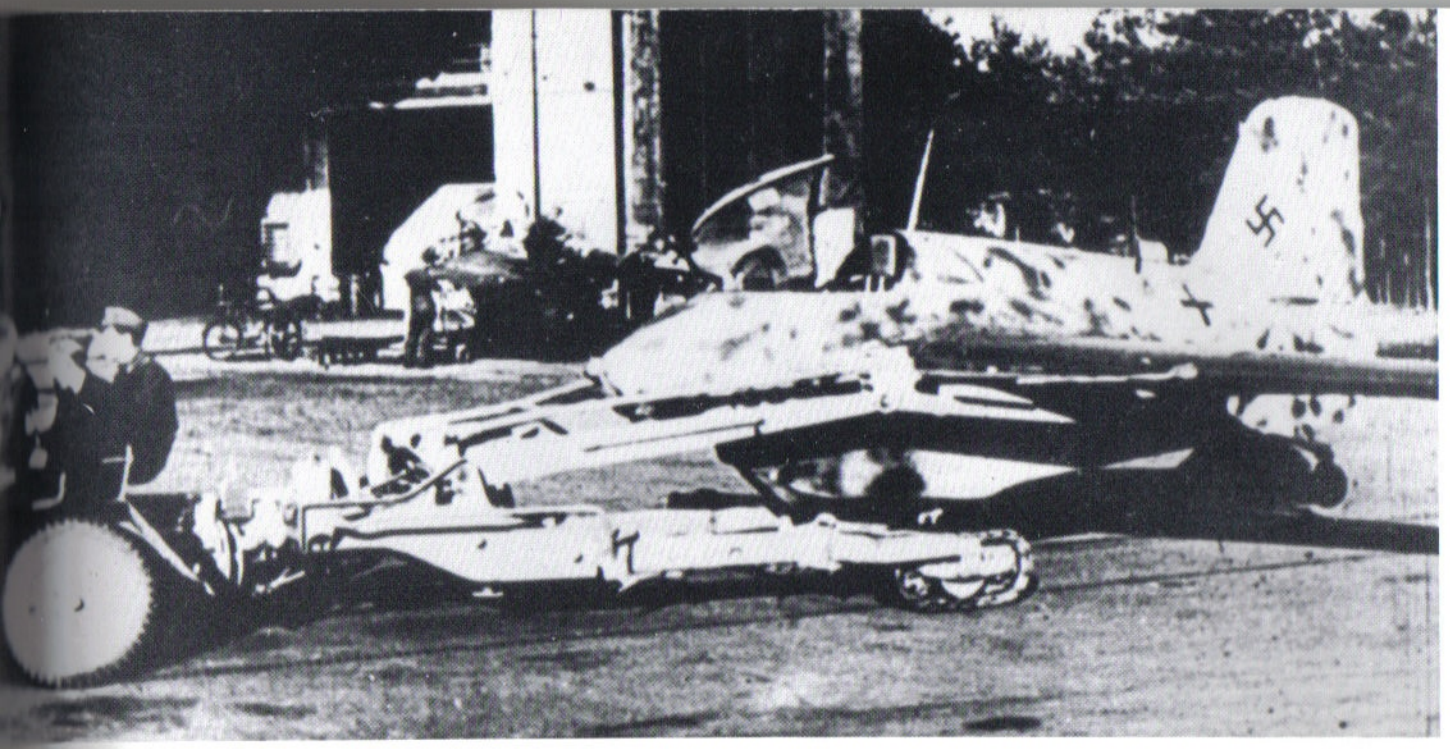
Below right:
Air bags were some times used to lift the aircraft.

Below:
The Me 163B being towed by "Scheuschlepper." The mobility of the aircraft on the ground was limited — it was not able to taxi under its own power.

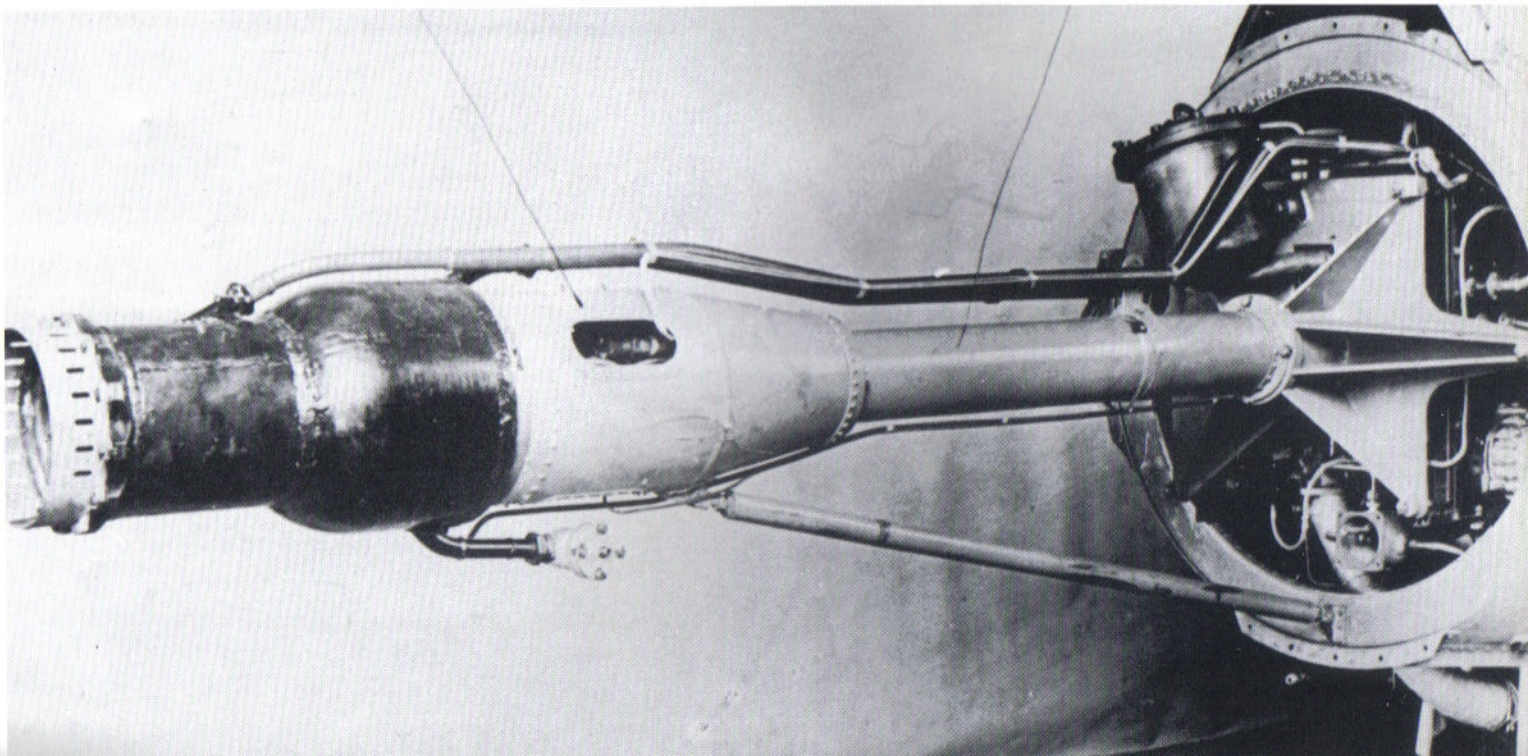




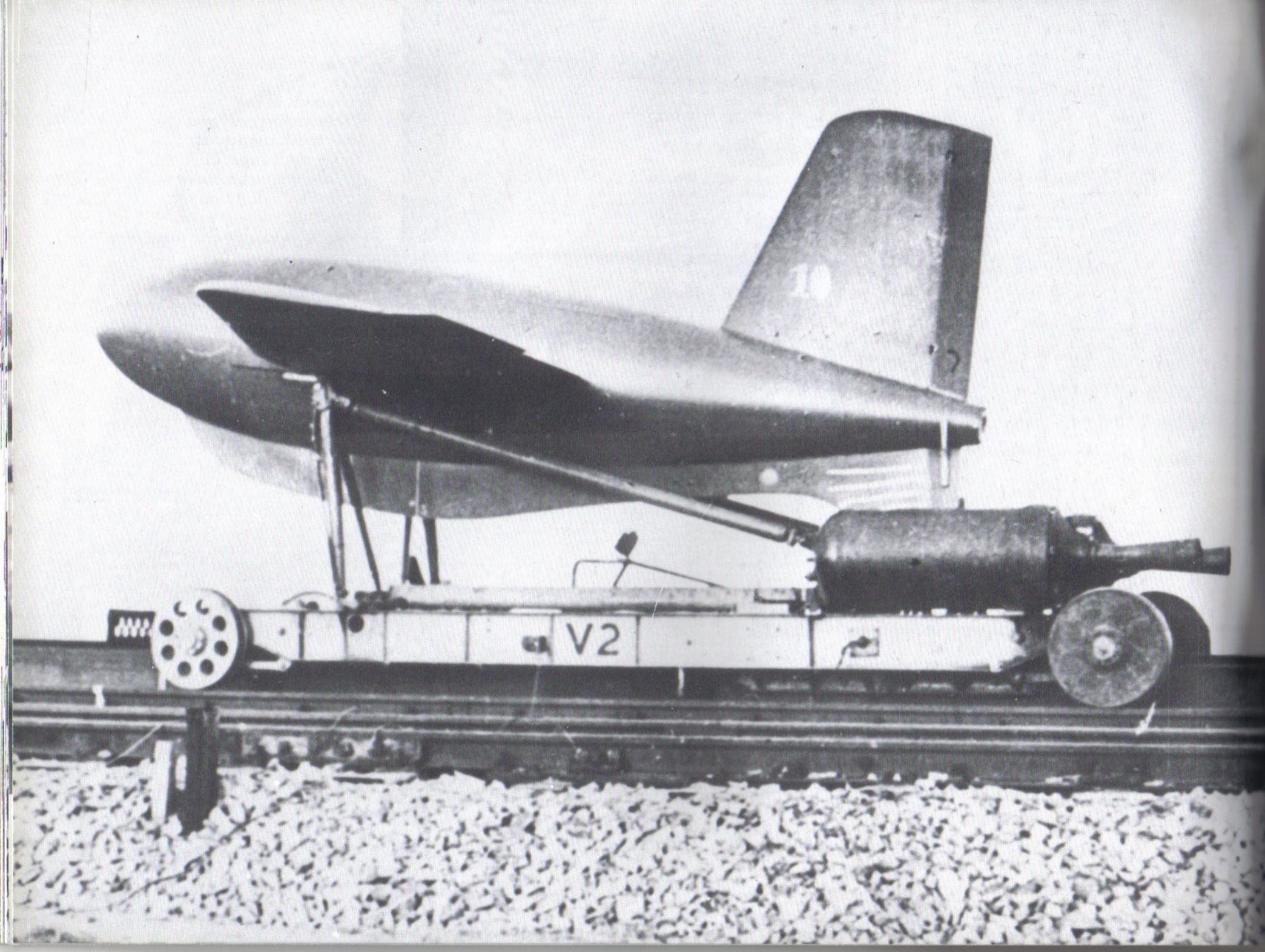
Siesta at JG 400 in Brandis at the end of 1944. On the nose the crest of the second squadron reading: "Like a Flea, But OHO!" (or: "Like a Flea, But WOW!")



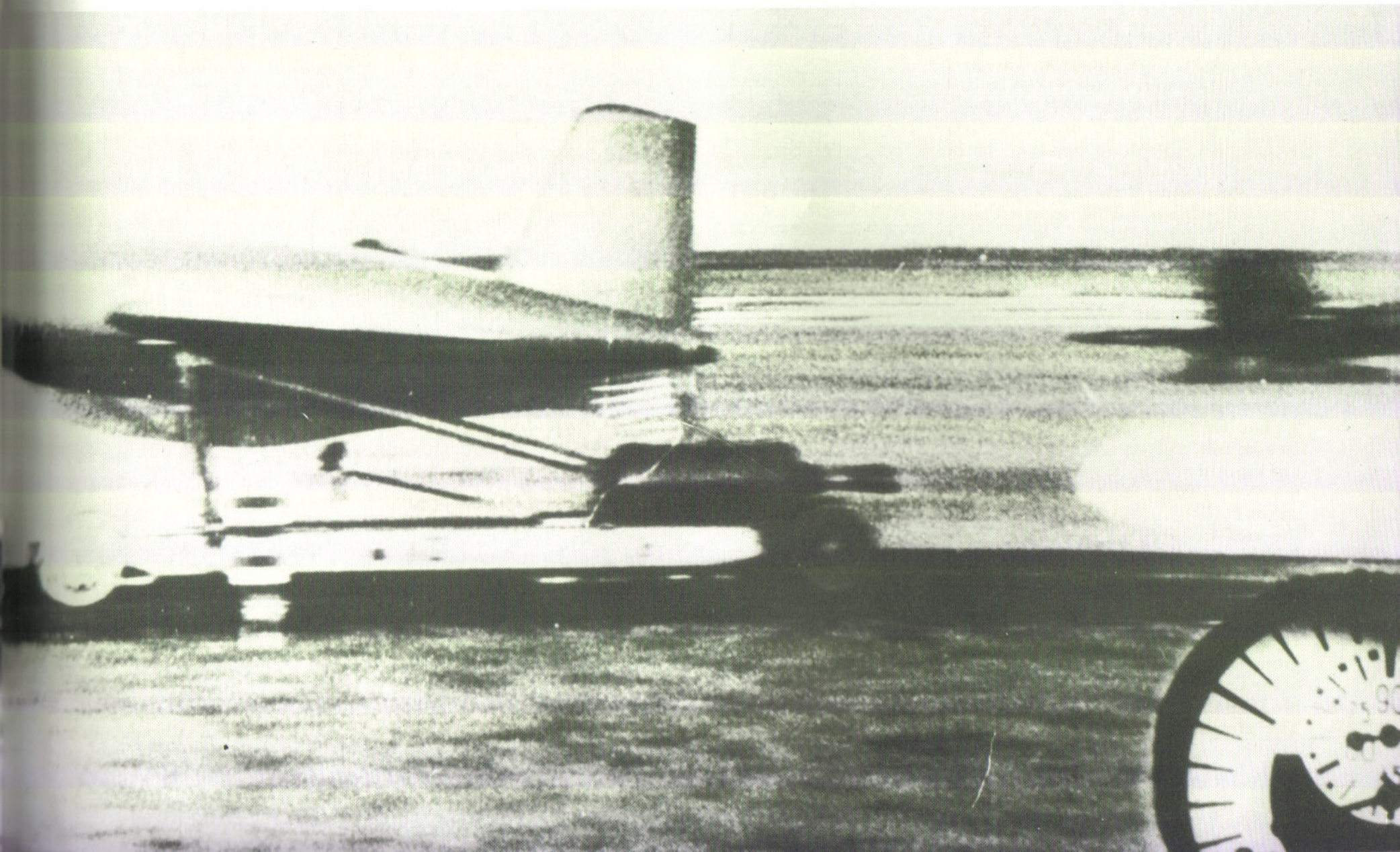
Left:
A variant of the "Scheuschlepper" was able to lift the aircraft under the wings. This made a reattachment of the take-off dolly easy. It also limited the ground operation to only one tow unit.



Right:
The Walter rocket engine HWK 109-509A.


V2

A planned starting device on rails for the 163. The wooden mockup had the weight of a fully loaded Me 163B. The carrying start cart was propelled by two solid fuel rockets. Due to problems with the wheel bearings (high weight and high speed) the testing was suspended.



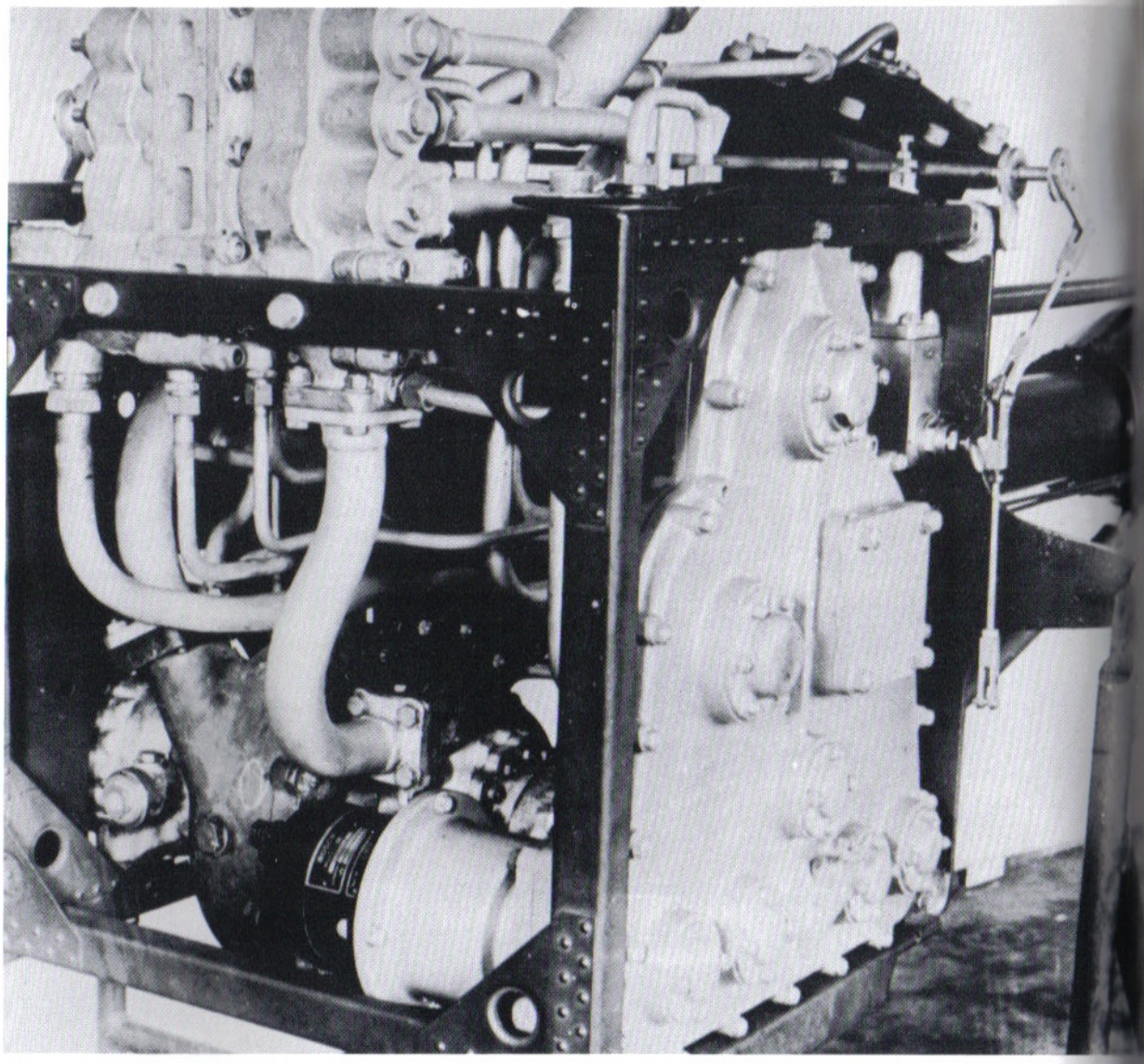
viceable at any one time. In addition, a fourth, fifth and sixth squadron was activated as well as a tow squadron in Kölleda.

In the late summer of 1944, the first and second squadron of JG 400 were stationed in Brandis. There, both squadrons were consolidated as the first group, and at the same time JGr 400 was extended to JG 400. On November 12, 1944, the order was given to create the second group of JG 400, consisting of the third and fourth Staffel. The Replacement Squadron, which was temporarily relocated to Lechfeld, became a Replacement Gruppe. In Sprottau there existed V/JG2 (Replacement) with 13. and 15. Staffel's consisting of parts of EK 16, and were used for pilot training.

In December 1944, JG 400 had 109 rocket fighters of the type 163B available. Aside from the airfield in Brandis, additional airfields were in Leuna, Pölitz and Heydebreck.

In February 1945, JG 400 was of sufficient strength to be able to stop production of the 163B. The aircraft were supposed to be used up and piece by piece replaced by the me 263. A plan that could not be realized any longer. In addition, the fuel problem became more and more urgent and flights were limited to a few. Nevertheless, there were additional successes. I/JG 400 could book three victories in the area Leipzig-Halle-Magdeburg against B-17 bombers.

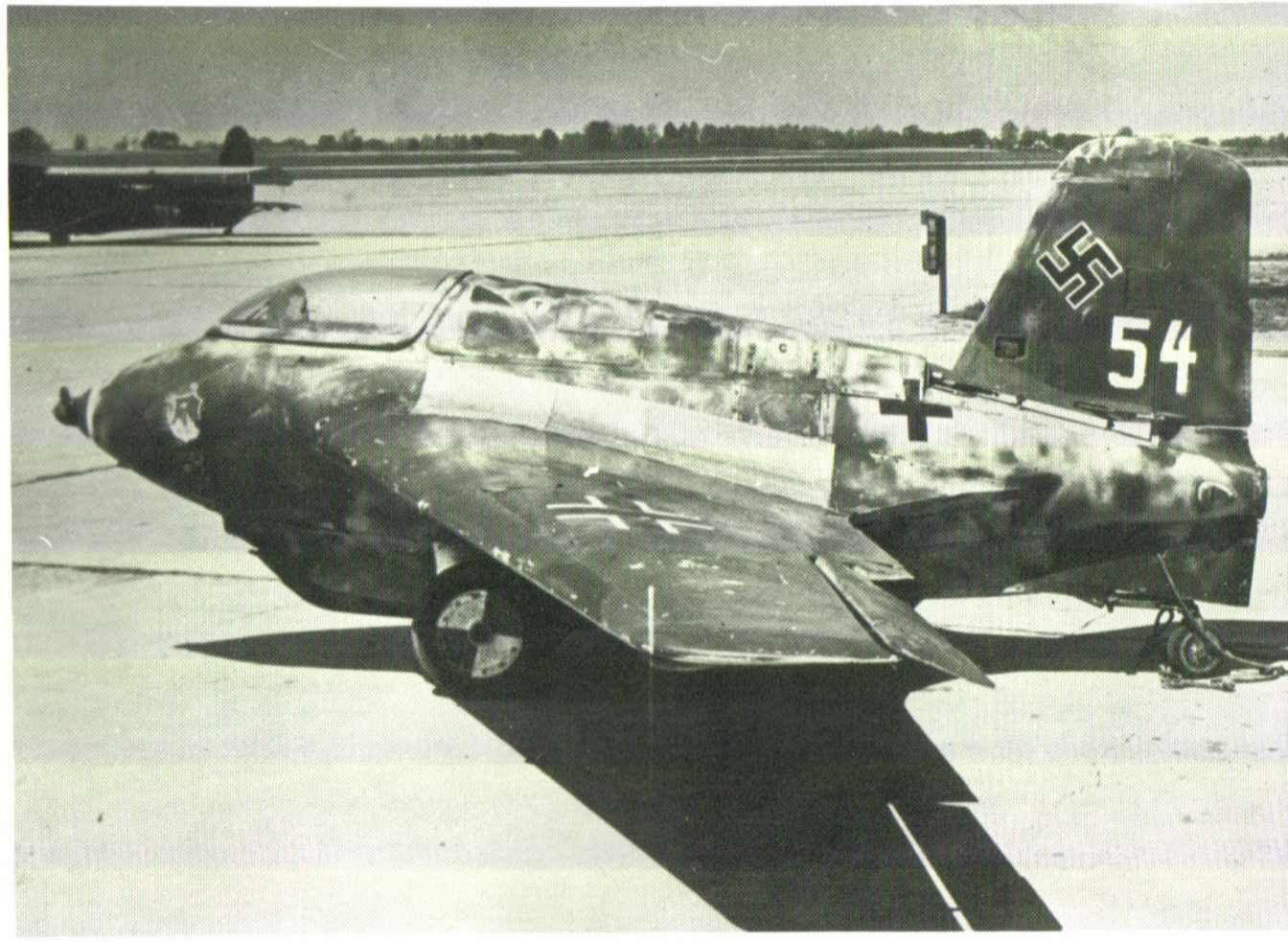
In April 1945, the strength of I/JG 400 was thirty-two Me 163B's, and the second group had thirteen aircraft. On March 7 and April 19, the staff of JG 400 and the first and second group were disbanded by the High Command of the Luftwaffe. A typical start and sortie of a Me 163B was done in the following manner: The aircraft would be towed into takeoff



Dismounted HWK 109-509A seen from the front — in good view is the regulator.

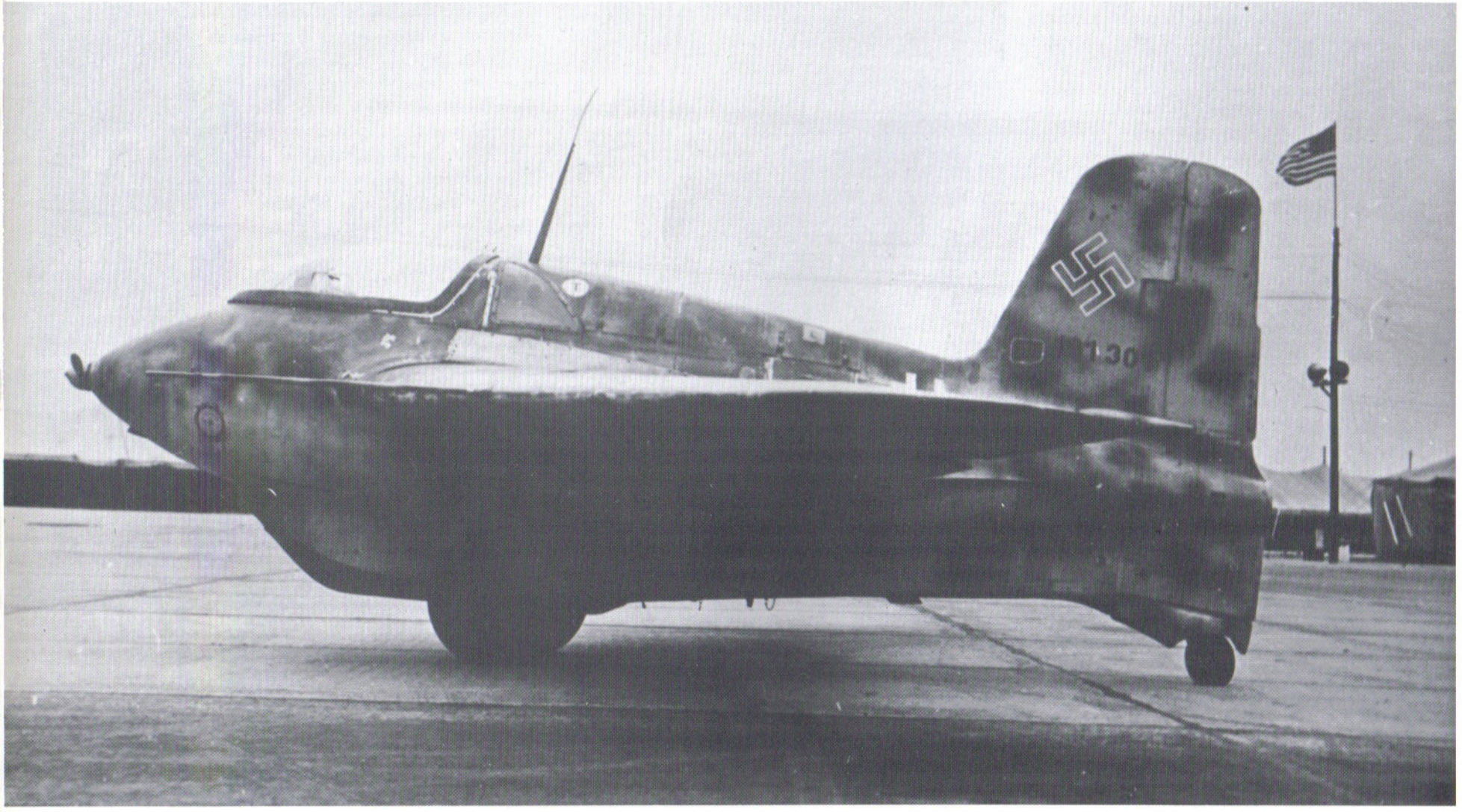
position. There the ground crew would engage the starter. The two centrifugal pumps would press C- and T-Stoff into the burn chamber which would start an explosive reaction and create the necessary take-off power. After releasing the brakes the aircraft would accelerate, lift-off and the take-off dolly would be released at about thirty feet. The aircraft would climb at an angle of about fifty degrees. About 3500-4000 feet below the desired altitude, the pilot would place the throttle in the idle position and the Me 163 would climb by inertia to the planned altitude without engine power. During the change from climbing to horizontal flying any negative acceleration had to be eliminated to prevent a stalling of the engine. To restart, the amount of fuel had to be a minimum of 600 lbs. Without power the aircraft would glide at a speed of 200-250 mph. With power the maximum speed was over 600 mph.

The attack of enemy fighter aircraft was done from the rear at the same altitude using the element of surprise. Against bombers, the attack could be initiated at the same altitude from the front. The attack was supposed to be followed up using ones superior speed until ram distance was reached. The instructions of Sturmgruppen (Assault Fighters) were to be followed. The instructions requested a kill at the first attack and also requested to go as close as possible without regard for the pilot's safety. The pilot was to then climb out in order to be able to initiate another attack from above. After the flight, the aircraft landed on its skid. Before landing the quick fuel release was initiated to prevent an explosion due to remaining fuel in the tanks.

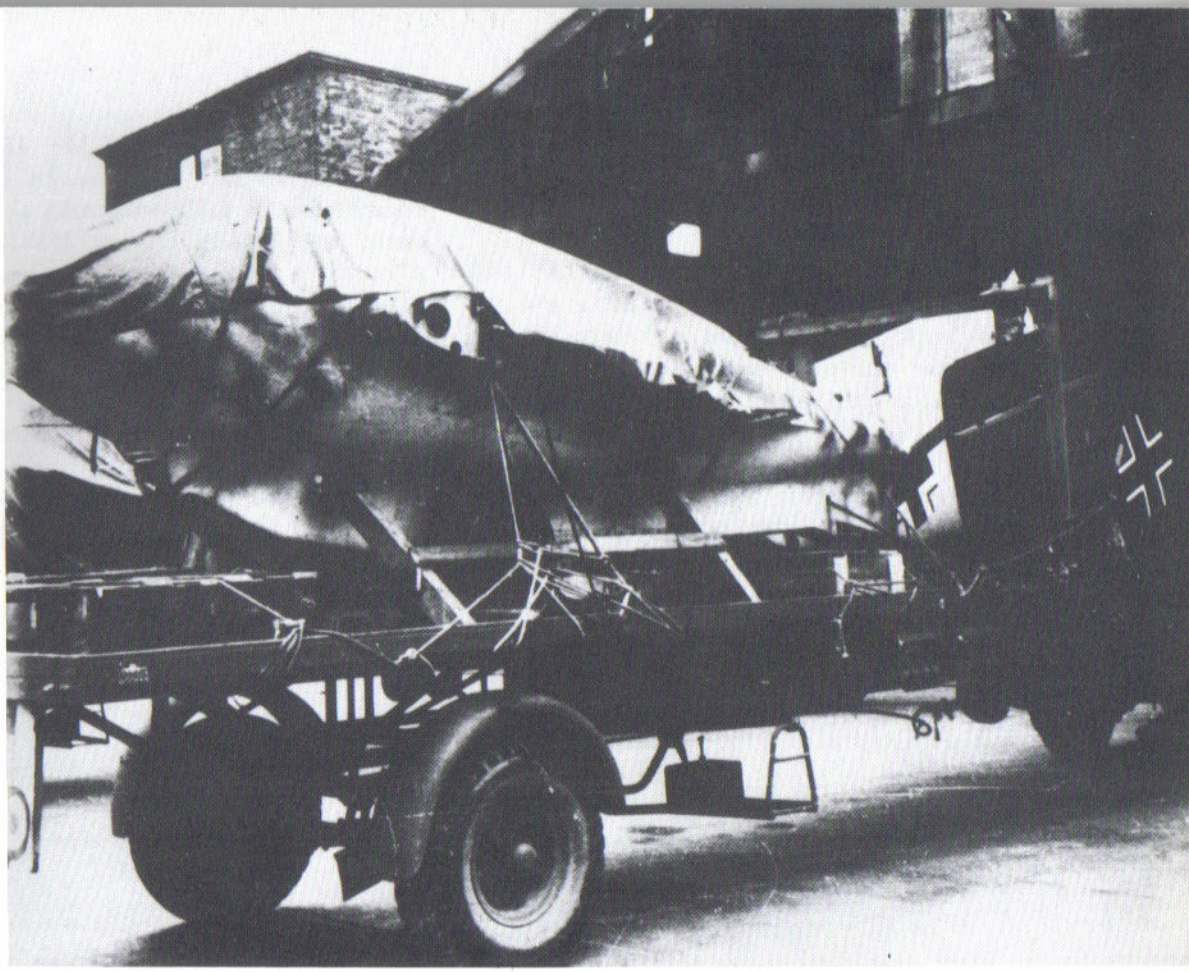


One of the two Me 163 B's shipped as booty to the USA.

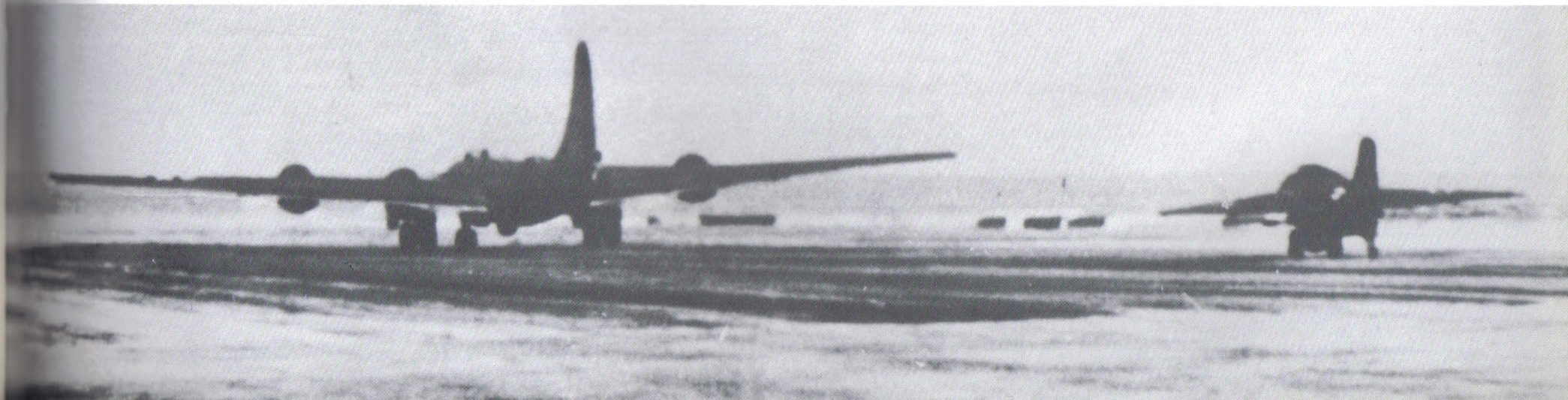
The other Me 163B shipped to the USA and used for instruction purposes.



Right:
An Me 163B at the end of the war which was prepared for shipment to England. All openings were sealed with tape. The aircraft in the picture belonged to 2. Gruppe JG 400 which was transferred in April via Salzwebel, Nordholz to Husum at which point it capitulated. The British captured thirteen aircraft.



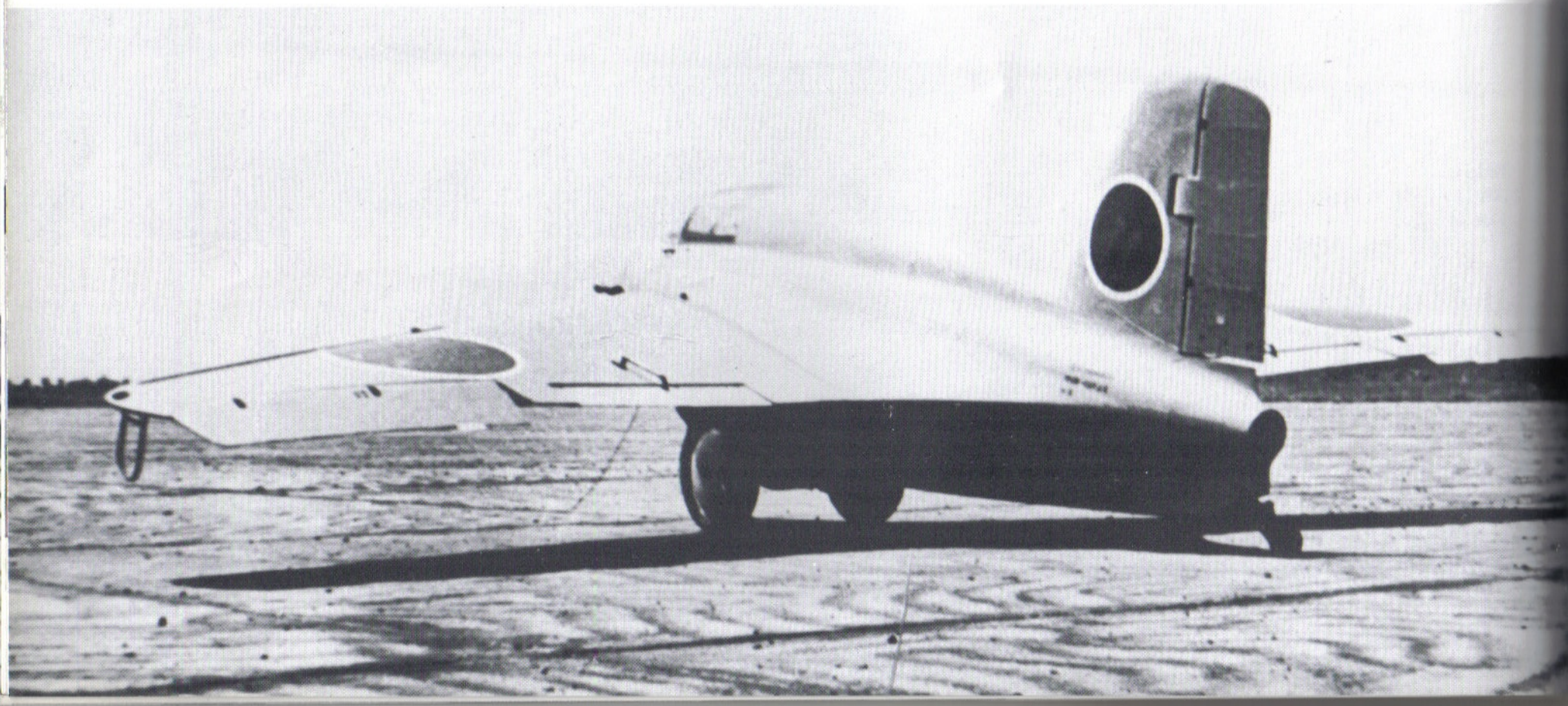
Below:
An Me 163B is being towed behind a B-29 "Super Fortress."

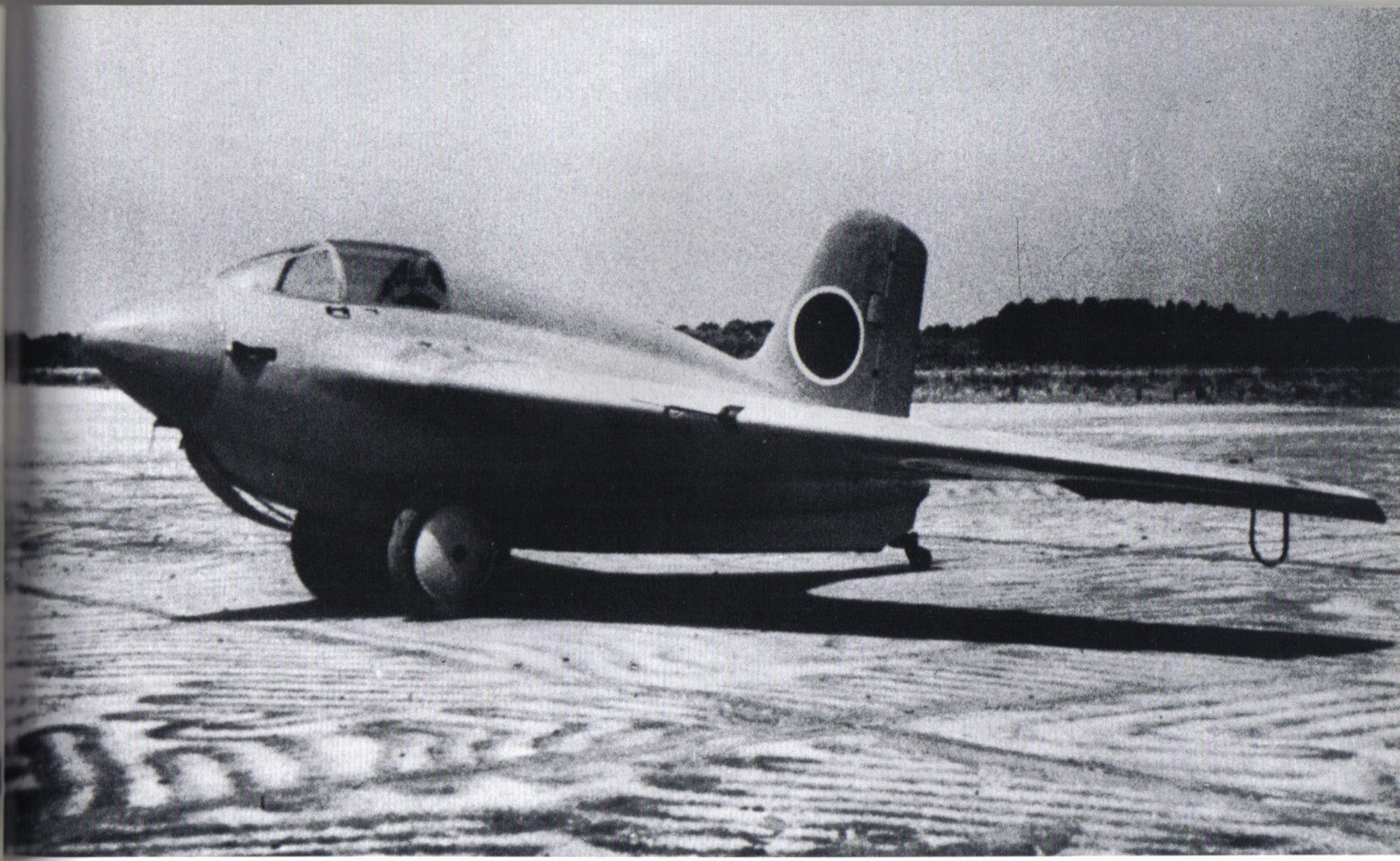


Japanese Derivatives

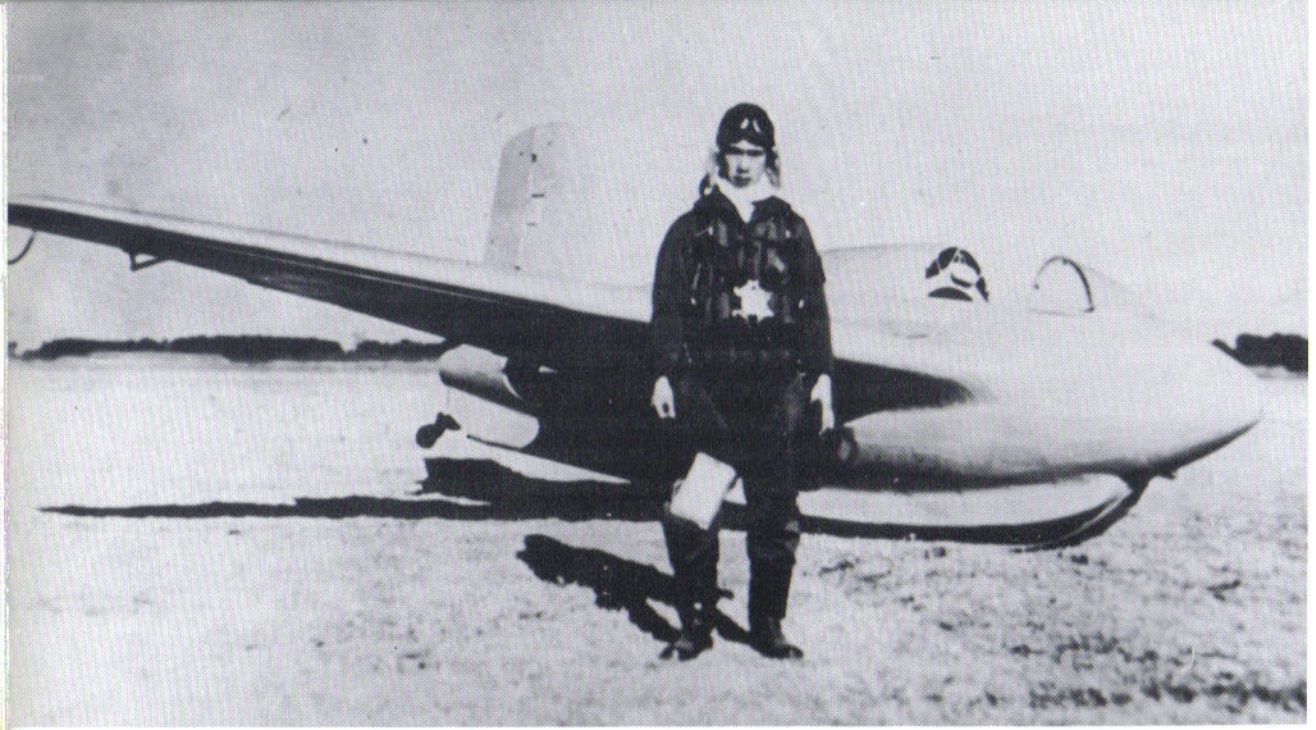
The exceptional performance of the Me 163B in regard to speed and climbing ability, brought it to the attention of the Far-Eastern ally of Germany, Japan. They were looking for a successful weapon to battle the high-flying B-29 Super Fortress. The rocket fighter was excellent for such a purpose. The Japanese army and naval air force contacted the Luftwaffe High Command after they received demonstrations of the Me 163 in Badzwischenahn and Rechlin. In 1944, Japan bought for 20 million marks the license to build the Walter engine HWK 109-509A. According to the contract, a complete Me 163B should be delivered to Japan. Japan in return was to deliver urgently needed raw materials to the Reich. The transport of the goods was to be done in German "Monsun" submarines which were modified for use in the tropics.

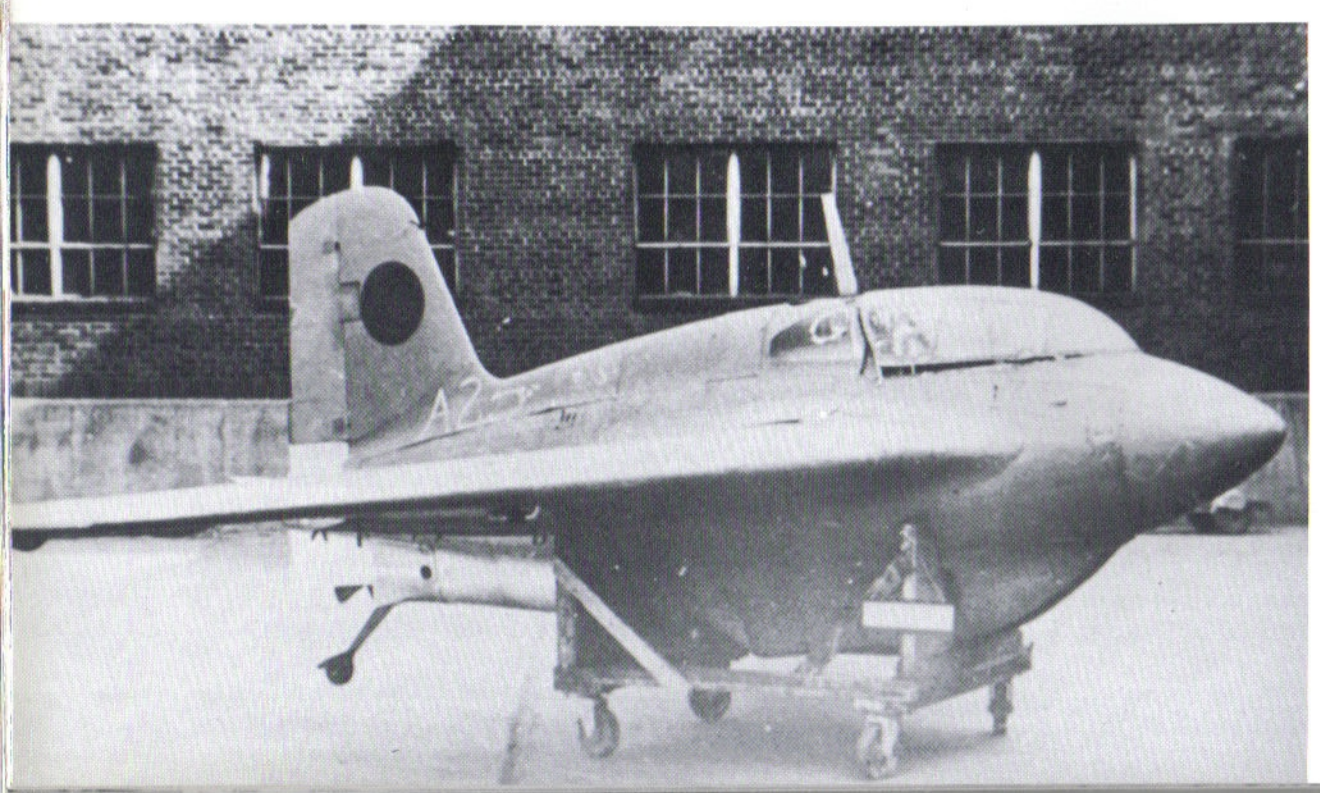
The Mitsubishi company received the order to build the aircraft while the Yoko Suzka company was ordered to manufacture the engine. It was planned that in the spring of 1944 a complete Me 163 including all construction plans and blueprints was to be shipped to Kobe by submarine. However, the U-Boat was sunk on the way to Japan. According to German documents, the submarine was either U-852, Type IX D2 under the command of Käpitanleutnant Heinz-Wilhelm Eck, having been sunk by Allied patrol boats on May 3 south of Ras Hafun in Somalia; or U-68, Type IXC, under the command of Oberleutnant Zur See Albert





This page and opposite:
The MXY 8 Akigusa was a glider used in the training of Japanese navy pilots for the J8 M1. The MXY 8 had no engine. The first airframe was finished in December 1944 and the first start was finished on December 8, 1944 in tow behind a Kyushu K10W1 from the airfield in Ibaragi. The army version used the designator Ku 13.

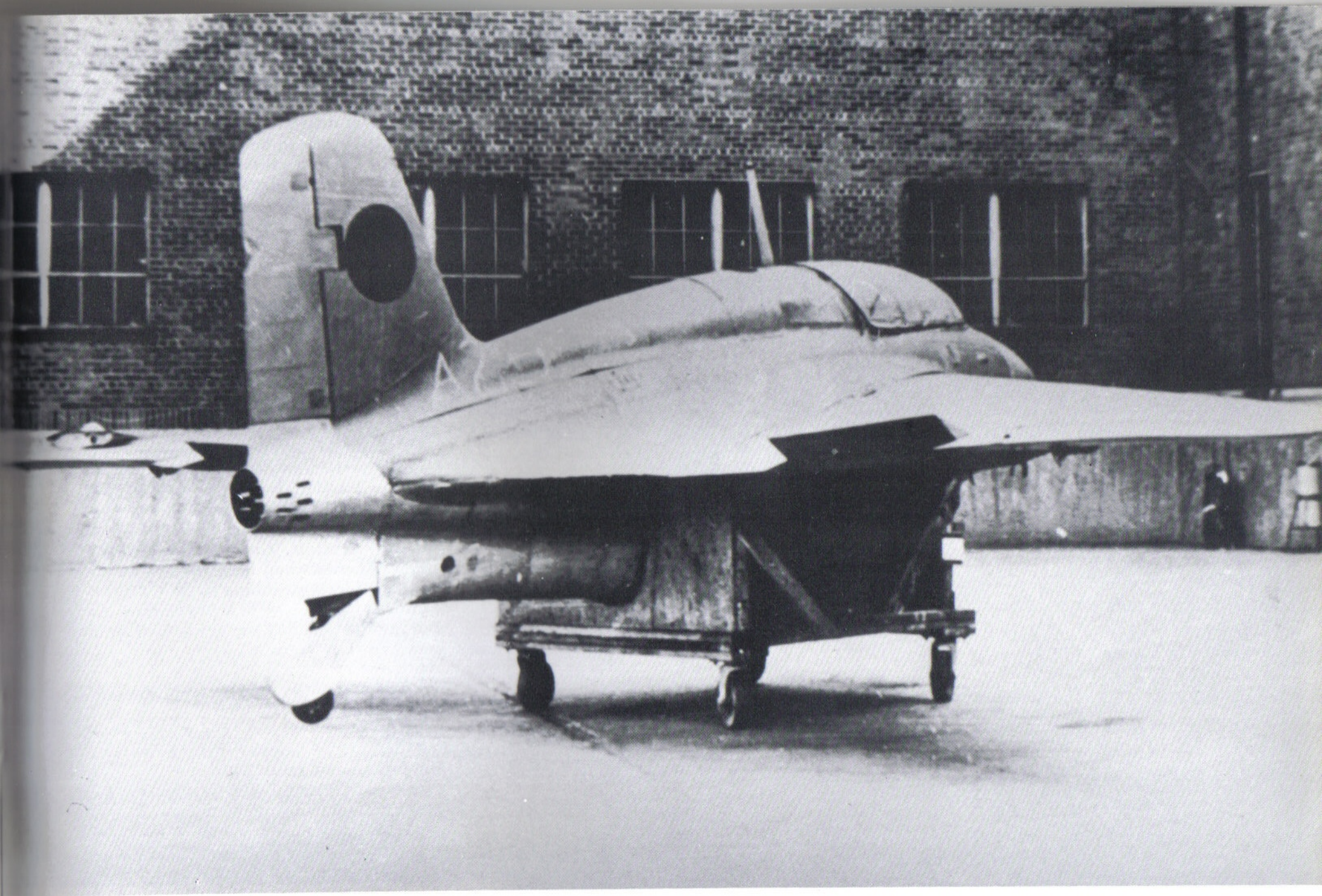


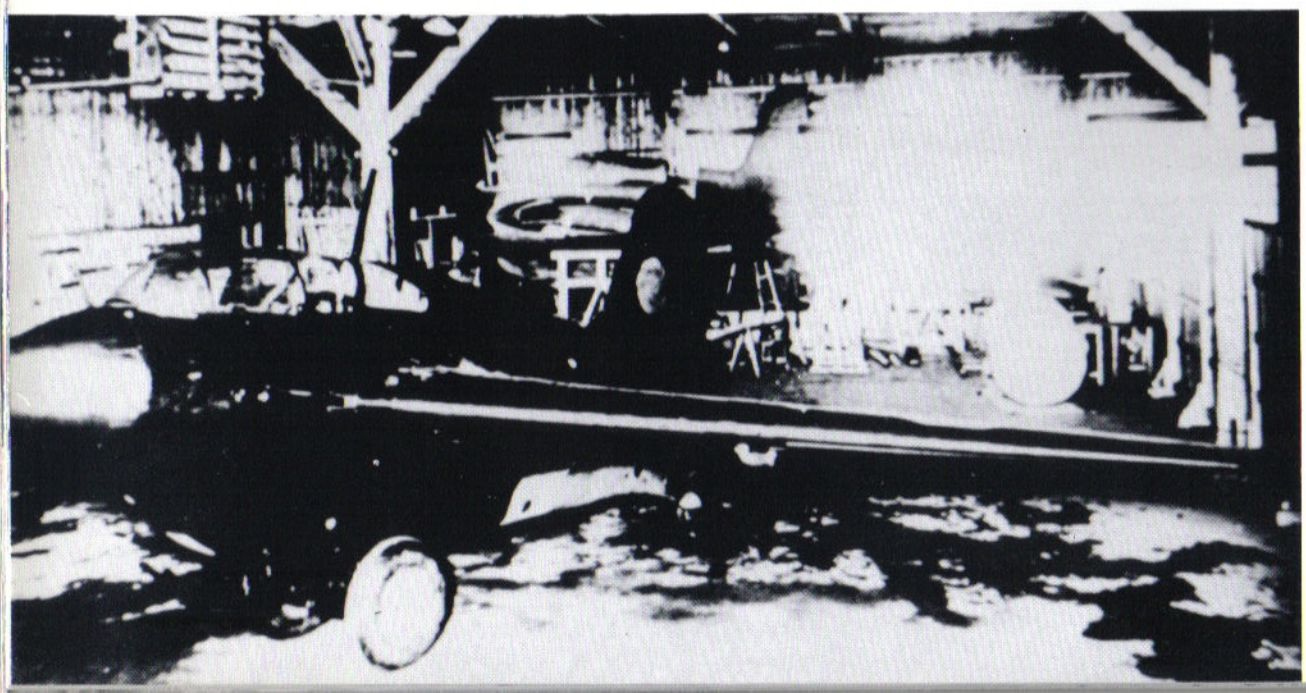


Lauzemis, lost in Mid-Atlantic northwest of Madeira due to enemy action. On a second try a Walter engine but not a 163B aircraft was successfully delivered to Japan. Without construction plans or blueprints, having only a manual of the rocket fighter on hand, the Japanese leaders none-the-less decided to copy the "Komet." The manual had been brought along on an earlier visit to Germany by Eiichi Iwatani, an engineer. Due to a shortage of time, Mitsubishi started in mid-July to build the airframe for the J8 M1 Shusui ("powerful sword") — the army version was marked Ki.200. Otsujiro Takahashi of Mitsubishi was in charge of the project. In September 1944, a model of the defense-fighter was ready and a few weeks later after thorough testing by army and navy, the green light was given for the construction of the prototypes. In the meantime, the order was given for the construction of gliders, made of wood and in the same scale as the Shusui. The model designation was MXY 7 Akigusa ("fall-grass"). Construction was started a few weeks after the

Above left:
The MXY 8 after a soaring flight.

Left and right page:
The Japanese navy version of the Me 163B, the Mitsubishi J8 M1 Shusui. The aircraft received an engine in mid-1945.





order was received by Mitsubishi and the first MXY 7 was delivered to an airport in close proximity, ready to be tested. For her first flight the Akigusa was towed to altitude. The results were satisfactory and two more gliders were produced by the navy yard in Joko Suka. The first prototype was delivered to the army air testing institute at Tachikawa.

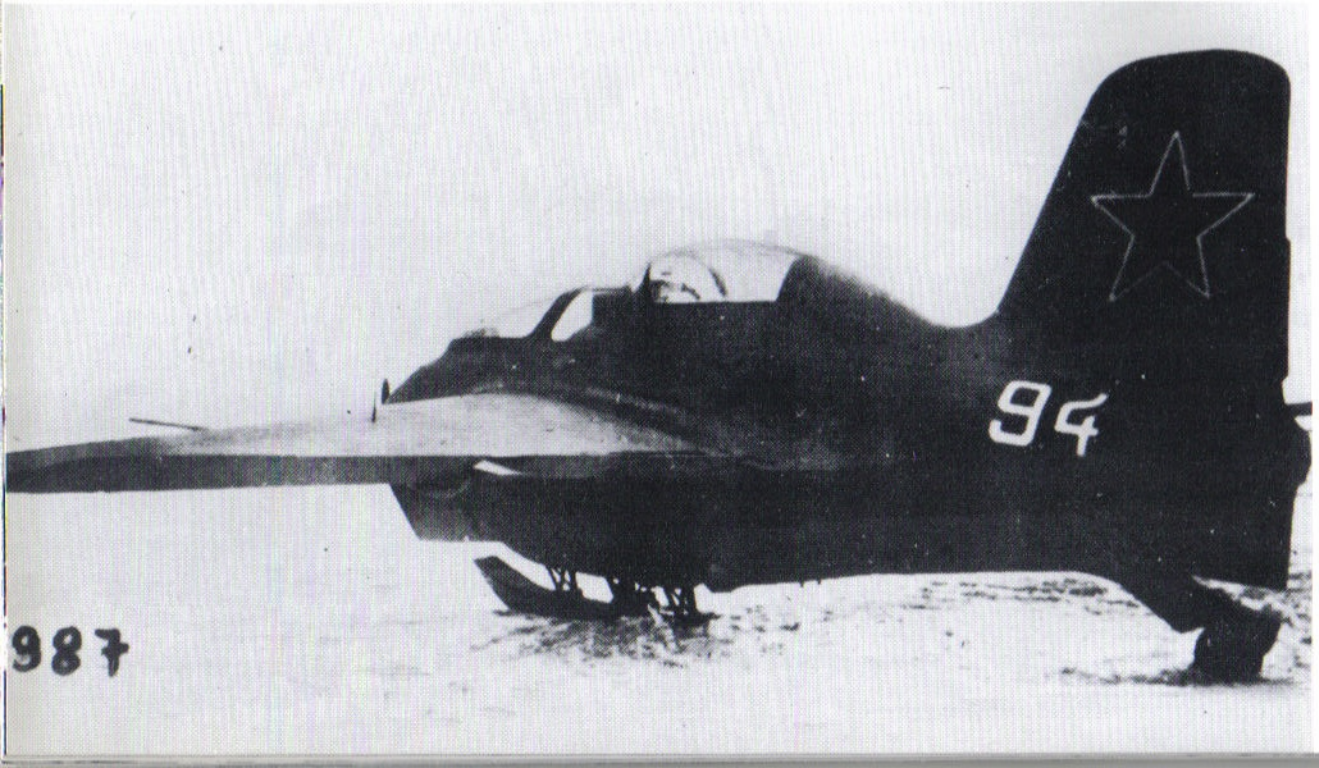
The construction of a heavier version of the glider, including water ballast tanks, to be able to closely resemble the combat type J8 M1, was given to the companies Meada Koku Kenk Yusho and Yokoi Koku K.K. The first company was working for the navy while the second was working for the army. The type designator for the heavy version of the MXY 7 "Akigusa" was MXY 8 for the Navy and Ku 13 for the Army.

The development of the airframe of the Japanese Me 163, the J8 M1, was making rapid progress. The aircraft was ready in July 1945 and the engine, which had been delivered one month before, could be installed. A number of pilots had been trained on the training glider and nothing stood in the way of the first flight of the J8 M1. The Japanese version of the Me 163 was ready on July 7,

Above left:
The first start of the J8 M1 with rocket power on July 7, 1945.

Left:
The Japanese rocket fighters were assembled in makeshift wooden shacks. In the background an aircraft being built.

Opposite:
The J8 M1 after the war.



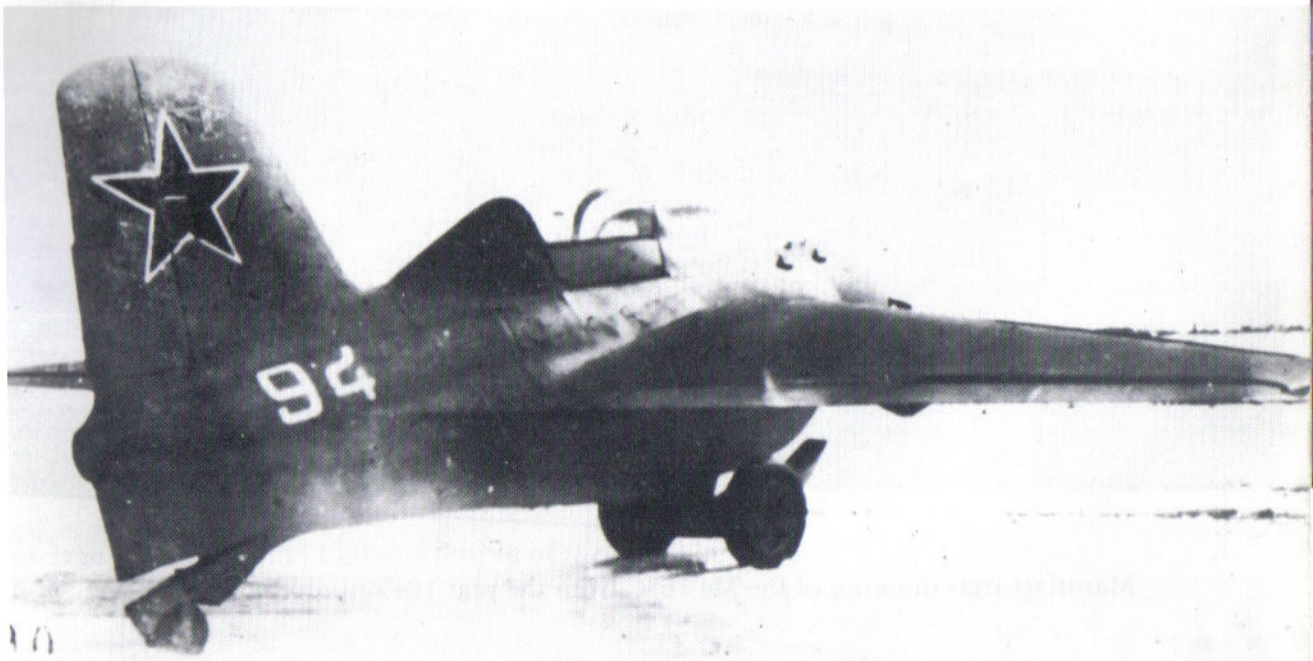
1945 at the airfield of Yokosuka. After the start of the engine the aircraft lifted off at an angle of forty-five degrees. At the altitude of 1200 feet the rocket engine suddenly cut out and the aircraft crashed. The pilot, Lieutenant Inuzuka, was killed. The reason for the crash was assumed to be a malfunction in the fuel system. It was changed, starting with the sixth and seventh prototype. There were probably no additional flights.

On May 2, 1945 another attempt was made to transport construction plans and materiel to Japan by U-Boat. U-234, under its commander Johann-Heinrich Fehler, left the harbor of Christiansand in Norway without escort. On board were Luftwaffe General Kessler and staff, two high officers of the High Command of the Kriegsmarine, two engineers of the Messerschmitt company and two Japanese engineers. On May 8, 1945 the submarine received a signal to surface in the north Atlantic and to unconditionally surrender. Herewith this last action had also failed.

Me 163 S

Along with the production model Me 163B, there were several other variations of the rocket fighter

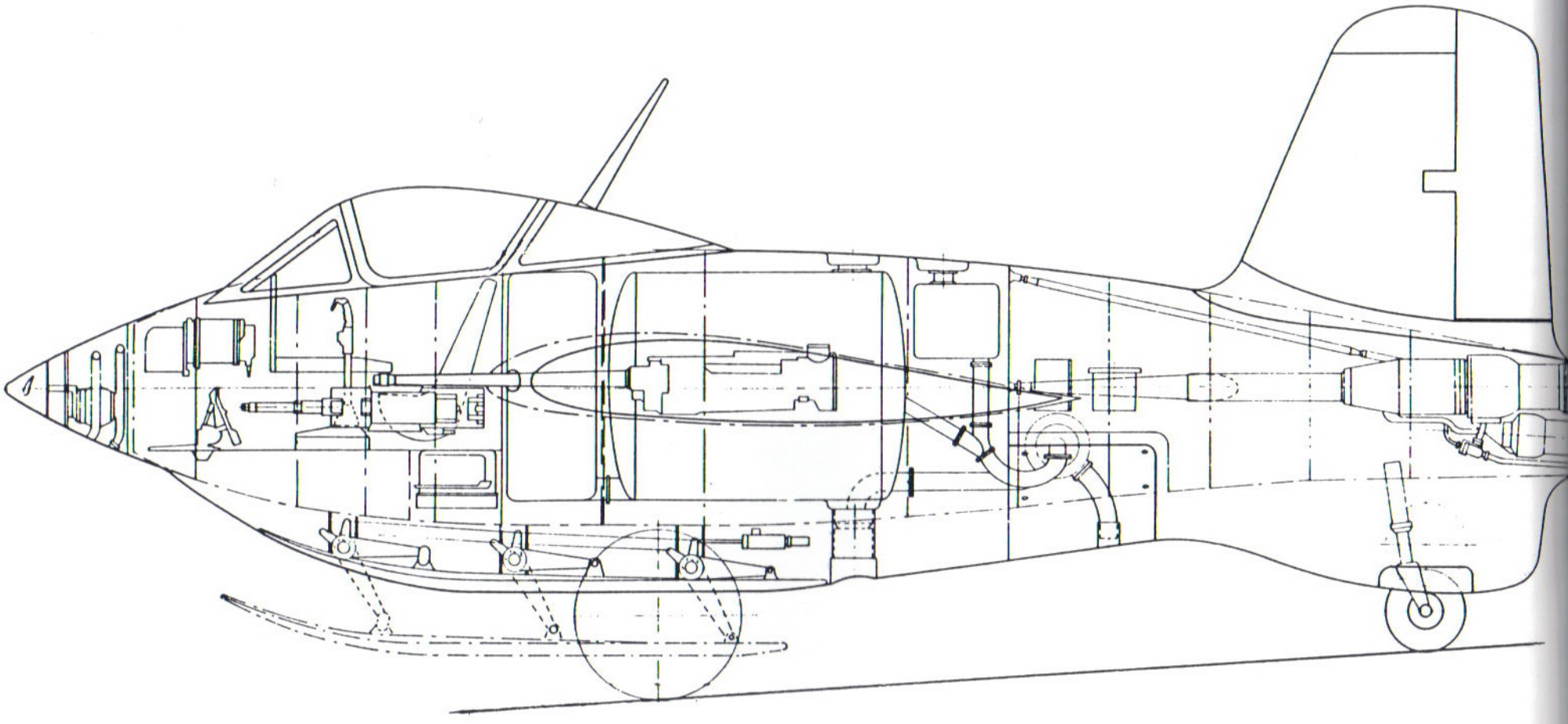
One of them was used to train pilots for the Me 163B. This type was designated Me 163S. This plane was a rebuilt production version from which the powerplant and fuselage fuel tank had been removed and in which a second cockpit was installed in a raised position for the flight instructor. The remaining fuel tanks and a new tank behind the second cockpit were filled with water to simulate the varying weight of the rocket fighter. The Me 163S provided the last stage of training, after the pilot had already gained his first flight experience in sail planes.



This page and opposite:
The Me 163S was a conversion of the Me 163B for the training of pilots for the rocket fighter. After the war an Me 163S was tested at the Flight-Technical Institute. The pilot was Mark C. Gallaj. Above left the 163S is shown in tow behind a Tu-2. Additional flights were done in the summer of 1945 under Vernikov and Vefinov.

Me 163C

During testing of the world's first rocket fighter, the meager range proved to be a considerable disadvantage for military use. Fitted with an additional fuel tank, the Me 163C represented an attempt to solve this problem. In addition, the armament was strengthened to four MK 108 guns, and also a Walter rocket engine with a cruising burner was installed. This was supposed to provide power for cruising. But because of the increased weight of the Me 163C, its flight time was only one minute more than that of the production version, which meant that no further construction of this type was approved.



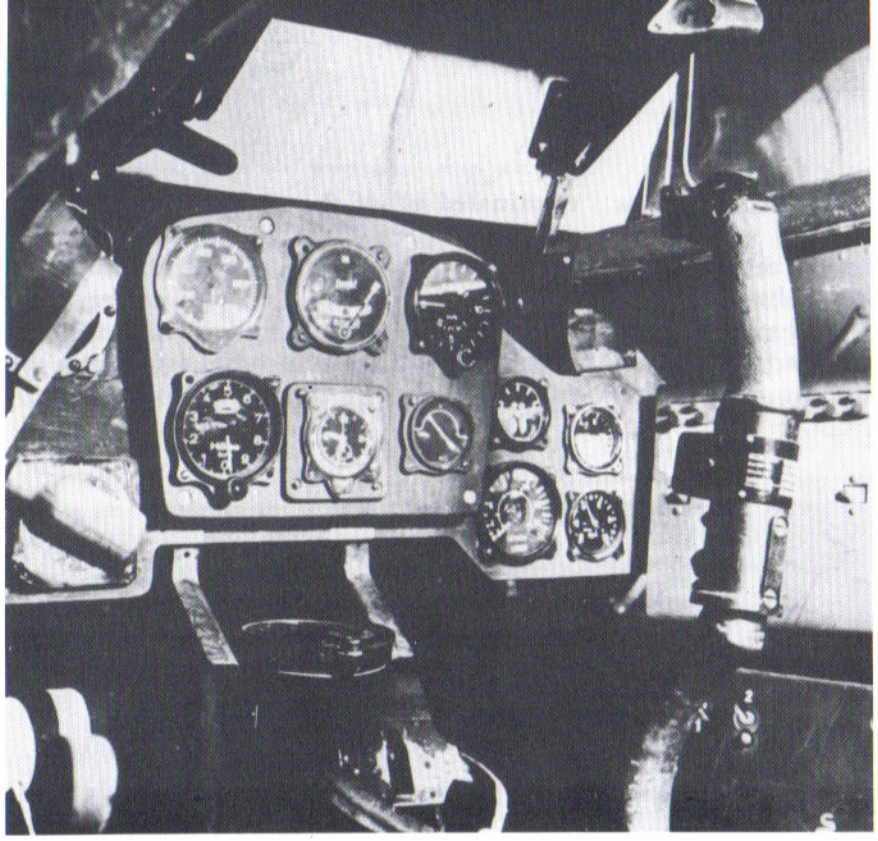
Manufacturers drawing of the Me 163C from the year 1944.

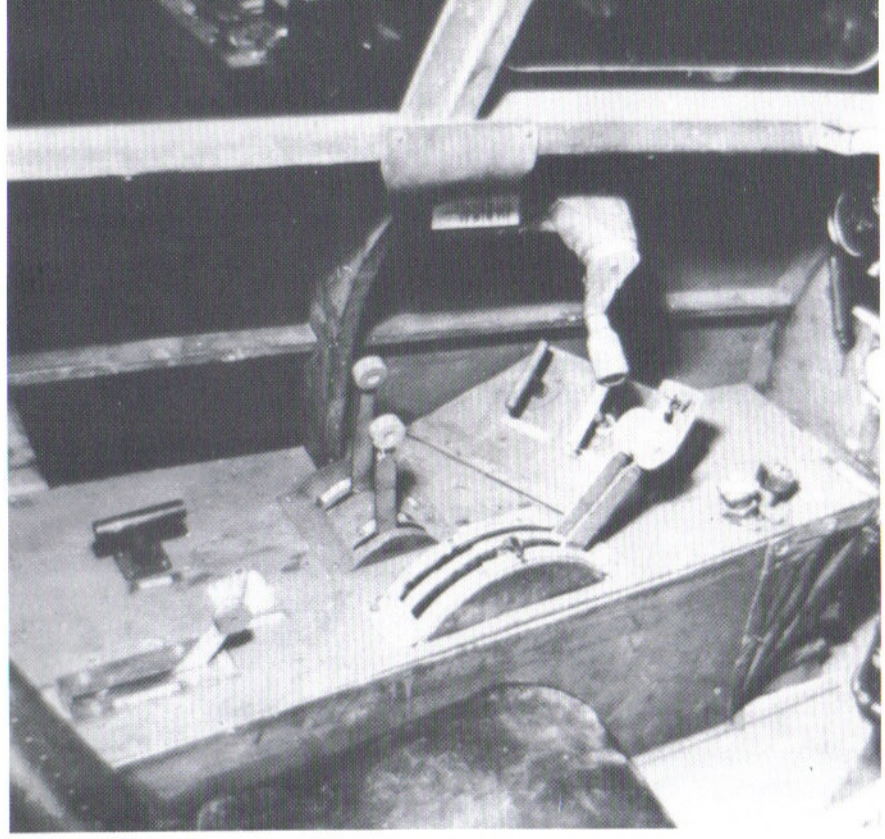
Me 263

A test version for the Me 263 was built from the Me 163B with a nosewheel and a lengthened fuselage. Two examples were planned but only one was finished. It is not known what became of the aircraft. The other Me 163B was captured before the end of the war by American troops.

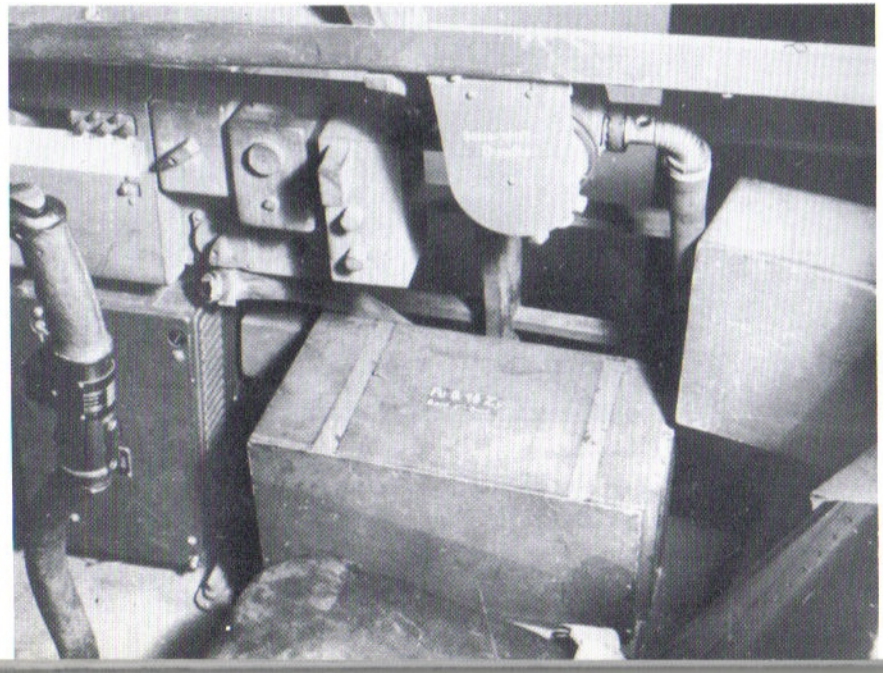
The Me 263 was meant to be the successor of the Me 163B. The aircraft had a longer fuselage, teardrop canopy, larger fuel tanks, an auxiliary cruise chamber and, most importantly, retractable landing gear. This eliminated all of the transport and towing problems after a flight which had been such a detriment to the Me 163B. The airplane did not fly anymore under its own power, however, a few towed flights were completed. It is not clear if a third prototype, aside from the Me 263 V1 and V2, was ever completed.

Test example of the Me 163B with lengthened fuselage and nose wheel for early testing of the 263. The lower part of the fuselage shows strengthening rods. In the background an Me 163A.





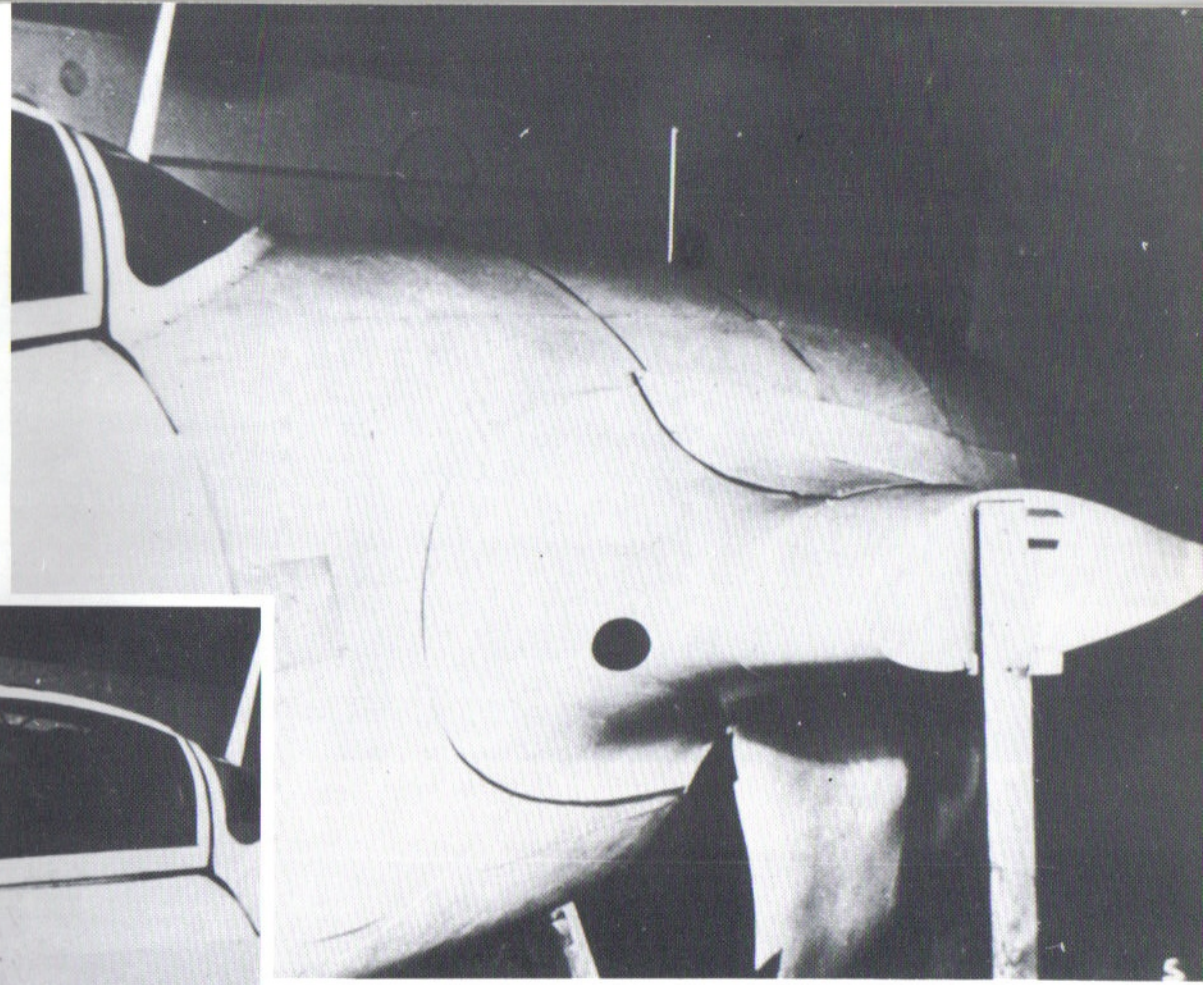
Above left:
Cockpit of the successor of the Me 163B, the Me 263.

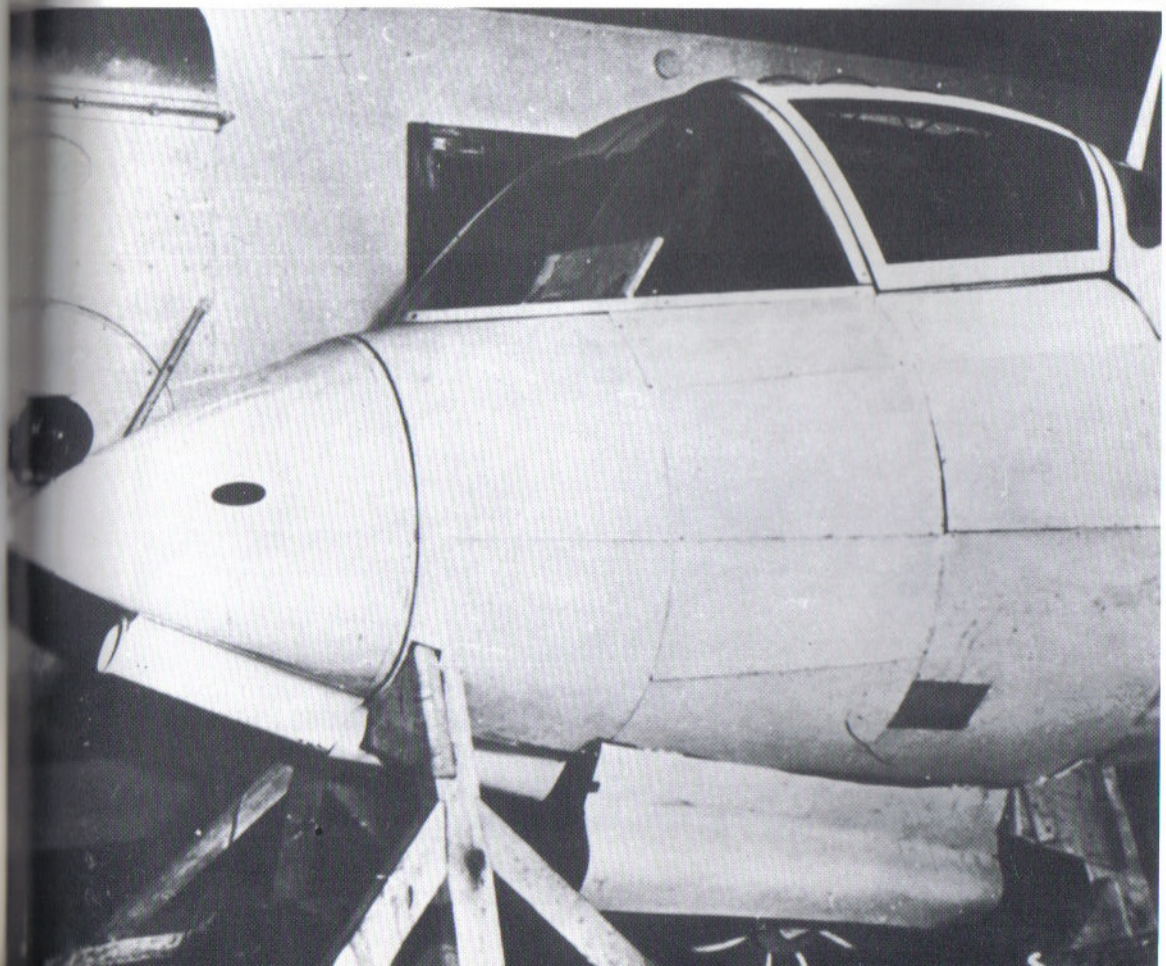


Above:
The left cockpit side of the wooden mockup for the Me 263 with the console for engine operating controls.

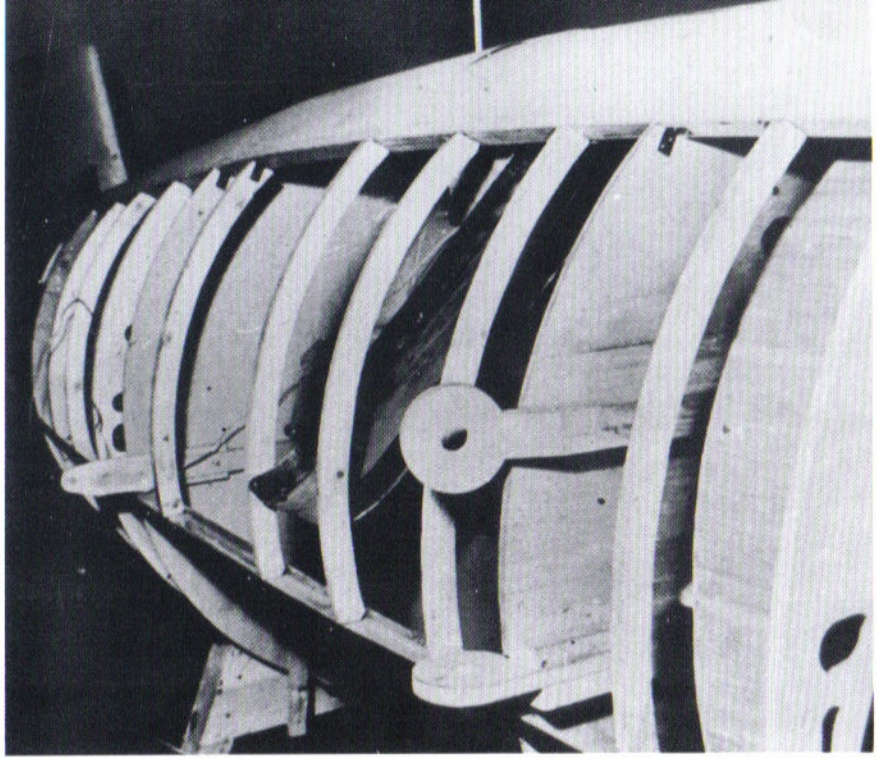
Left:
The right console was supposed to hold the radio transmitter/receiver FuG 16ZY.

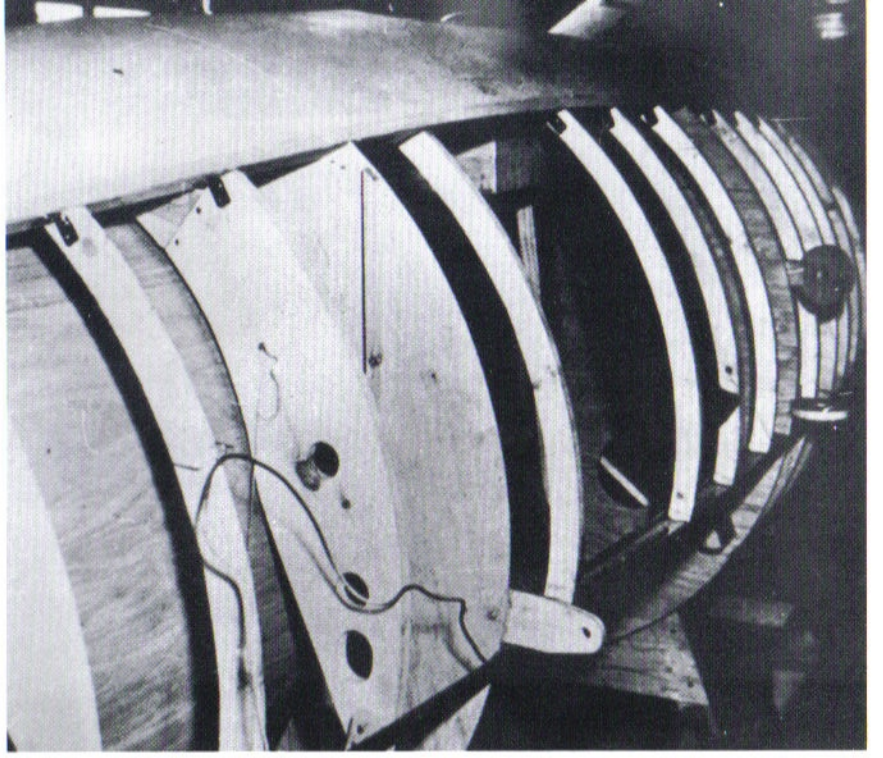
Right:
View of the 1:1 scale wooden mockup from right rear. The wings are wing roots only.

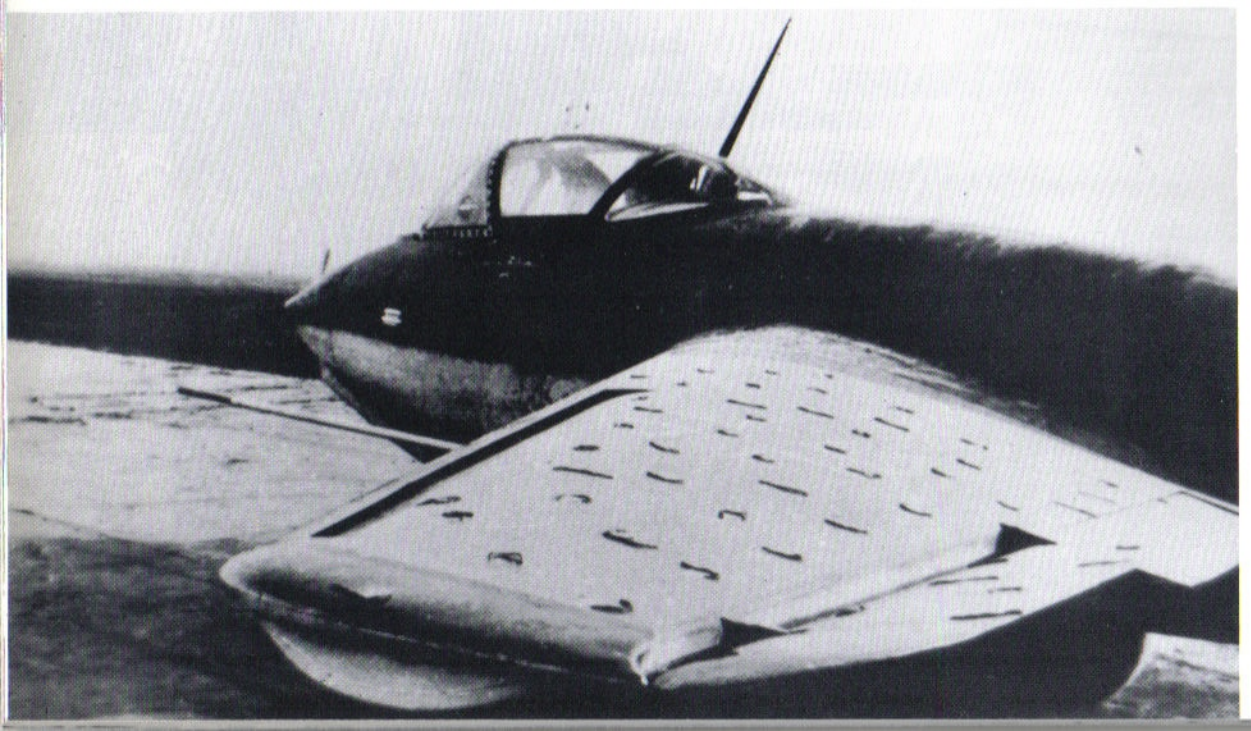




Left:
The wooden mockup fell into Russian hands at the end of the war. View of the cockpit and nose wheel.



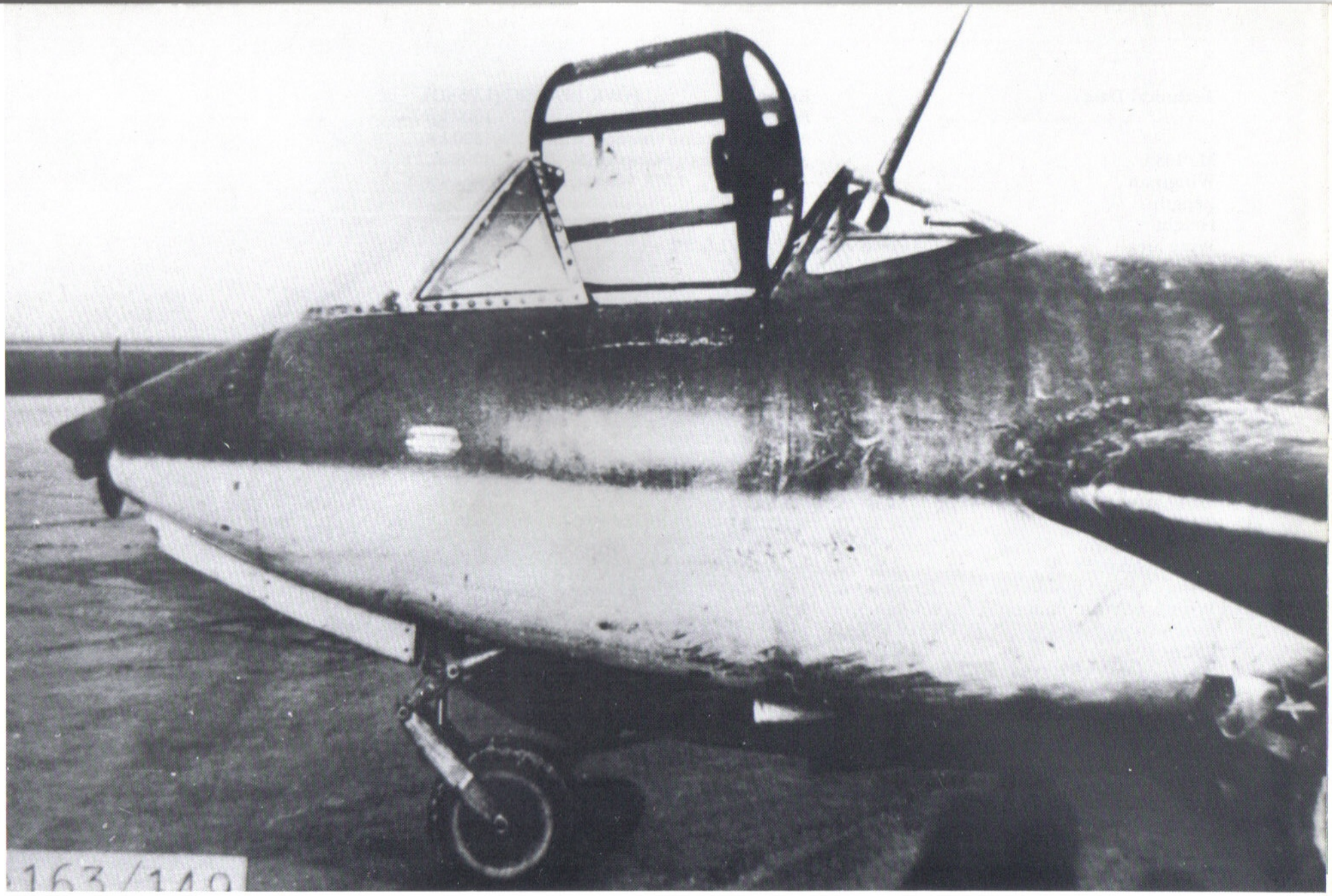




Above left:
The uncovered fuselage of the Me 263 wooden mockup, seen from the front. In correspondence the mockup was called Ju 248 by the Junkers company while the production model was called Me 263.

Above:
Right fuselage side of the Me 263 mockup manufactured in Dessau.

Left:
The flight characteristic tests were done in tow. To measure the wind flow, the Me 263 has wool threads glued to the wing. At this point, according to Junkers documents, two other aircraft were being built.



In all probability, the rollout of the Me 263 commenced in March 1945, however, due to construction problems, without its engine. Also, the gear was not retractable due to missing hydraulic cylinders.

Technical Data

Me 163A

Wingspan	8.85 m
Length	5.25 m
Height	2.16 m
Wing area	17.5 sq/m
Take-off weight	2200 kg
Empty weight	1140 kg
Wing Loading at take-off	134kg sq/m
Engine	HWK RII 203
Thrust	750 kp
Speed	850 kmh

Me 163 B-O

Wingspan	9.30 m
Length	5.75 m
Height	2.50 m
Wing area	19.6 sq/m
Tailfin area	2.02 sq/m
Take-off weight	3885 kg
Empty weight	1505 kg
Wing Loading at take-off	209kg sq/m
Wing loading at landing	107 kg sq/m
Engine	HWK 109-509 A2
Thrust	1700 kp
Max. engine running time	7 min.
Max. speed at 10,000 meters	950 kph
Max. altitude	15,500 m
Time to climb to 10,000 m	3.2 min.
Armament	2 x MK108 with 80 rounds

Me 163C

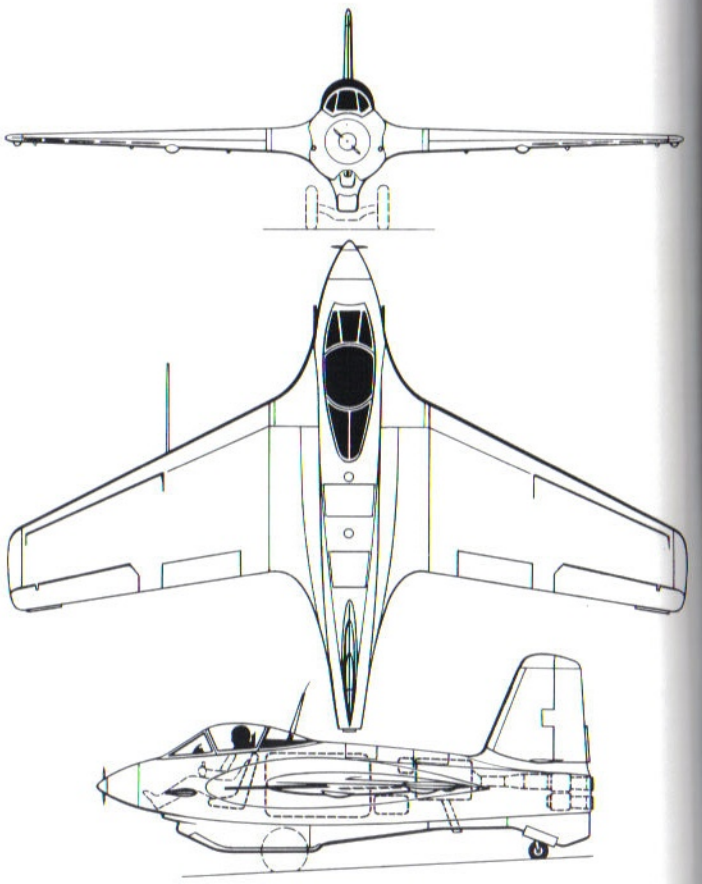
Wingspan	9.80 m
Length	7.04 m
Height	2.89 m
Wing area	20.5 sq/m
Weight empty	1927 kg
Weight at take-off	5000 kg
Wing loading at take-off	243.9 kg
Engine	HWK 109-509C (LP59D)
Engine thrust	1500 kp
Auxiliary cruise chamber thrust	300 kp
Max. engine running time	11 min.
Armament	4 MK 108 each with 40 rounds

Me 263 V1 & V2

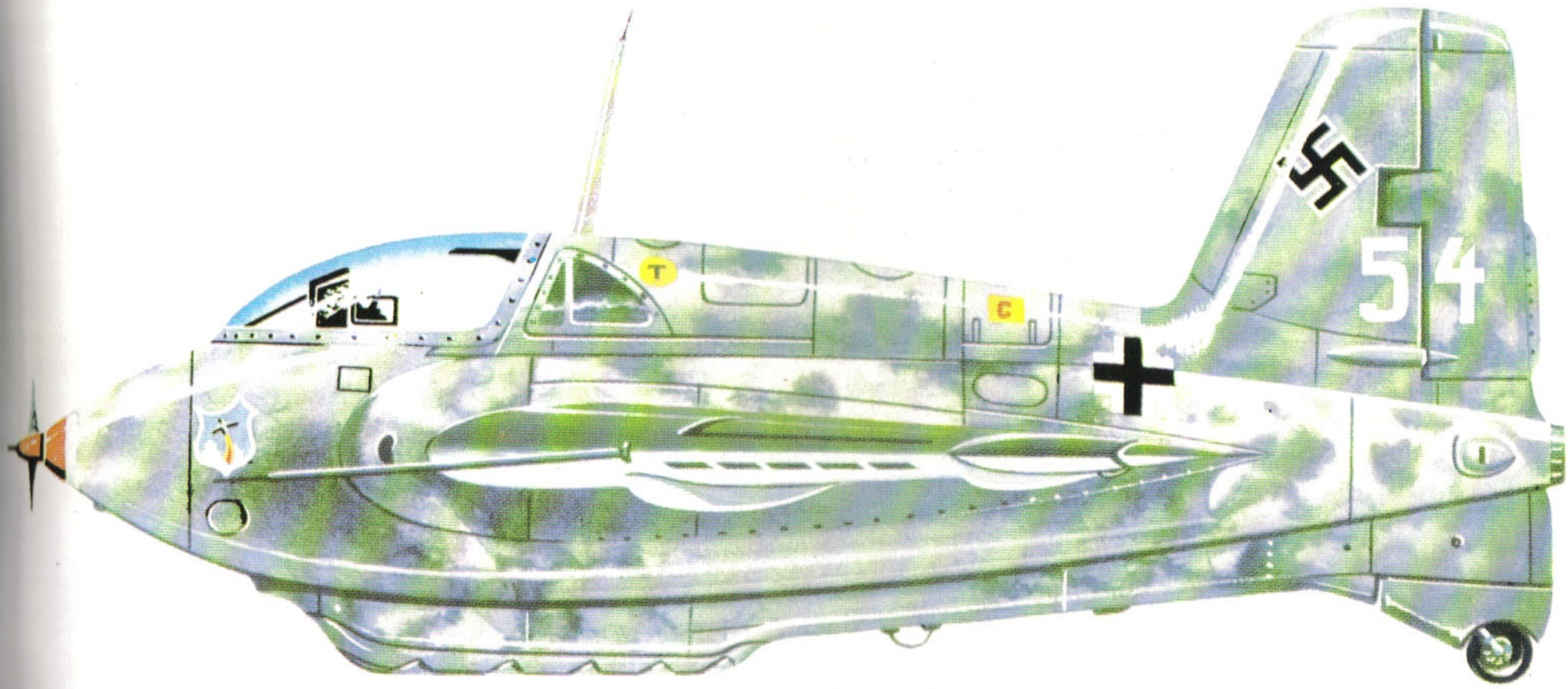
Wingspan	9.5 m
Length	7.88 m
Length of production model	7.83 m
Height	3.17 m
Wing area	17.8 sq/m
Sweepback	19 degrees
Area of tailfin	1.66 sq/m
Weight empty	1922 kg
Take-off weight	5113 kg
Wing loading at takeoff	296 kg sq/m
Wing loading at landing	108 kg sq/m
Engine thrust	2000 kp
Auxiliary cruise chamber thrust	400 kp
Armament	2 x MK108 with 40 rounds each

Mitsubishi J8 M1 "Shusui"

Wingspan	9.5 m
Length	6.05 m
Height	2.31 m
Wing area	17.8 sq/m
Empty weight	1505 kg
Take-off weight	3885 kg
Wing loading	219 kg sq/m
Engine	Toko Ro-2 (KR10)
Thrust	1500 kp
Max. speed	900 kph
Max. altitude	12,000 m
Time climbing to 10,000 m	3.5 min.
Max. engine running time	5.5 min.
Armament	2 x MK 30 Type 5



The Messerschmitt Me 163 B-O "Komet" V21 during testing at Bad Zwischenahn in Oldenburg.



An Me 163B of the Replacement Squadron JG 400 at Udetfeld (winter 1944/45)

This Me 163B can be seen at the Australian War Memorial in Canberra.

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MESSERSCHMITT Me 163 VOL. II

Schiffer