



The Story of the
MCDONNELL

PHANTOM

TWIN-JET FIGHTER

Designed and developed in collaboration
with the United States Navy



From any point of view, the Phantom typifies modern design at its best. The front view portrays its tailored wing-roots, fuselage, and intake ducts.

The PHANTOM...

Fleetest of the Fleet

One of the most noteworthy achievements in recent aviation history is the "PHANTOM," America's first all-jet airplane to land and take off from an aircraft carrier.

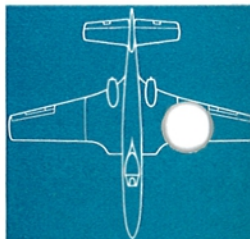
The PHANTOM is important *functionally*, because it brings the high speed and rapid warm-up of jet propulsion to the air might of the United States Navy. It is important *aerodynamically*, because it furnishes vital information to all aviation pioneers, who are blazing new trails in the sky.

Behind the PHANTOM is a great story . . . a story that began early in 1943. At that time, the U. S. Navy enlisted the aid of McDonnell Aircraft Corporation in St. Louis. The assignment: to transform into reality, the Navy's dream of a carrier-based fighter, powered by jet propulsion.

It was practically starting from "scratch." Nobody had ever before tried it . . . this plane must be a prototype.

How many engines should it have? What kind? Size? How much fuel will it have to carry? What is its proper weight? Wing span? Airfoil? Loading? Design?

McDonnell's engineers and the Navy's Bureau of Aeronautics rolled up their sleeves, lit the midnight oil, sat down to work out the solution.



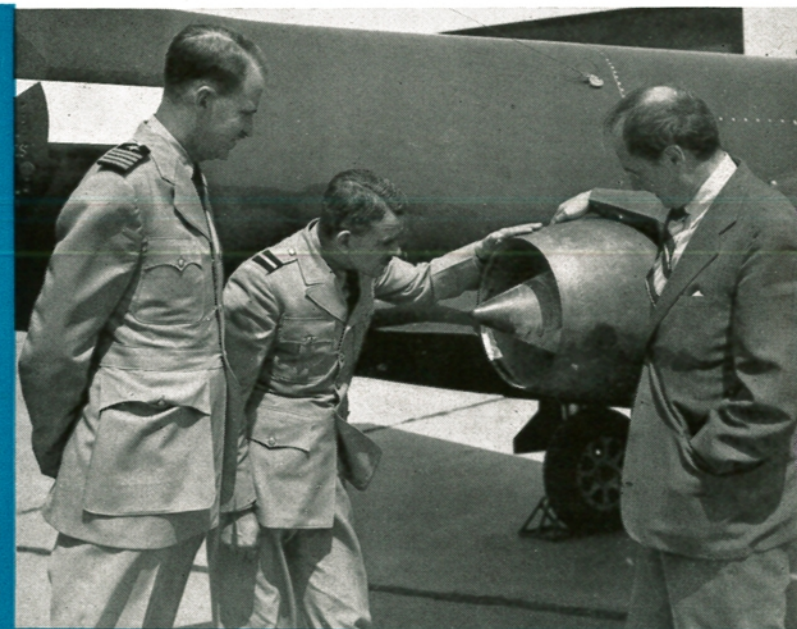
Many, many months later . . . in January, 1945 . . . after thousands of drawings and blueprints, tons of fabrication metals, special tools and machinery, myriad mechanical details, and centuries of man-hours . . . this plane, designated the Navy XFD-1 and named the PHANTOM, made its first test flight.

It was an impressive success. This amazing airplane, powered by two Westinghouse 19B axial-flow turbo-jet engines, could achieve a top flight speed of more than 500 miles per hour. Yet it had stability and control characteristics at *slow* landing speeds comparable to conventional carrier-based planes. Its ceiling, over 35,000 feet. Its range, over 1,000 miles. And it could fly that distance on either of its engines . . . a capability which prompted its now-famous slogan: "Streaks through the air with an engine to spare."

And what sweet lines! The fuselage, almost 40 feet long, was sleek and trim and graceful from its pointed nose to its towering tail. The wings, just 16 feet, 3 inches when folded, boasted a span of 40 feet, 9 inches when spread.

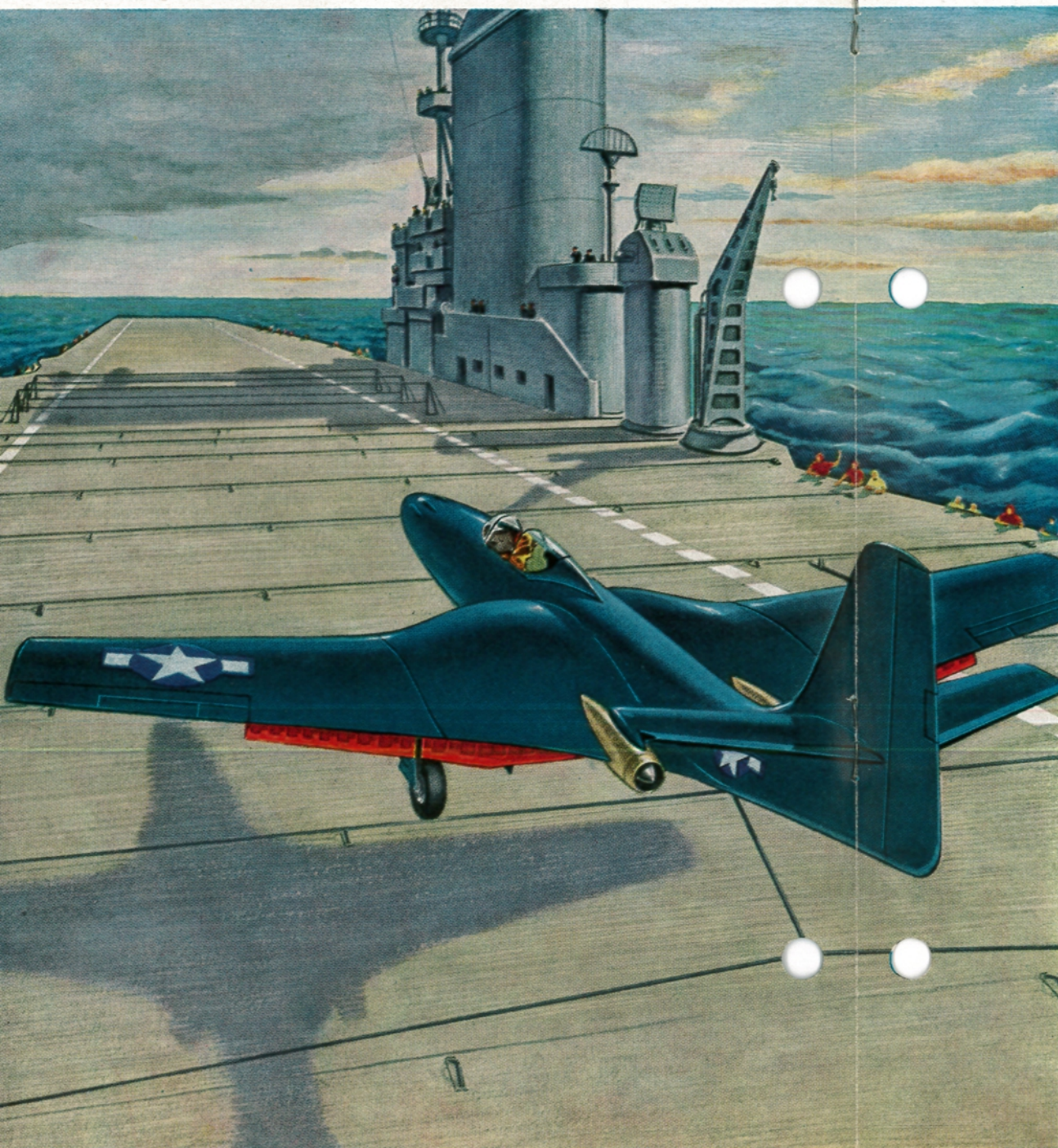
After the PHANTOM'S test flight came more months of testing, checking, rechecking, improvements, adjustments . . . more blueprints and man-hours and machines.

Then came the big day . . .



J. S. McDonnell (right), president of the Corporation, discusses the Phantom with Bureau of Aeronautics Air Commodore Frank Whittle, inventor of the first successful gas turbine engine, and Capt. N. F. Garton (left), Bureau of Aeronautics, U. S. Navy.

Another *first* for the U. S. Navy



JULY
21
1946

Our scene shifts to a point at sea, about 35 miles off the Virginia Capes. There, steaming into the early morning wind, was the pride of the U. S. Navy... the magnificent carrier, Franklin D. Roosevelt.

On the flight deck, a select audience of Navy officers, aeronautical experts and press representatives watched as the Phantom lowered its wings, started its engines. Just two minutes later, after a 400-foot run, the Phantom pulled up and away into a beautiful, climbing turn... all with the ease and grace of conventional carrier-type aircraft.

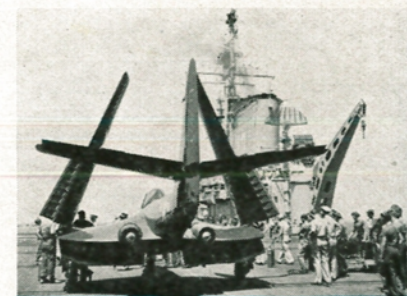
Then without retracting the wheels, Lt. Comdr. Davidson, the pilot, banked her around for a landing approach, came in for a perfect landing.

The jet-propelled fighter had qualified for sea-duty, foreshadowing a new era in naval aviation history.

Four more times that day, the Phantom took off and landed. In these subsequent tests, the Phantom proved it could take off with the astoundingly short run of only 360 feet... that it could take a "wave-off" right in stride... that it possessed excellent stability and control at low speed.

Thus, the Phantom proved itself... bringing new laurels to the splendid records of Naval Aviation achievement... and to McDonnell Aircraft... designers and builders of America's first carrier based all-jet fighter.

On deck, just before the big show, the Phantom shows off its compact wing-fold, unique engine housing, sleek upswept tail.



And here's the history-making take-off. The Phantom used less than 40% of the available flight deck for its take-off run.

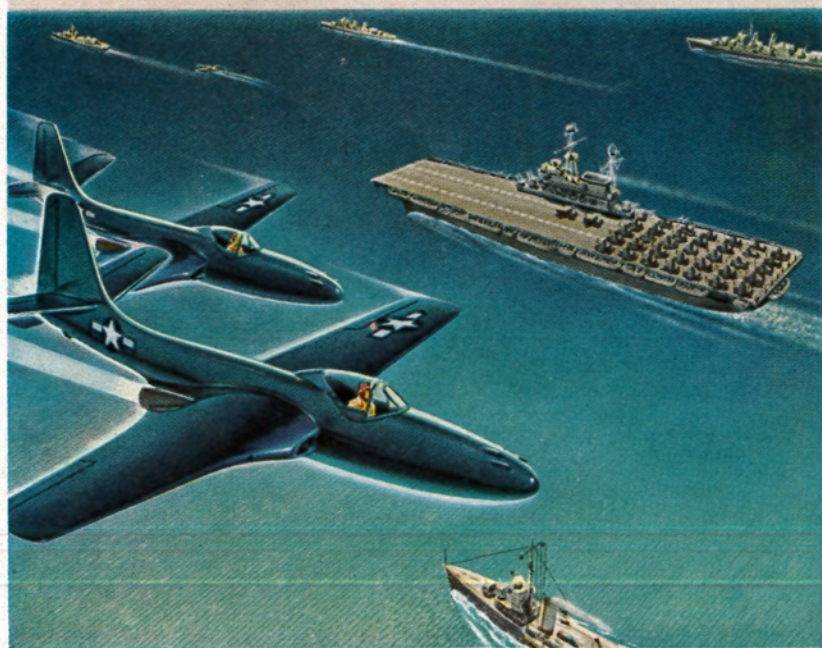


THE PHANTOMS AWAY . . . before you can say "JET-PROPULSION!"

Not only is it the fleetest of the fleet . . . the U. S. Navy's first plane with a speed over 500 m. p. h. . . . the Phantom has another unprecedented advantage over conventional type fighters . . . its turbo-jet engines require practically no warm-up, a vitally important factor in a carrier-based fighter's tactical use.

MCDONNELL
Aircraft Corporation

MANUFACTURERS OF
AIRPLANES and HELICOPTERS
SAINT LOUIS, MISSOURI • U. S. A.



. . . now rolling off McDonnell production lines

Soon, the United States Navy will have a full complement of McDonnell Phantoms for its carrier squadrons.

The production Phantoms will differ from the prototype only where a change is an improvement. For instance, the production Phantoms' turbo-jet engines will develop almost a third more thrust than the experimental XFD-1.

First deliveries of these production Phantoms, from the McDonnell Aircraft Corporation plant in St. Louis, were made to the United States Navy in the latter part of 1946.



Among McDonnell's activities are other Navy projects . . . many of them revolutionary, requiring the "pioneering" abilities which have distinguished this modern St. Louis corporation. These projects cover all phases of aircraft endeavor, from original design to completed production, utilizing the collective cooperation and skills of personnel in Engineering, Manufacturing and Management.

Some of these Navy products are, of course, "under wraps." Of those not restricted, the most prominent are:



THE KUD-1. The "Gargoyle," a guided missile, is a 1000 lb. self-propelled (pilotless) armor-piercing bomb. *Radio-controlled*, it seeks its target at more than 600 miles per hour.



THE KDD-1. The "Katydid," also a guided missile, is radio-controlled and powered by a McDonnell reso-jet engine. It is used as a target in training aircraft gunners.



THE XHJD-1. Not only the world's largest helicopter, the "Whirlaway" is also history's first twin-engine helicopter. Designed and developed by McDonnell and the Navy, the XHJD-1 is now undergoing advanced flight research development.



Dr. A. S. Compton (left), Chancellor of Washington University and world-famous scientist who played a vital role in atom bomb development, signs an agreement with J. S. McDonnell for an important project in aircraft research.



McDonnell Aircraft is more than "just another production plant." It is a *pioneering* plant . . . designing, engineering, developing and producing entirely *new* products.

And new products must come from new ideas, new techniques, which must be backed by exhaustive research, sound engineering practice, and adequate plant facilities.

That calls for skilled personnel. The nearly 3000 people working at McDonnell, include more than 500 engineers and designers; about 2000 manufacturing specialists; and hundreds of others who guide the wheels of organization and administration, coordination and finance.

Just as McDonnell pioneering in the *past* has been largely responsible for our *present* production, the practical dreams of McDonnell engineers *today* will keep production lines humming *tomorrow*.

MCDONNELL *Aircraft Corporation*
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