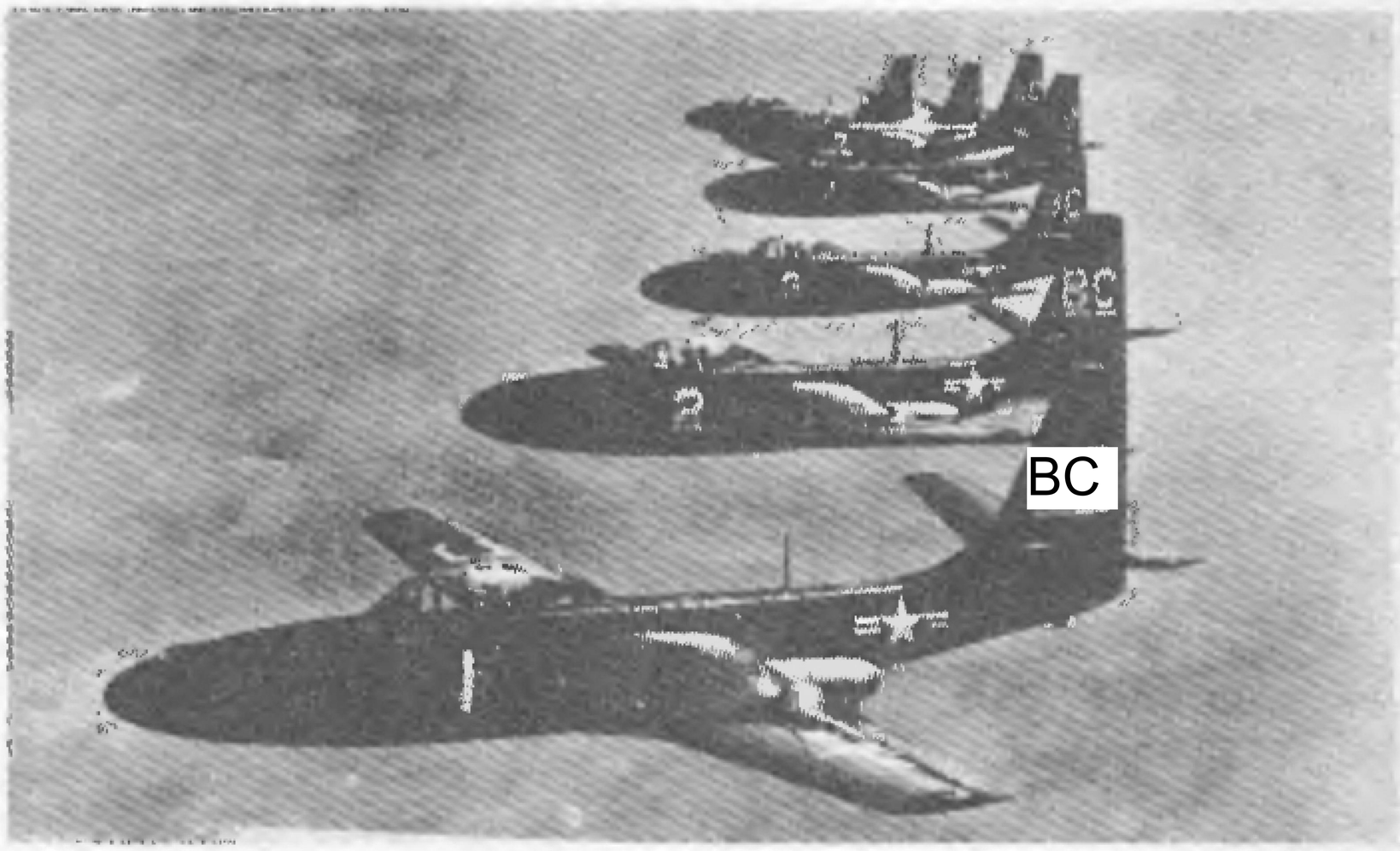
Mc DONNELL FH-1

PHANTOM

MIROSLAV BALOUS

PART II.

The first part of the monograph describing the circumstances of the creation of the Phantom on-board fighter jet, the first of its name, closed the period of the start of serial production of the Phantom, initially designated FD-1 and redesignated FH-1 in 1947. She mentioned the beginnings of the development of reactive engines in the USA, the inclusion of McDonnell in the military-industrial complex and the first take-off and landing of a jet aircraft on board an American aircraft carrier. By early 1947, the first ten machines were ready from an order of sixty Phantoms, and the US Navy was able to proceed with the armament of the first fighter unit. At that time, there were two or three names on the list of Navy pilots with experience in piloting jet aircraft. And since there were no two-seat jet trainers, future Phantom pilots had to switch to jet aircraft directly from piston fighters. The U.S. Navy first sent three average pilots to McDonnell in St. Louis, who, with the help of factory test pilots as instructors, were to verify the intricacies of such retraining. Thanks to the flight characteristics of the Phantom and its overall simplicity, the retraining did not make any extraordinary mistakes. To be on the safe side, however, the Navy selected pilots from those who had flown at least 1,000 hours on piston fighters and who had completed at least 50 take-offs and landings aboard an aircraft carrier.



Phantoms of the US Marine Corps VMF-122 fighter unit

As a whole, VF-17A, based at Quonset Point, Rhode Island, met the conditions. It was commanded by experienced frigate captain R. A. Fuoss, with whom the squadron, armed with Corsairs and Hellcats, went through the Pacific theater. In 1947, VF-17A was under the command of the higher unit CAG-17 (Carrier Air Group = Carrier Air Group), which was commanded by Frigate Captain H. Russell, a veteran of the war with Japan and promoter of reactive technology. First FH-1 flew from St. Louis to NAS (Naval Air Station = Naval Air Base) Quonset Point on 11 August 1947 and the Phantoms were immediately included in pilot training and retraining. They sat in the cabins for solo flights after reading the type manual, after watching a boring film about aerodynamics and after a simple explanation of what is used in the cabin for what! The new Phantoms from the factory came gradually And not fast. Therefore, an agreement was reached with the USAF, according to which some Navy pilots from VF-17A could have flown Lockheed F-80A Shooting Star jets at Lawson Air Force Base. VF-17A reached its full complement of 24 FH-1s in the spring of 1948 and on May 1, with sixteen machines, it flew aboard the aircraft carrier CVL-48 USS Saipan for unit tests. Unlike the USS Franklin D. Roosevelt, from which the Phantom was the first American jet plane took off from the deck, was Saipan once from the smallest ships. Nevertheless, the VF-17A passed the tests in five days and 176 sorties and landings without a single problem. It was only on their return to Quonset Point that the pilots, exhilarated by their success, forgot to observe discipline. The result was a collision of two Phantoms and the death of the squadron commander Fuosse. A few weeks later, VF-17A flew to the aircraft carrier CVB-43 USS Coral Sea (sister ship of F. D. Roosevelt) for its first on-board deployment. In August 1948, the US Navy units were reorganized. VF-17A became VF-171 and moved from Coral Sea to CVL-47 USS Philippine Sea. In early 1949, she participated in joint exercises of the American and Canadian armed forces and completed her first night operations from the deck. That was the end of the Phantom VF-171. Progress in the development of reactive technology was rapid and the Phantom was inevitably becoming obsolete. Among other things, competing jet fighters of the first generation appeared on the scene, of which the North American FJ-1 Fury and Grumman F9F-2 Panther were produced in the saria. By the summer of 1948, VF-171 was flying with the successors to the Phantom, McDonnell's new machines, also twin-engined F2H-1 Banshees. The decommissioned Phantoms were taken over by VF-172 in Jacksonville, Florida. They served as training for the transition from piston Corsairs to jet Banshees. Even before the FH-1 was completely phased out, a three-member aerobatic group called the Gray Angels, nicknamed the Group of Admirals, was formed at the base at Patuxent River. All of its pilots held the rank of admiral - it was led by Rear Admiral Daniel V. Gallery and other members were Rear Admirals Apollo Soucek and Edgar A. Cruise The group became famous mainly for its performance at the opening ceremony of New York's Idlewild Airport (now J. F. Kennedy International Airport). By the summer of 1949, the U.S. Navy combat units were already without Phantoms. The remaining machines were transferred to the reserve units of the "weekend pilots" (US Navy Reserve), where they lasted until the summer of 1954.

Meanwhile, in the fall of 1947, another branch of the US armed forces - the Marine Corps (ÚSMC = US Marine Corps) - received Phantom jets. The VMF-122 Hatching Unit was established at MCAS Beaufort, commanded by Lieutenant Colonel M. E. Carl, who in August 1947 held the world speed record of 1047.356 km/h with a Douglas D-558-I Skystreak. With more modern machines than the Phantom in sight, VMF-122 used its first jet aircraft for training. And also for advertising. She founded a four-member aerobatic group called Marine Phantoms (sometimes called Flying Leathernecks, or after the nickname of marines Flying Leather Necks), whose member was also the fifth FH-1 for solo aerobatics.

In the summer of 1949, VMF-122 was joined by a new commander, Major L. Everton, as well as new McDonnell F2H-1 Banshee aircraft. But before that, the unit managed to get rid of the VF-171 navies participate naval manoeuvres in the Caribbean. VMF-122 experienced two accidents with a happy ending, which are worth mentioning. Both of them

The Phantom initially failed both engines in flight and refused to restart. The machine, piloted by Lieutenant S. W. Rees, flew in a gliding flight to a flat field 30 km away near La Romana in the Dominican Republic, where it landed safely on the landing gear. From there, the mechanics transported the aircraft to the airport in the capital Ciudad Trujillo (today Santo Domingo). The Phantom, in whose cabin sat Marine Corps Sergeant L. Blas, was not so lucky. He landed after a gliding flight with the landing gear retracted on an open beach a few kilometers from the first FH-1

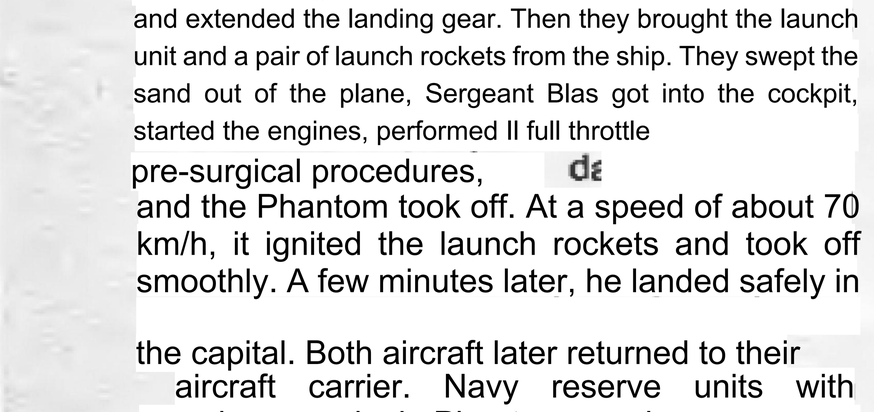
and looked like it was going to be cancelled. When the rescue team arrived, they found that the plane was undamaged. She lifted him out of the sand and extended the landing gear. Then they brought the launch unit and a pair of launch rockets from the ship. They swept the sand out of the plane, Sergeant Blas got into the cockpit, started the engines, performed II full throttle

pre-surgical procedures, da

and the Phantom took off. At a speed of about 70 km/h, it ignited the launch rockets and took off smoothly. A few minutes later, he landed safely in

the capital. Both aircraft later returned to their aircraft carrier. Navy reserve units with squadrons or single Phantom specimens were stationed at NAS Willow Grove, NAS Norfolk, NAS Birmingham, NAS Miami, NAS Columbus, NAS Dallas, NAS Glenview, NAS Grosse Isle, NAS Minneapolis, as well as NAS St. Louis. In 1954, the Phantoms ended up at the same airport where they first

took off.



FH-1 before touchdown. The flaps, landing gear and catch hook are extended. The aircraft is shortly after being decommissioned from VF-171 and completely in naval tradition, it lands with an open cabin, in front of which there is a fixed inclined rod



FH-1 Prod. 111760 at a time actuation at the Naval Aviation Test Unit Centre NATC



Factory photo FD-1 art. No. 111753 with additional tank

By this time, a bright future was already looming for a new member of the St. Louis military-industrial complex. The production facilities expanded, the number of employees increased, and with new orders came state money. Several prototypes were tested - the XF-85 Goblin fighter

and XF-88 Voodoo helicopters as well as XJ-1 and XHJF-1 helicopters. Production of the F2H Banshee ended, the F3H Demon was built for the Navy, and work was underway on the XF-101 Voodoo for the Air Force and the XF4H Phantom for the Navy. McDonnell Aircraft Corporation has become one of the largest companies in the entire state of Missouri in fifteen years. And space technology was already in sight.

After 1954, the decommissioned Phantoms were gradually transferred to the open naval aviation depot at Litchfield Park

in the desert region of Arizona. A few planes made it from here to museums, others patiently awaited the oxyacetylene of scrap dealers. Ten years later, in 1964, in Litchfield Park, three surviving examples of the FH-1 were selected by Progressive Aero Inc. of Fort Lauderdale, Florida. Two aircraft without military equipment were brought to airworthy condition, the third served as a source of spare parts. The company also owned the Morane-Saulnier MS-760 Paris light commercial and training French jet aircraft and its program was to train civilian pilots on jet aircraft. Progressive Aero Inc. operated for only a year and then the flight career of the last McDonnell FH-1 Phantom aircraft finally ended.

TECHNICAL DESCRIPTION

The McDonnell FH-1 Phantom was a twin-engine, all-metal, single-seat carrier-based fighter aircraft with a straight wing, single tail surfaces and retractable nose type landing gear.

The fuselage of the aircraft had an alclad half-shell structure with a smooth cover with recessed rivets. The central part with three reinforced bulkheads, carrying the wing hinges, between which the fuel tanks were placed, was connected to the forward

cabin part with the nose.

The single-seater cab was covered by a windshield with front armoured glass and side shaped panels and with a rearward sliding cover, shaped from a single piece of transparent material The cabin was equipped with the then common a set of devices, was pressurized, heating and equipped with an oxygen breather. The equipment lacked the radio compass already common at that time - it was replaced by a classic magnetic "nautical" compass, carried by the upper part of the windshield frame. The pilot's seat was not ejection, but it was adjustable and protected from the rear by an armor plate and headrest. In the very nose there was a place for a photo machine gun And behind it, under the muzzles of the machine guns, was the front section of the radio equipment. Then followed the weapons section and ammunition. In the lower part of the cabin section there was a shaft for the nose leg of the landing gear.

The central part with the tanks was connected to the rear fuselage dll carrying the tail surfaces. Right behind the tanks was the second section of radio equipment with antennas. Underneath it, it had a landing hook folding mechanism instead of a mechanism. The end of the fuselage carried an auxiliary spring-loaded spur.

Double-girder wing with ribs and a smooth cover with recessed rivets consisted of four parts. The inner ones extended at the fuselage also formed jet engine nacelles with air intakes and air ducts. The main landing gear legs were anchored to the last ribs of the inner parts, retracted towards the fuselage into the appropriate shafts. On the underside, there were hydraulically controlled inner sections of flaps.

The outer parts were attached to the inner parts. hydraulically folded upwards for storing the aircraft on the ship. On the auxiliary spar they carried all-metal ailerons with two-part trim tabs and an outer section of split flaps. Closer to the rear beam, there were retractable brake plates up and down in duplicate. The wing profile was of the laminar type.

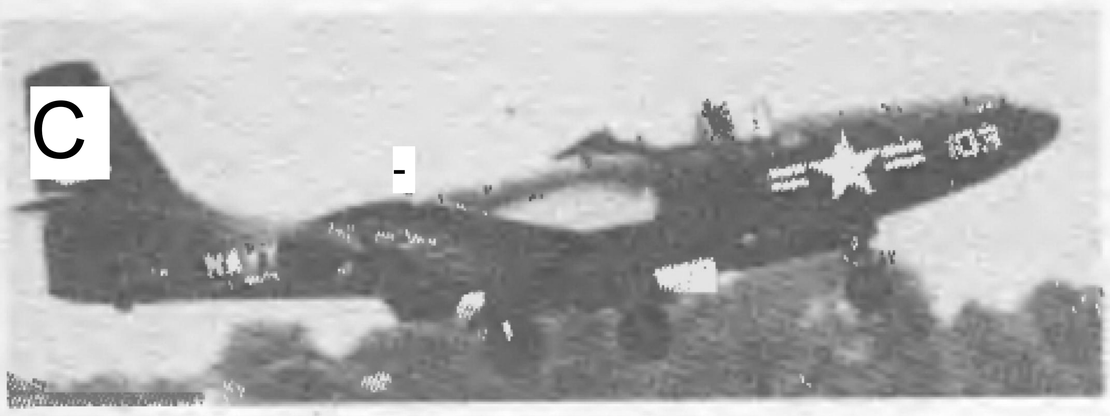
Tail surfaces. The double-girder keel was a fixed part of the fuselage. She carried a speedometer tube and hinges with an all-metal rudder with a balancing tab. The two-part stabilizer of the horizontal surface had a significant camber and also a double-beam structure. It carried a two-piece elevator with trim tabs on both halves. The steering was transmitted by rods and cables without power steering.

The nose type landing gear was on all legs with hydraulic shock absorbers single wheels. The front one was equipped with side vibration dampers, the main one with hydraulic disc brakes. The landing gear was electrically retracted into the shafts - the nose was covered by a two-part door, the main one by a three-part.

In an emergency, the landing gear could be extended by gravity

The power unit consisted of a pair of Westinghouse turbojet engines J-30-WE-20 Or Pratt & Whitney J-30-P-20 with 7 kN take-off thrust at 17,000 rpm and 815°C upstream temperature. The nominal thrust was 5.8 kN at a speed of 15,700 rpm.

Phantom from the Columbus NAS used in 1953 by the backup unit kou



The civilian FH-1 of Progressive Aero inc. had a radio antenna under the nose Compass



AI photos and drawings, IPMS Q, and archive

The single-shaft J-30 engine had a ten-stage axial compressor (compression ratio was 3.8:1), an annular combustion chamber with 24 injection nozzles, and a single-stage axial turbine. There was an unadjustable cone in the outlet nozzle. Pallvem was 100/130 aviation gasoline. The engine installation included a loss-making

Oil system

with a tank inside the inner parts of the wing outside the inlet opening, an oil cooler in the air inlet duct and the appropriate pump. From drive housings

The engines were powered by fuel

and hydraulic pumps and generators, as well as an air compressor. The engine had a diameter of 483 mm, a length of 2388 mm and a front cross-section of 0.18 m2. The weight of the "dry" was 324 kg. The start-up was electric-

Ké.

The aircraft carried fuel in three rubber self-locking fuselage tanks. The front one had

I have 689 1, medium 382 I and rear 348 1. Fueling was gravitational with necks on the top of the fuselage. It was possible to hang a metal or laminated additional jettisonable tank for 1113 | Fuel.

The armament consisted of a battery of four 12.7 mm Colt-Browning machine guns in the nose. The weapon section of the fuselage was accessible through hinged panels and could accommodate magazines with belts of 325 rounds per barrel. The gyroscopic sight of the Mk.23 type was in the cabin behind the windshield.

The aircraft did not carry any other armament, as there were no pylons under the fuselage or under the wing.

Systems: Electric with generators on motors

And with the battery battery, it powered radio equipment, instruments, navigation lights, cabin heating, landing gear retraction, etc. The hydraulic one with pumps on the engines and a pressure vessel controlled the landing gear brakes, flaps, brake plates, landing hook and wing tilting. The pneumatic one ensured the sealing of the cabin, the operation of some of the instruments yu, the loading of weapons, etc.

Second prototype during trials on an aircraft carrier

And some production machines had a solid inclined steel rod mounted in front of the windshield of the cabin, the task of which was to catch the ropes of the emergency barrier on board the ship or possibly a braking rope that could "jump" over the low bow and

damage the cabin and the pilot in NL.

MAIN TECHNICAL DATA

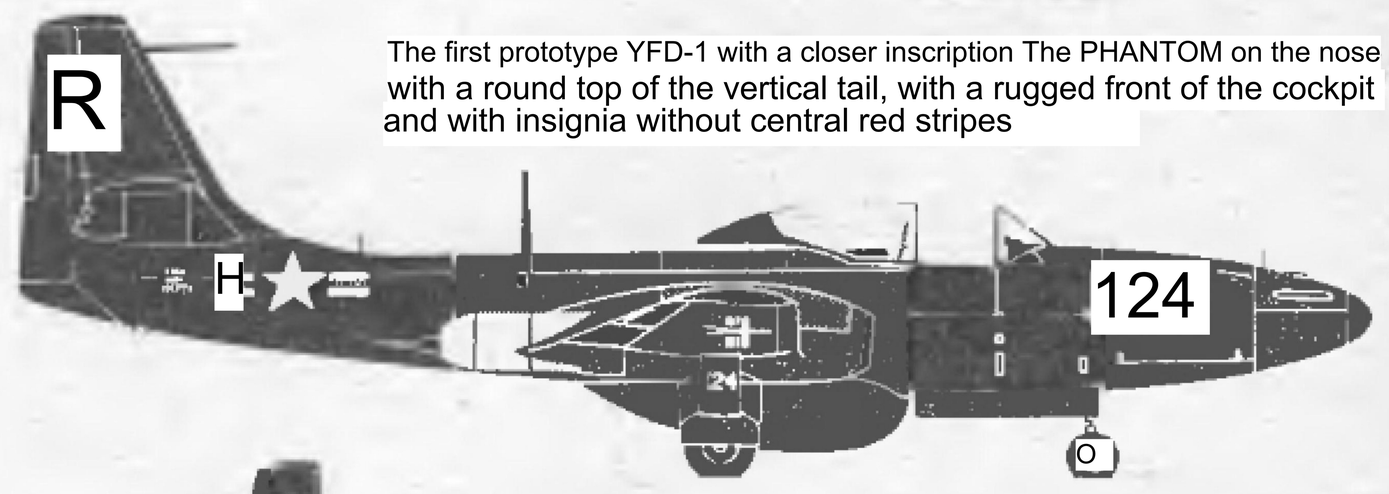
Wingspan	12.42 m EEEEE
Wingspan with folded wing Length	4.95
Height	11,81 m
	4.32 m
height with wing folded Wing Wing	5,12 m
wing Wing empty	25.45 m2
weight Take-off weight (7.9g limit)	3039 kg
Max. takeoff weight (5.5g limit) Max. landing	4524 kg
mass. for airship	5870 kg
Max. speed without ad. Tanks near the ground	4264 kg
	780 km/h 780
at altitude 4570 m	km/h 494
Cruising speed at 6100 m Initial rate	km/h 24,4 m/s
of climb Ascent to 9150 m	11 min 10
Maximum range with addition. Tanks	515 m 1465 km

Successor to the Phantom Banshee, pictured in the F2H-2 version with wingtip tanks



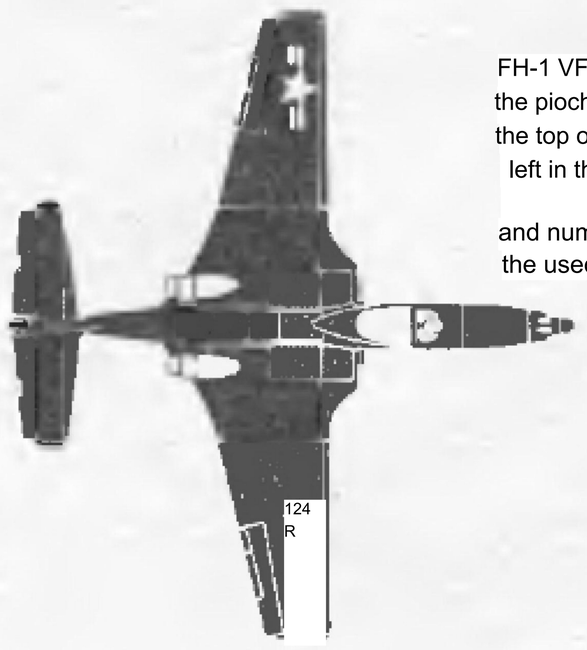


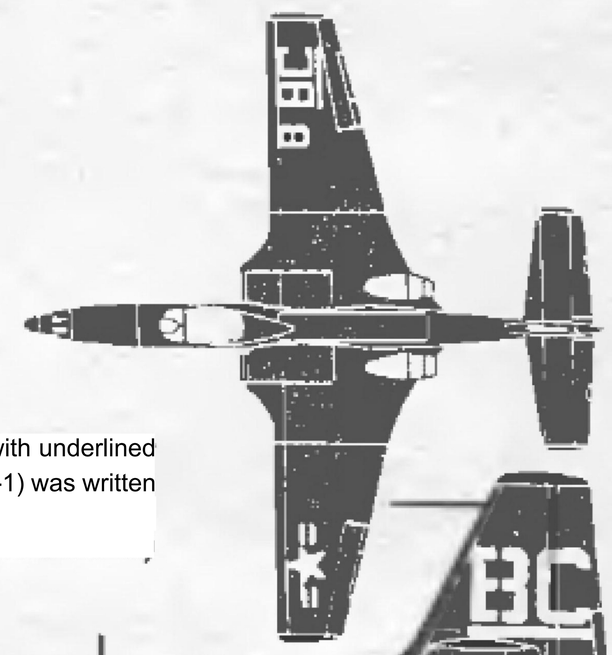
The first prototype YFD-1 with a closer inscription The PHANTOM on the nose with a round top of the vertical tail, with a rugged front of the cockpit and with insignia without central red stripes



FH-1 VF-17A units. The machines were painted with a glossy dark blue paint on all the piochs (it differs only slightly from the color on the markings), while the paths on the top of the wing spices were matte black. The outlet nozzles of the engines were left in the color of metal. Maya's drawing shows the location of characters, letters

and numbers on the wing (it was identical from above and below). The number of the used car was also repeated in small on the chassis cover

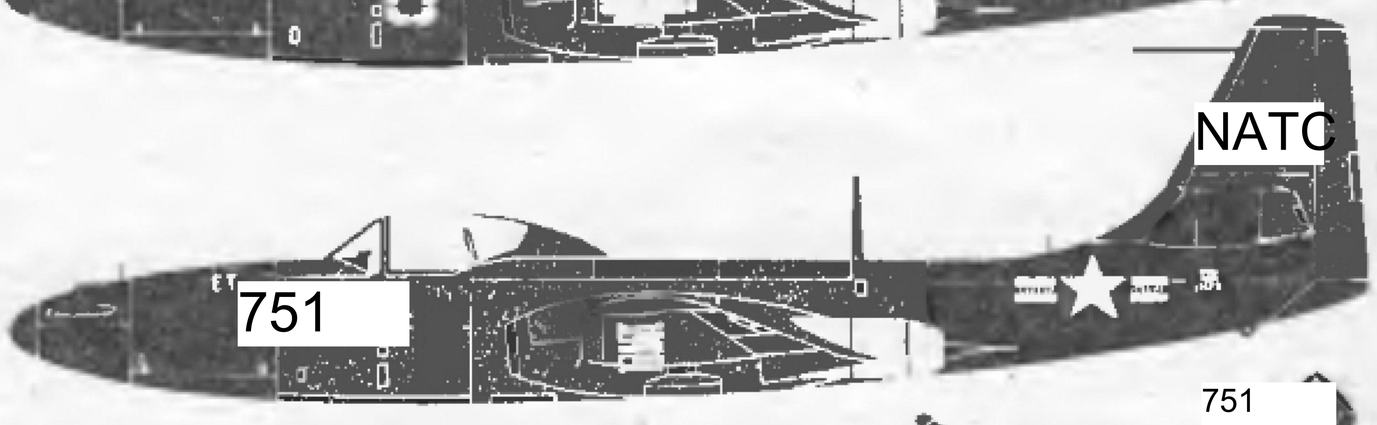




Phantom of VMF-122 in 1948, when its machines were marked with underlined letters BC. Behind the fuselage insignia, the type designation (FH-1) was written in white letters and numbers. Affiliation (NAVY or MARINESI

and serial number





FH-1 with prod. No. 111751 Naval Air Test Center

Phantom Marine Corps (VMF-122 Squadron) after the letters were swapped for the LC. The depicted machine had a white nose, the end of the fuselage and the top of the tail and carried

Even the white U.S. MARINES inscription on the nose

