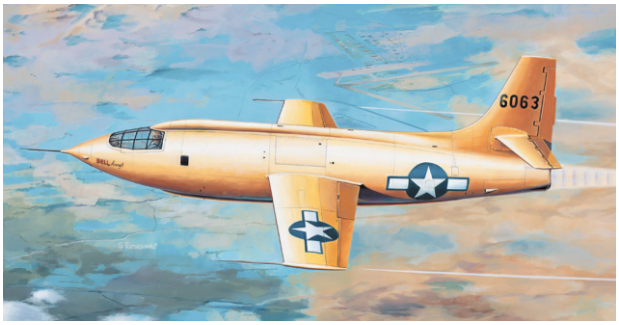
X-1 Mach Buster

eduard

1/48 Scale Plastic Model Kit



item No. 8079

ProfiPACK edition

The Bell X-1 became the world's first aircraft to achieve supersonic speed and its pilot, Charles Yeager, held the title of the fastest man on the planet. But he was not the only one as a total of eighteen brave men took turns in the cockpit of three manufactured X-1s.

Already during World War II, fighter pilots experienced the problem of high speeds in dive flight. The aerodynamic barrier created by the sudden increase in drag on reaching the transonic speeds prevented further increase of performance of piston-engined aircraft. Early knowledge of this phenomenon resulted in the establishment of a program of experimental aircraft designed to explore these unexplored areas of aerodynamics. The first aircraft of the so-called X-planes was the Bell X-1. The contract for its design was awarded to the manufacturer on March 16, 1945, but design work had already begun in December 1943.

One of the main personalities of the program was Ezra Kotcher, an aeronautical engineer who, as early as 1939, proposed that the then USAAC fund high-speed research. But the government didn't show interest until four years later, when P-38, P-47, and P-51 pilots began experiencing problems with transonic speeds. Kotcher subsequently created a study of the rocket plane, and F. D. Orazio and G. W. Bailey were also involved in preparations of the design of the future X-1. Their joint proposal was presented to Air Force and NACA representatives, and in the fall of 1944 Kotchler was given permission to find a supplier for the project, then designated MX-524. It was not easy, as all aircraft manufacturers were busy with war production, but eventually support was found from one of the founders of Bell Aircraft Corporation, Robert Woods. Bell's designers became involved in the project shortly thereafter, looking for the best wing profile and fuselage shape, for which they eventually used a 12.7 mm machine gun bullet as a model.

By the summer of 1945, the program had already been given high priority and also secrecy. There were still many question marks hanging over the concept, including whether the aircraft should be air-launched by a carrier or taking off conventionally. Woods in particular was a proponent of the latter option, believing the X-1 could become an interceptor if the tests were successful. So, the new experimental aircraft was equipped with retractable landing gear. However, plans for ground launches were thwarted by problems with the design of a sufficiently powerful turbopump to deliver fuel and oxidizer to the engine. The choice had to be made to inject fuel into the engine by compressed nitrogen, but the nitrogen tank limited the volume of the fuel tank and therefore the engine run time. Ground take-offs were therefore possible, but unsuitable.

After a mock-up inspection on October 10, 1945, Bell was given permission to produce the first unit No. 46-062. It was completed on December 27 and flown to Pinecastle Field on January 19, 1946, under the B-29. It made its first flight, still with a ballast instead of an engine, six days later. With Jack Woolams in the cockpit, it separated from the carrier at 27,000 feet (8,230 m) and landed after an uneventful glide. Four months later, Woolams killed himself in a racing P-39 and was replaced as Bell's chief pilot by Chalmers Goodlin.

At Pinecastle Field, 46-062, which was destined for the Air Force, completed ten glide flights before it was decided to move to Muroc Base, where a second prototype, 46-063, was already delivered. This was to serve NACA and made its first glide flight on October 11. Three more followed and on December 9, first powered flight was conducted. Bell subsequently continued flight testing until mid-year, when the required twenty powered flights necessary for the USAF and NACA to take over the program were conducted. Meanwhile, the first prototype was undergoing modifications at Bell. The wing got reduced thickness/chord ratio (from 10 % to 8 %), as well as the horizontal stabilizer (from 8 % to 6 %).

Taming the Invisible Demon

The head of the Air Force test team was appointed Col. Albert Boyd, who selected the first three pilots. They were Capt. Charles E. Yeager, Lt. Robert A. Hoover and Capt. Jack Ridley. NASA added two of its pilots, Herbert Hoover and Howard Lilly.

The Air Force began the program with the X-1 on July 27, 1947. Yeager made four glide flights, followed by the first powered flight on August 29. Thereafter, speed was gradually increased to Mach 0.997, at which point tail flutter occurred. On the advice of Captain Jack Ridley, the X-1 was modified and given an in-flight adjustable horizontal stabilizer. An attempt to break the sound barrier was scheduled for October 14 after it proved to be a suitable solution. Yeager had broken two ribs the night before, but he was not about to let the first time pass and, despite secret difficulties and pain, he settled into the cockpit, got dropped from a B-29 at 20,000 ft at 10:30 a.m., ignited the two rocket engine chambers and climbed to 40,000 ft. He then ignited the third chamber and watched the machmeter steadily approaching Mach 1. The needle finally jumped to Mach 1.06, and ten minutes later the orange X-1 landed. The "invisible demon", as the sound barrier was called, had been conquered!

The X-1 program continued successfully after the record-breaking flight, with both prototypes pushing the achieved speed to Mach 1.45, which proved to be the limit for 46-062. Further flights therefore concentrated on aerodynamic and mechanical measurements as well as the altitude capability tests with 60,000 ft achieved.

The NACA program conducted with the second prototype was different, and the first "civilian" to break the speed of sound was Herbert Hoover on March 10, 1948. Because of the thicker wing (a 10 % profile was retained) it was slower with Mach 1.2 being its limit.

Due to various problems, the third prototype did not enter the test program until July 20, 1951, when Joseph Cannon made the first glide flight with it. As it turned out, it was also the last one, as the following attempt ended under dramatic circumstances. Due to problems with the pressurization of the fuel system and with the cockpit door closing, the B-50 had to land with the X-1 in the bomb bay. After the ground pressurization of the system, the fuel was supposed to be jettisoned, but an explosion occurred that completely destroyed the third X-1. A number of problems also affected the first and second prototypes during testing, for example the collapse of the nose landing gear leg during landing was quite common issue. However, none of the glitches were fatal. The first X-1 prototype therefore headed for the museum after testing, while the second was converted to the X-1A version. A total of 157 flights were made, involving eight pilots for the USAF, seven for NACA, and three were Bell factory pilots. Charles Yeager flew highest number of missions (34), second was Chalmers Goodlin (26).

ATTENTION ✶ UPOZORNĚNÍ ✶ ACHTUNG ✶ ATTENTION ✶ 注意

Carefully read instruction sheet before assembling. When you use glue or paint, do not use near open flame and use in well ventilated room. Keep out of reach of small children. Children must not be allowed to suck any part, or pull vinyl bag over the head.

Před započetím stavby si pečlivě prostudujte stavební návod. Při používání barev a lepidel pracujte v dobre větrané místnosti. Lepidla ani barvy nepoužívejte v blízkosti otevřeného ohně. Model není určen malým dětem, mohlo by dojít k požití drobných dílů.

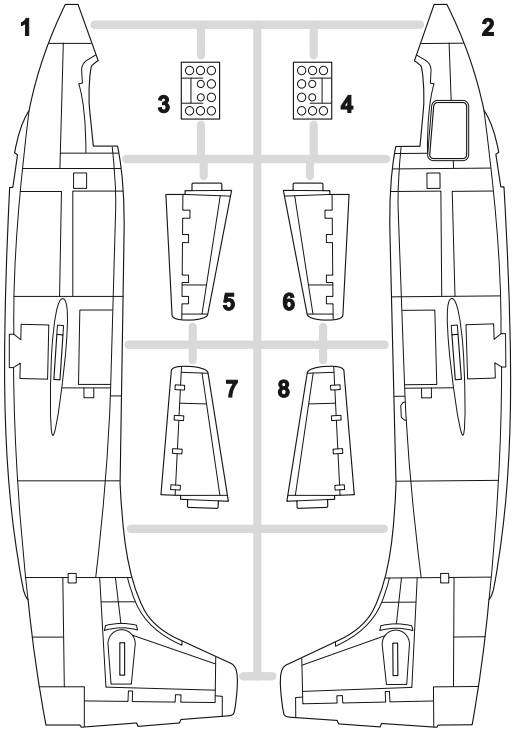
INSTRUCTION SIGNS ✶ INSTR. SYMBOLY ✶ INSTRUKTION SINNBILDEN ✶ SYMBOLES ✶ 記号の説明

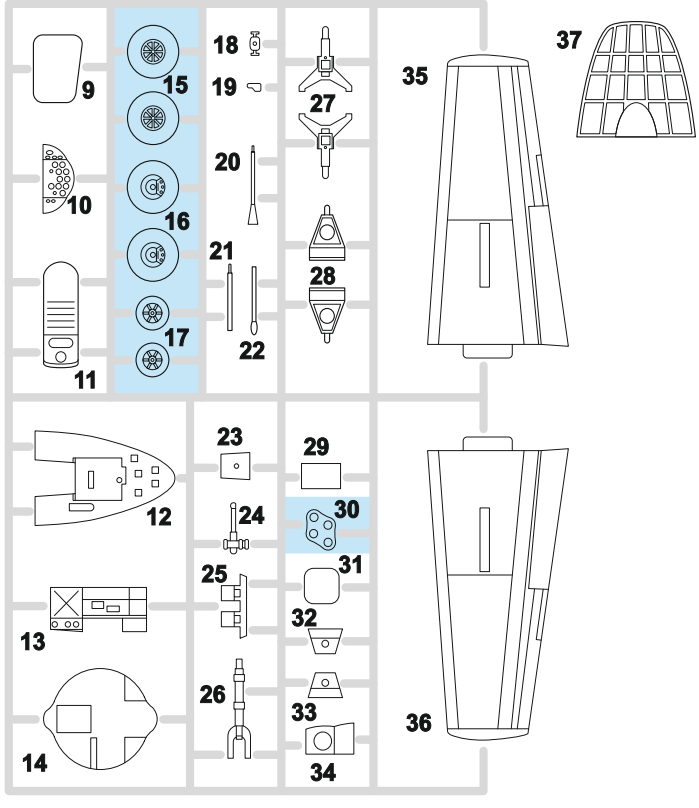
OPTIONAL VOLBA | BEND OHNOUT | SAND BROUSIT | OPEN HOLE VYVRTAT OTVOR | SYMETRICAL ASSEMBLY SYMETRICKÁ MONTÁŽ | REMOVE ODŘÍZNOUT | REVERSE SIDE OTOČIT | APPLY EDUARD MASK AND PAINT POUŽÍT EDUARD MASK NABARVIT

PLEASE, CHECK THE LATEST VERSION OF THE INSTRUCTIONS ON www.eduard.com

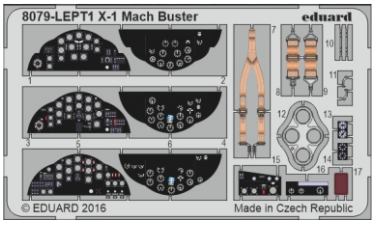
PARTS ✶ DÍLY ✶ TEILE ✶ PIÈCES ✶ 部品

PLASTIC PARTS





PE - PHOTO ETCHED DETAIL PARTS



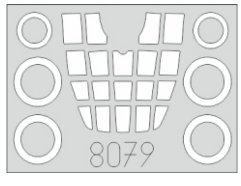
eduard BRASSIN

RP - RESIN PARTS

R9 2 pcs.

R10

eduard MASK

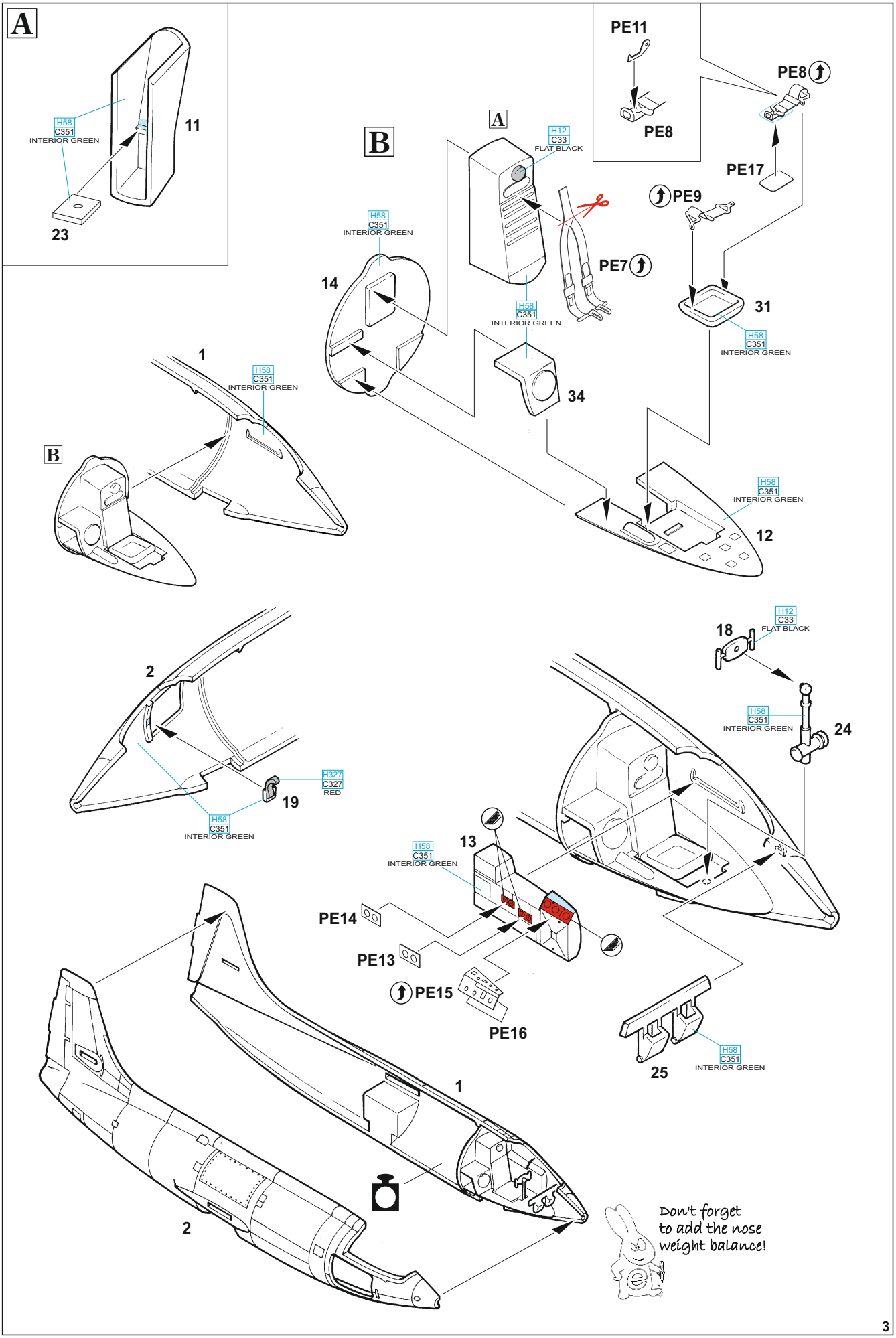


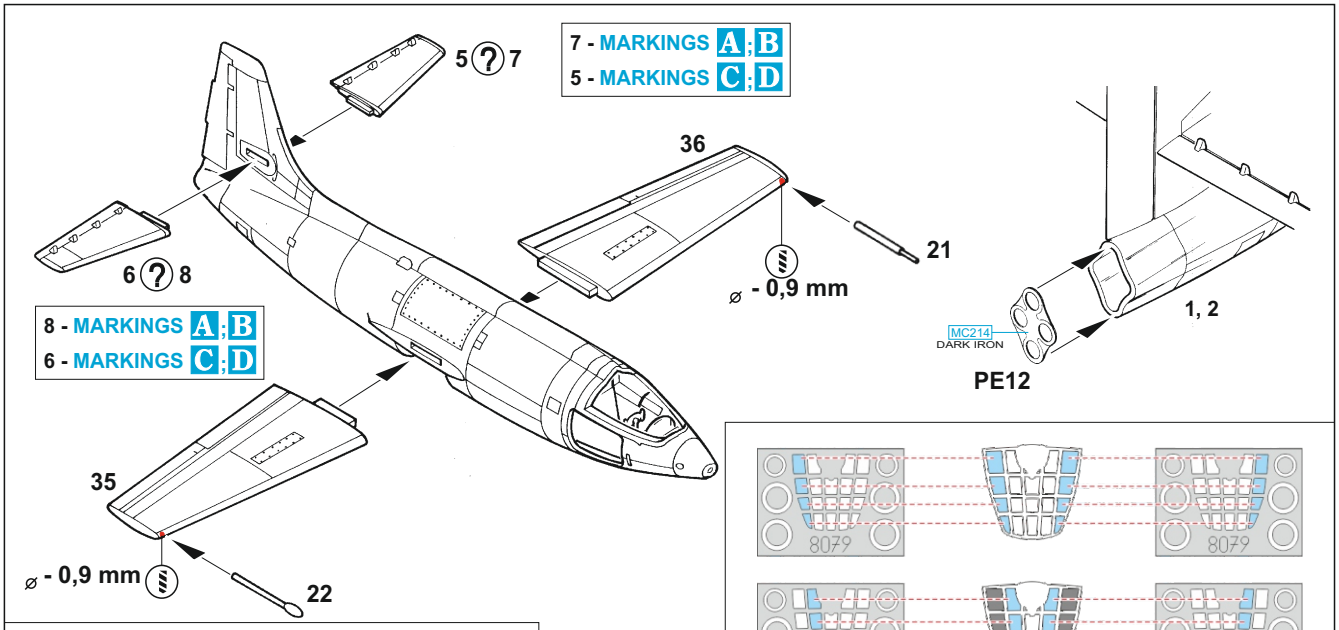
-Parts not for use. -Teile werden nicht verwendet. -Pièces à ne pas utiliser. -Tyto díly nepoužívejte při stavbě. - 使用しない部品

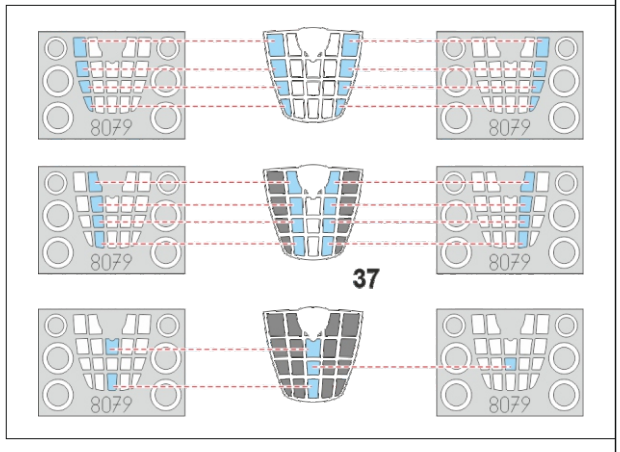
COLOURS ✶ BARVY ✶ FARBEN ✶ PEINTURE ✶ 色

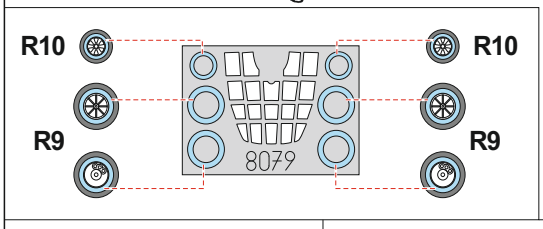
GSi Creos (GUNZE)		
AQUEOUS	Mr.COLOR	
H2	C2	BLACK
H12	C33	BLACK
H14	C59	ORANGE
H58	C351	INTERIOR GREEN
H77	C137	TIRE BLACK
H316	C316	WHITE
H327	C327	RED

Mr.METAL COLOR	
MC214	DARK IRON
Mr.COLOR SUPER METALLIC	
SM06	CHROME SILVER

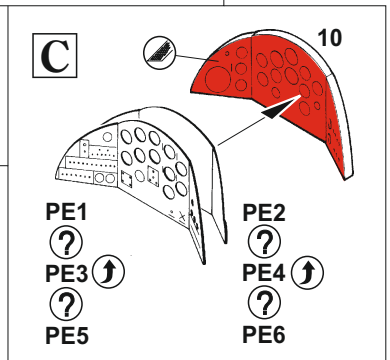

A
H58
C351
INTERIOR GREEN
11
23
B
A
H12
C33
FLAT BLACK
PE11
PE8
PE8
PE17
PE9
PE7
H58
C351
INTERIOR GREEN
14
31
34
12
1
B
2
H327
C327
RED
19
18
24
13
PE14
PE13
PE15
PE16
25
1
2
Don't forget
to add the nose
weight balance!

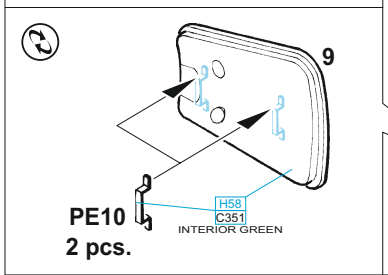


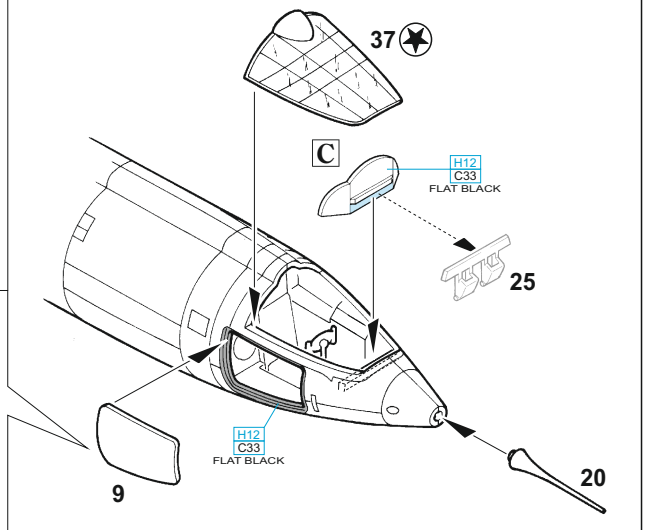


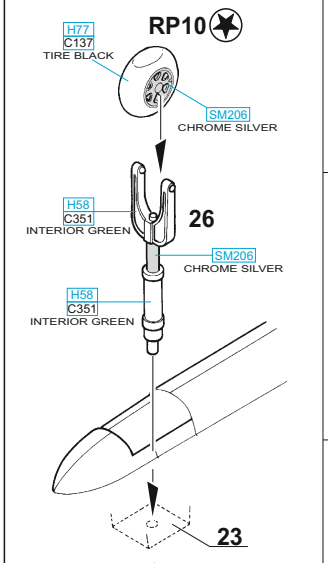


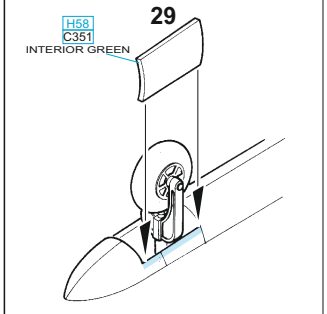
PE1, 2 - MARKING A
PE3, 4 - MARKING B
PE5, 6 - MARKINGS C;D

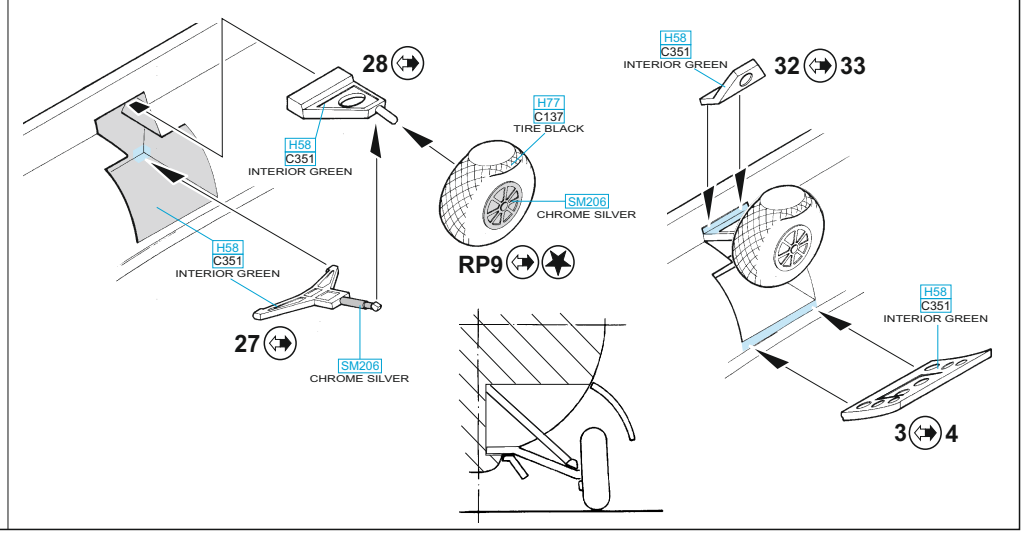






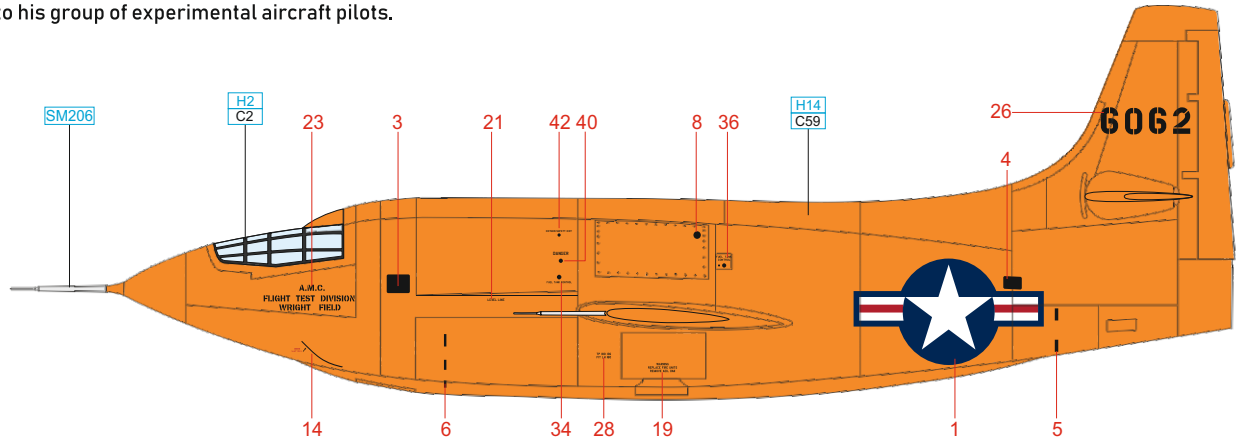


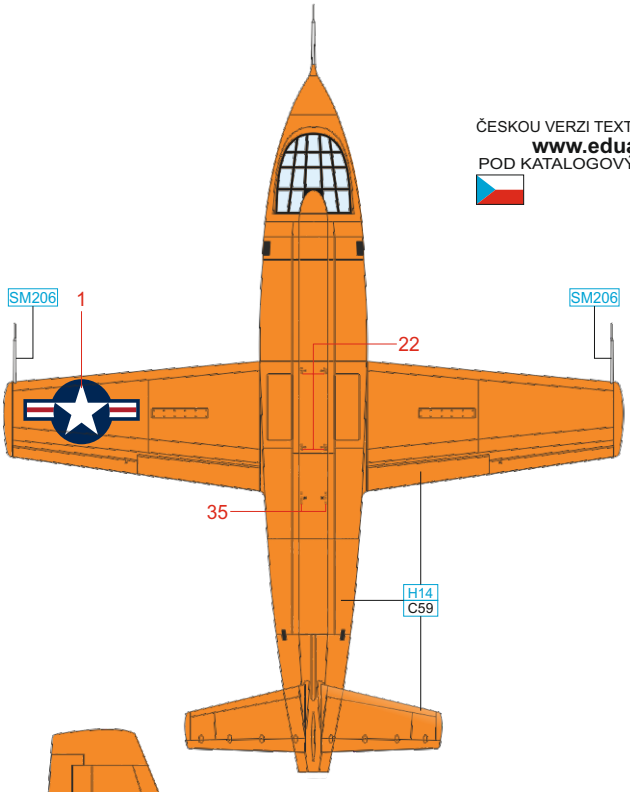




A 46-062, Charles Yeager, Muroc Dry Lake Base, October 1947

Charles "Chuck" Elwood Yeager became the first man in history to break the sound barrier in this aircraft on October 14, 1947. It was piquant that two days prior the record flight, Yeager broke two ribs in a horse-riding accident and was unable to move his right arm due to the pain. Bell's rocket-powered experimental aircraft was painted bright orange throughout and already sported new style of the national insignia. The Glamorous Glennis inscription in front of the entrance door related to Chuck's wife. Yeager was an American World War II fighter ace with 13 kills, and his Mustangs bore the same name. He was shot down over France and, with the help of the French Resistance, made it across the occupied territories to Gibraltar. From there he returned to the unit. After the war, he make use of the rule allowing the downed pilots to choose a base for their further service. Because of family reasons Yeager chose Wright Field, the research and development center of the U.S. Air Force. There he was picked by the chief of the flight test team, Colonel Albert Boyd, and assigned to his group of experimental aircraft pilots.





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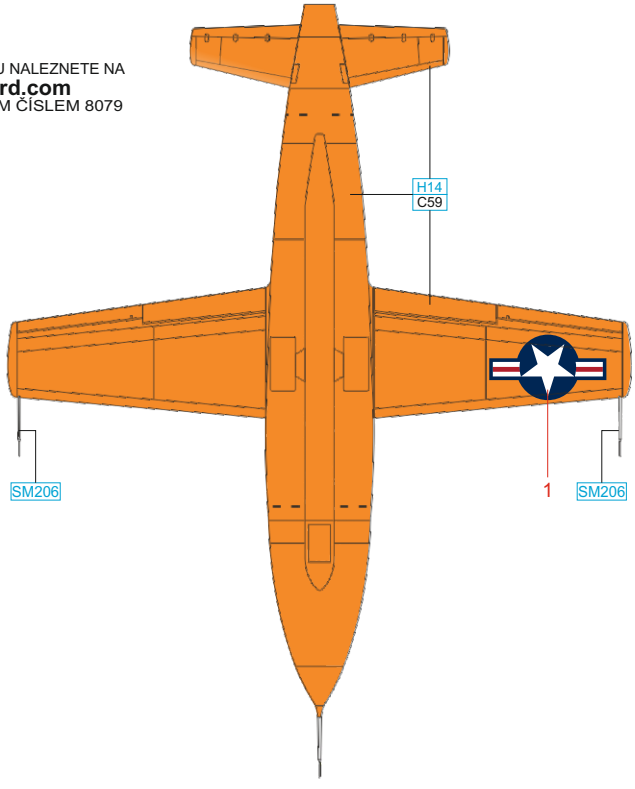

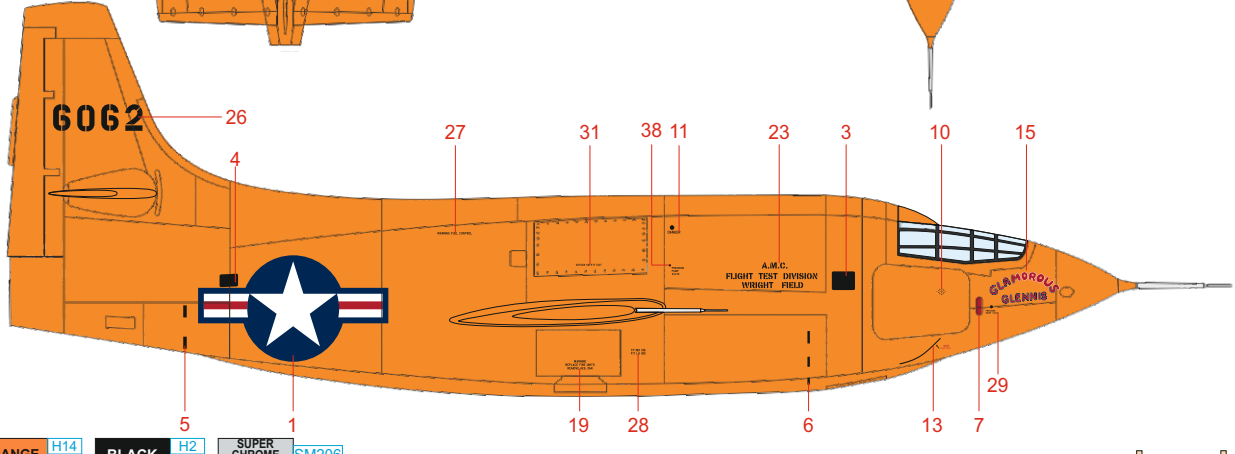

ORANGE H14 C59 | BLACK H2 C2 | SUPER CHROME SILVER 2 SM206

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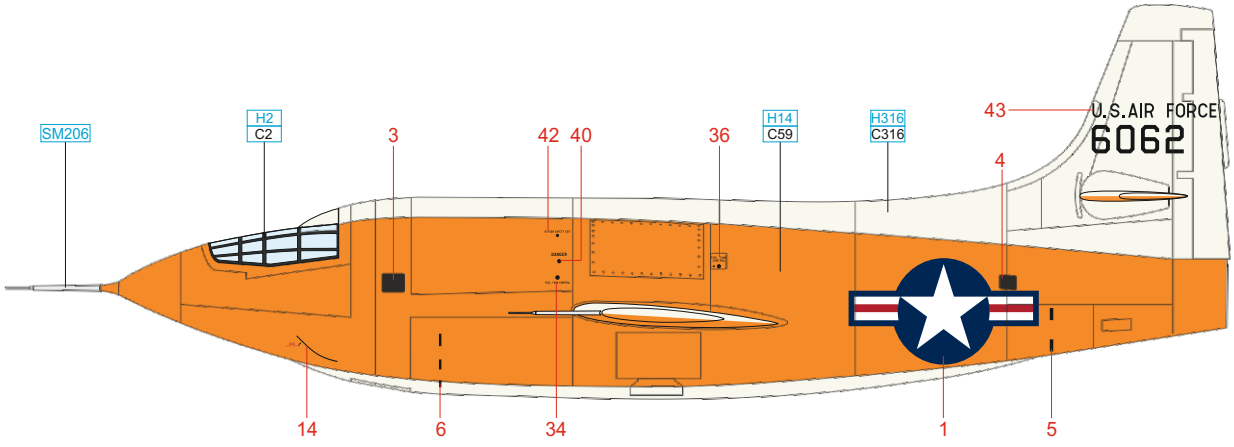
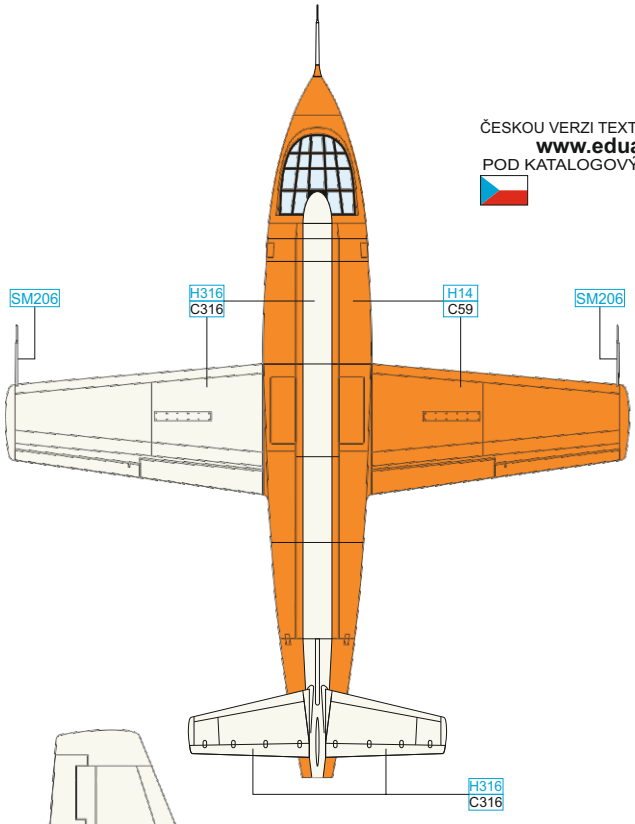
B S/N 46-062, Edwards AFB, 1950

Both experimental Bell X-1s made all but one of their flights being dropped from the airborne carrier, which was a specially modified B-29. The only exception was a conventional take-off from the runway made by Charles Yeager with this aircraft on January 5, 1949. At that time, the aircraft still bore the all-orange livery, which was subsequently modified by partial white painting. On May 8, 1950, Jack Ridley carried out vibration and load tests on the wing and tail surfaces. Just four days later, 46-062 conducted its last flight with Chuck Yeager behind controls. This flight was made for filming purposes only. The aircraft was then retired after 82 test flights. Ten pilots changed in the cockpit. Today it is on display at the National Air and Space Museum in Washington, D.C., in its original full-orange form.





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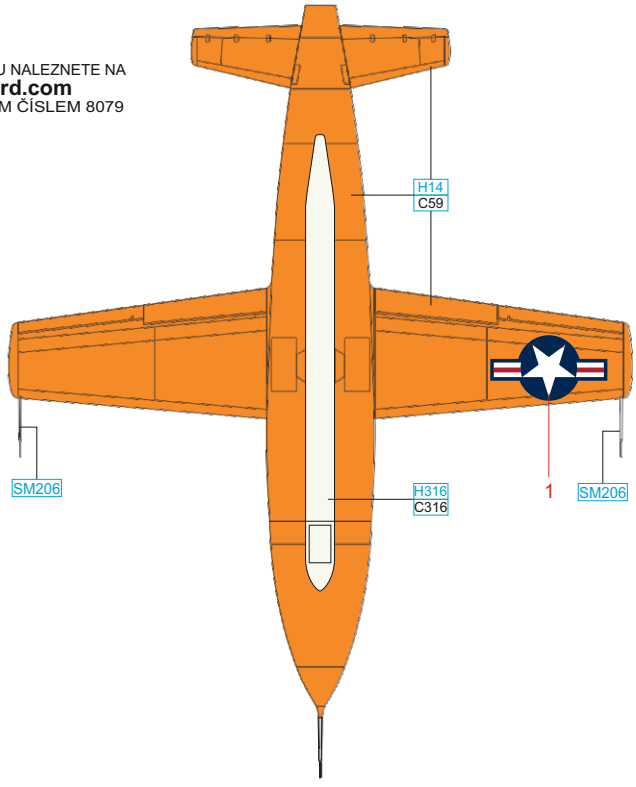
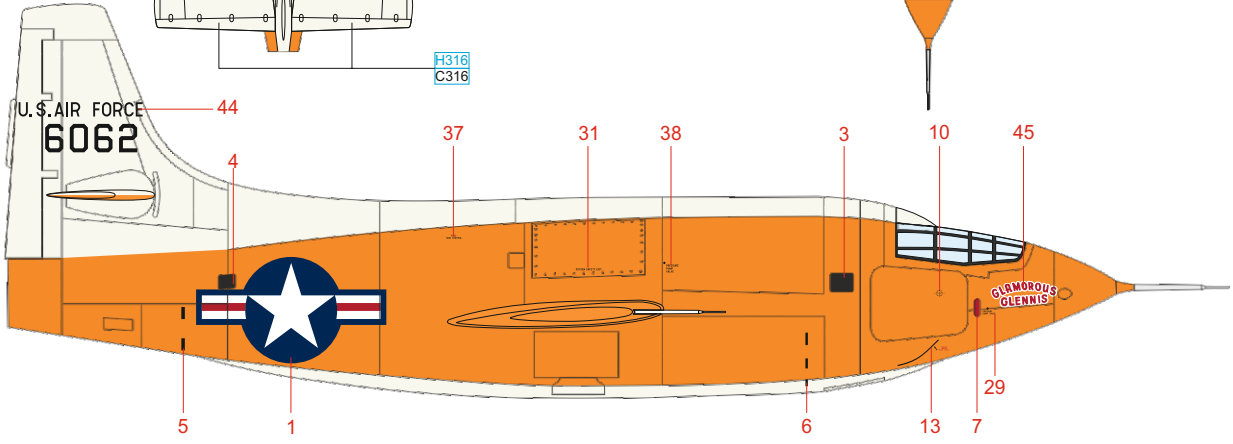
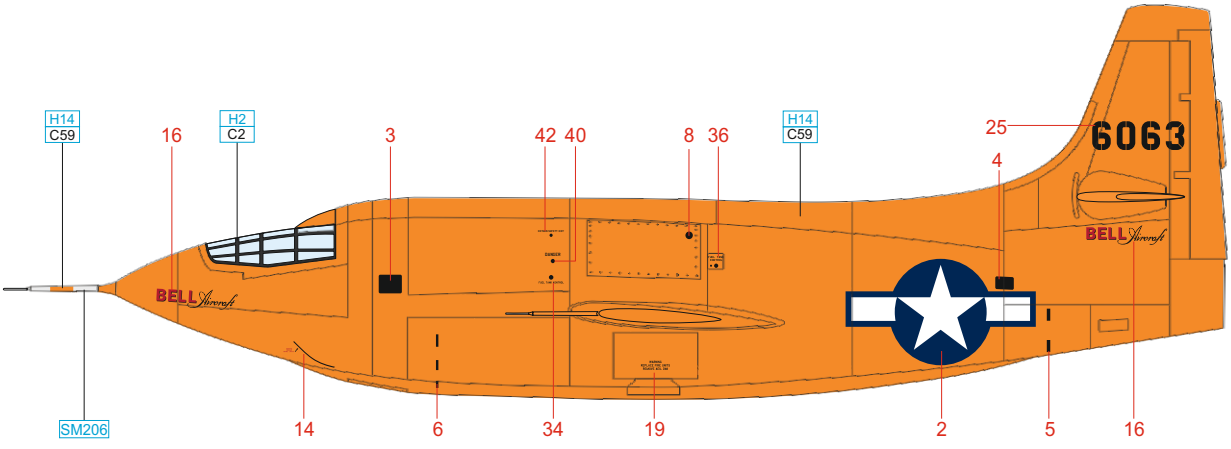


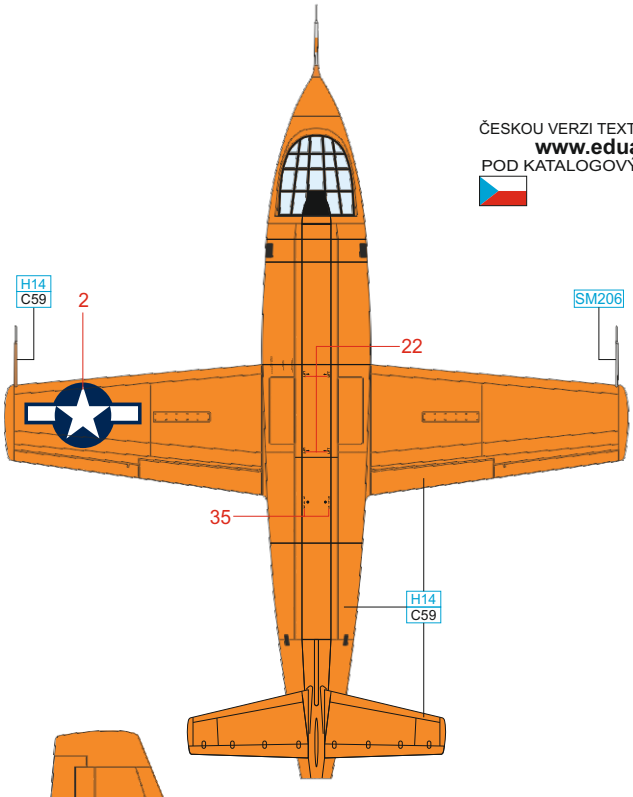


ORANGE H14 C59	BLACK H2 C2	WHITE H316 C316	SUPER CHROME SILVER 2 SM206

C 46-063, Chalmers Goodlin, Muroc Dry Lake Base, April 1946

After several test glide flights, the second example of the X-1 rocket plane made its first powered flight on April 11, 1946, with Chalmers "Slick" Goodlin in the cockpit. The aircraft was painted the same bright orange as the first example but sported the original war period insignia on the wings and fuselage and had the inscription BELL Aircraft painted in front of the cockpit and under the tail surfaces.





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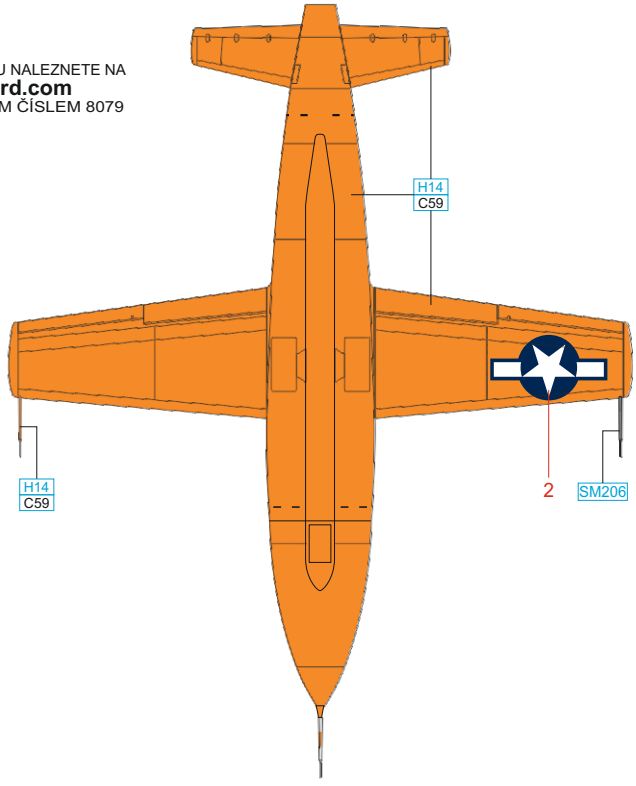
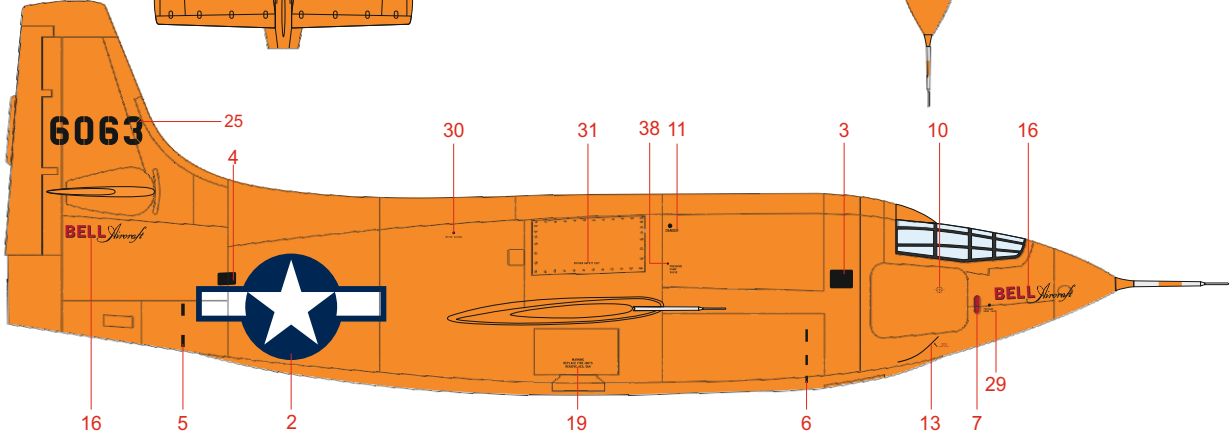
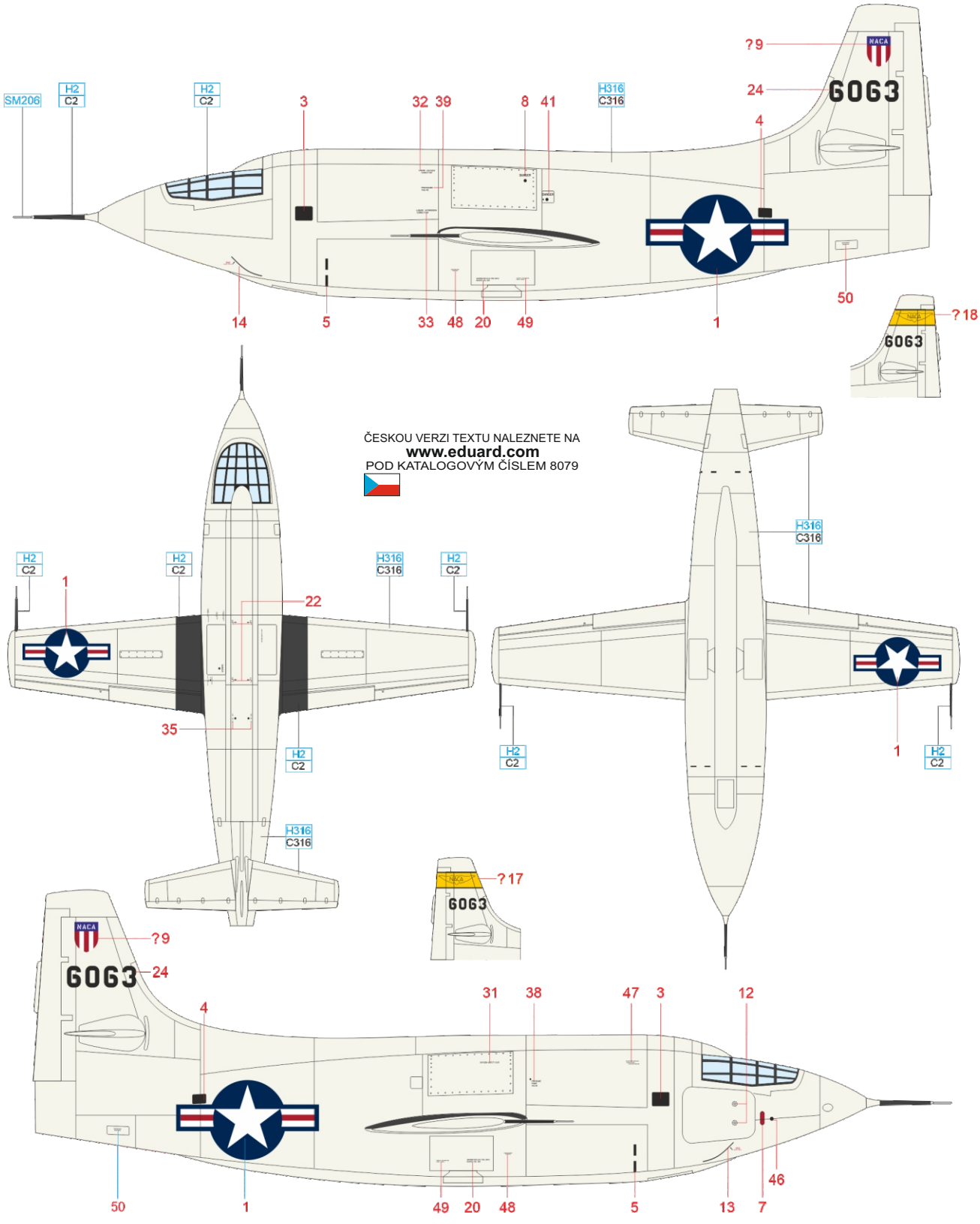




ORANGE H14 C59 | BLACK H2 C2 | SUPER CHROME SILVER 2 SM206

D 46-063, Robert Champine, Edwards AFB, June 1949

Both prototypes of the X-1 plane continued to be used for supersonic flight tests, and the second example received a white paint job after 1948, in which it flew until October 1951. On June 16, 1949, Robert Champine made a test flight to perform wing pressure distribution tests, stability checks, and rolls at Mach 0.91. Nine pilots flew a total of 74 powered or unpowered glide flights with 46-063 until it was retired in October 1951. The aircraft was then converted to the X-1E version.



WHITE H316 C316 | BLACK H2 C2 | SUPER CHROME SILVER 2 SM206

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