

AEROPLANE

DATABASE

The McDonnell F3H Demon

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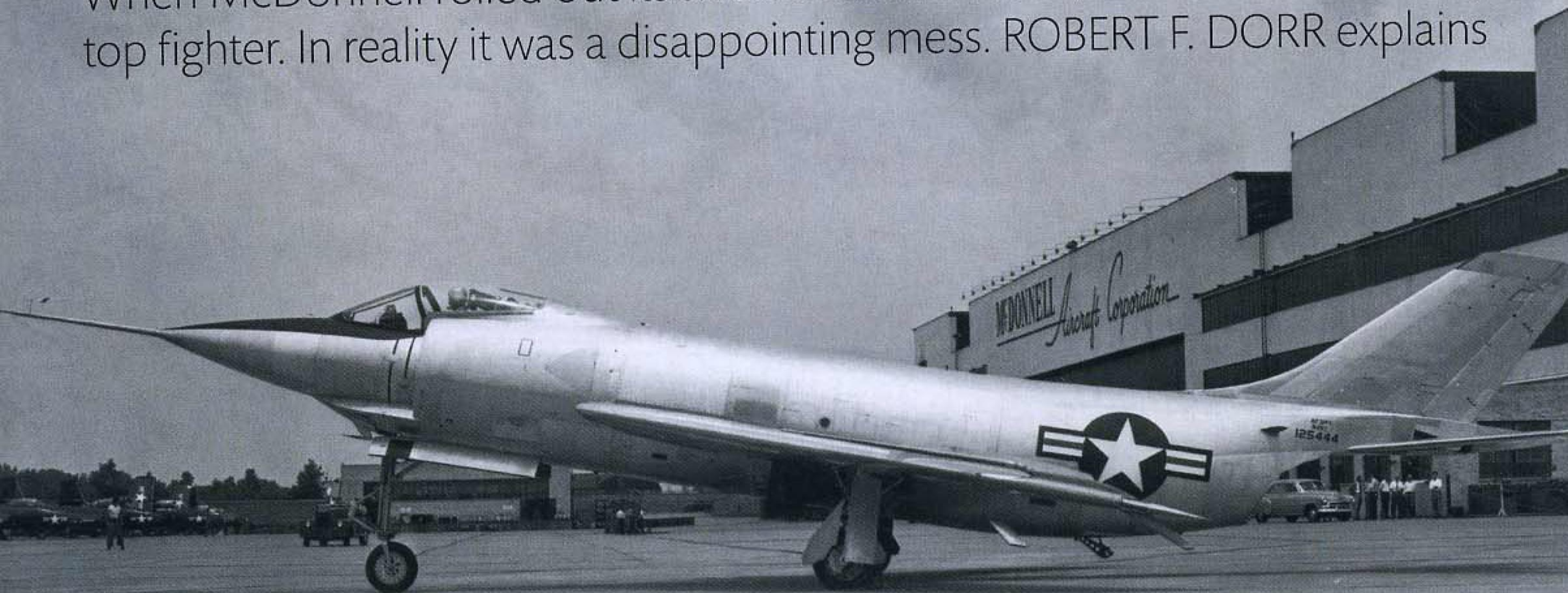
**Includes
cutaway
& scale
drawings**



MAIN PICTURE Its pilot wearing the then-fashionable all-gold bonedome, McDonnell F3H-2N Demon BuNo 137033 of VF-61 – "The Jolly Rogers" – leaves a carrier in 1956. **INSET** The original batch of F3H-1Ns, including BuNo 133491, were a complete disaster, many never even leaving the ground. **JUANITA FRANZI/AERO ILLUSTRATIONS** © 2008

McDonnell F3H Demon

When McDonnell rolled out its sleek Demon in 1951, it was as the US Navy's top fighter. In reality it was a disappointing mess. ROBERT F. DORR explains



ABOVE The first XF3H-1 prototype, BuAer 12544, photographed looking purposeful and futuristic at the McDonnell factory at St Louis, a month before the aircraft's first flight on August 7, 1951.

HE WAS THE man no-one ever addressed by his first name. He was never James, and to call him Jim would have

been unthinkable. James S. McDonnell founded the McDonnell Aircraft Co in 1939, with premises at the former Curtiss-Wright factory at Lambert Field, St Louis, Missouri.

McDonnell created and nurtured a great fighter dynasty, making fighters with names like Voodoo, Phantom, Eagle and Hornet. But before his jets dominated the Cold War and the Vietnam era, his "family" was a small one; he knew all of his employees by their first names and they addressed him as "Mister Mac". They worked with him on the sole twin-piston-engined XP-67 of the Second World War and the US Navy's (USN) FH Phantom and F2H Banshee jets of the post-war era. He was stiff, aloof and serious, but much-respected by his employees. The F3H Demon was the last product to emerge from his factory doors when his company was still of reasonable size, when folks in the "MacAir" family (as they called it) still knew each other, and at a time when America had 33 military aircraft production lines instead of four.

Although it may have looked sleek and rakish, the Demon was arguably the closest thing McDonnell ever had to a failure.



ABOVE McDonnell's first jet design, and the first US Navy jet fighter, was the FH-1 Phantom, which first flew on January 26, 1945. Some 60 production models were built, but its career was brief.



ABOVE The Demon's immediate predecessor was the F2H Banshee, with a similar twin-engine layout to the Phantom. With greater range and versatility, it was much used in the 1950-53 Korean war.

A product of the company that created the global trend toward fighters with two engines, the Demon was the first – and last – McDonnell warplane with one powerplant. Unfortunately, in those early days, it turned out to be the wrong one.

On September 30, 1949, a month after the Soviet Union detonated its first nuclear device and a year before the abrupt appearance of the Mikoyan-Gurevich MiG-15 in Korea stunned the West, the USN's Bureau of Aeronautics (BuAer)

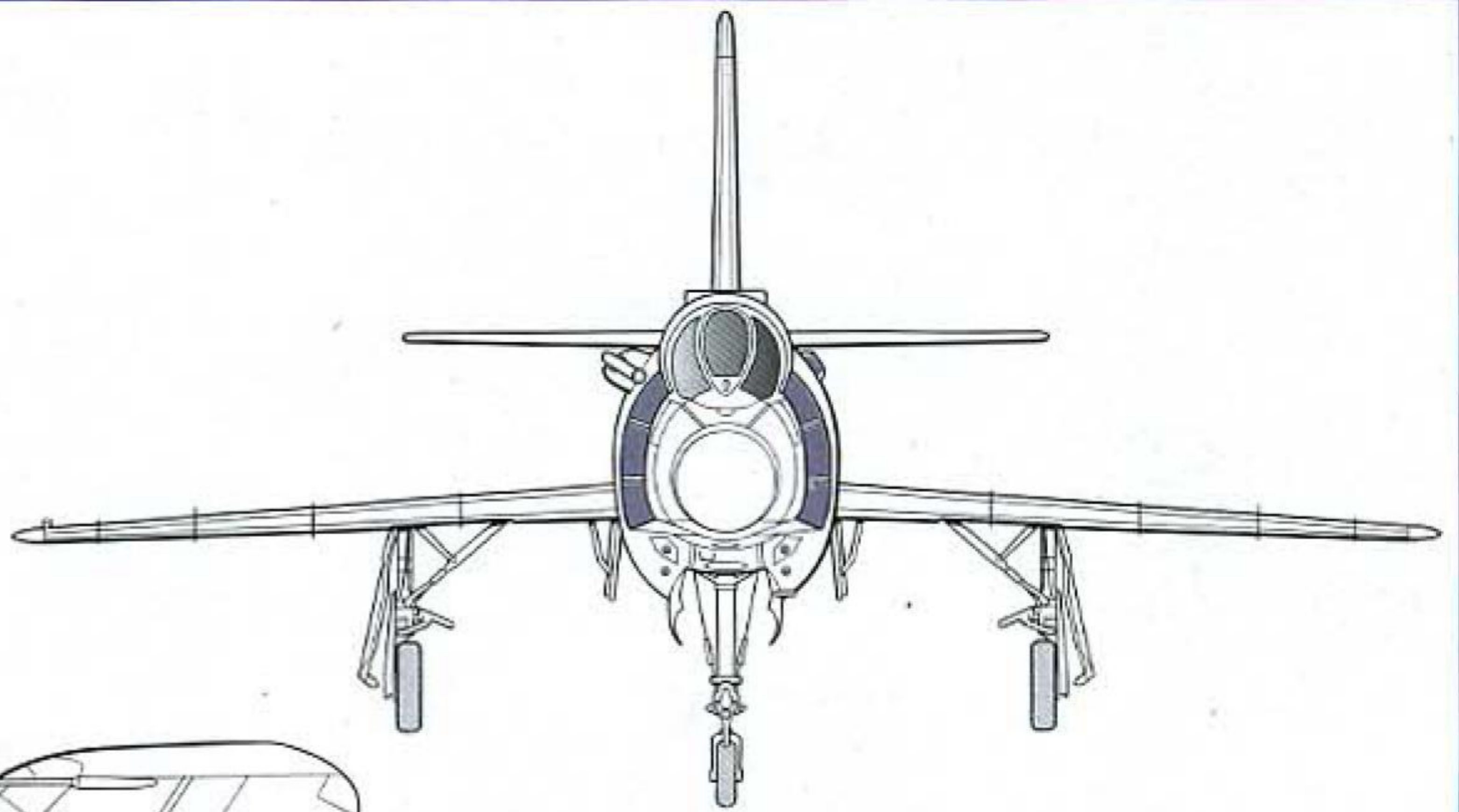


Test pilot for the XF3H-1's first flight was Robert Edholm, a highly experienced airman who had also completed the maiden flights of the company's Banshee in 1947 and the XF-88, precursor of the F-101 Voodoo, in 1948.

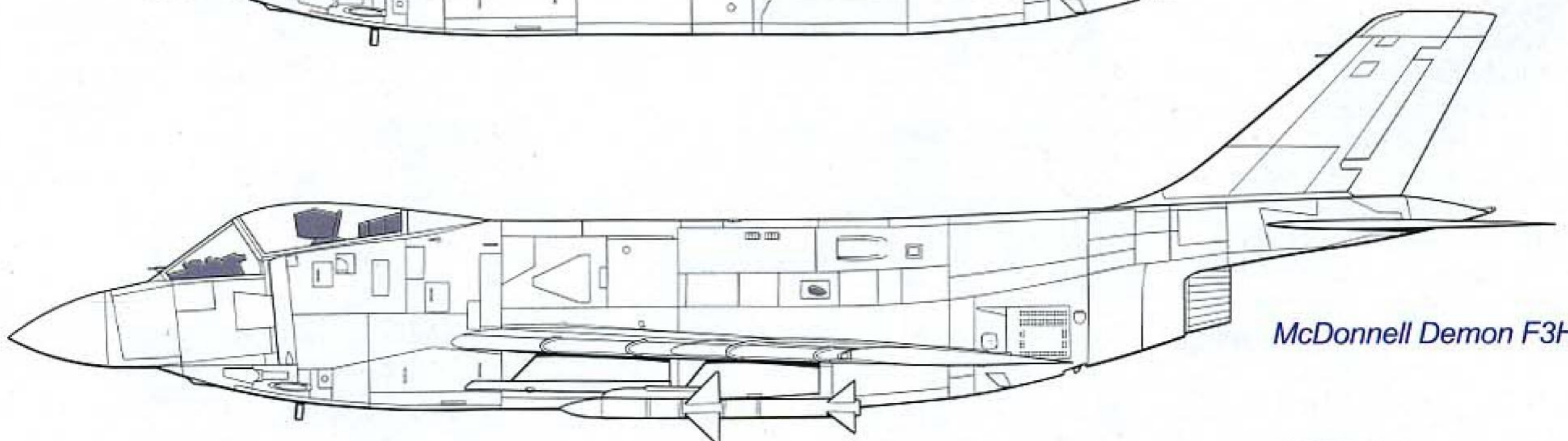
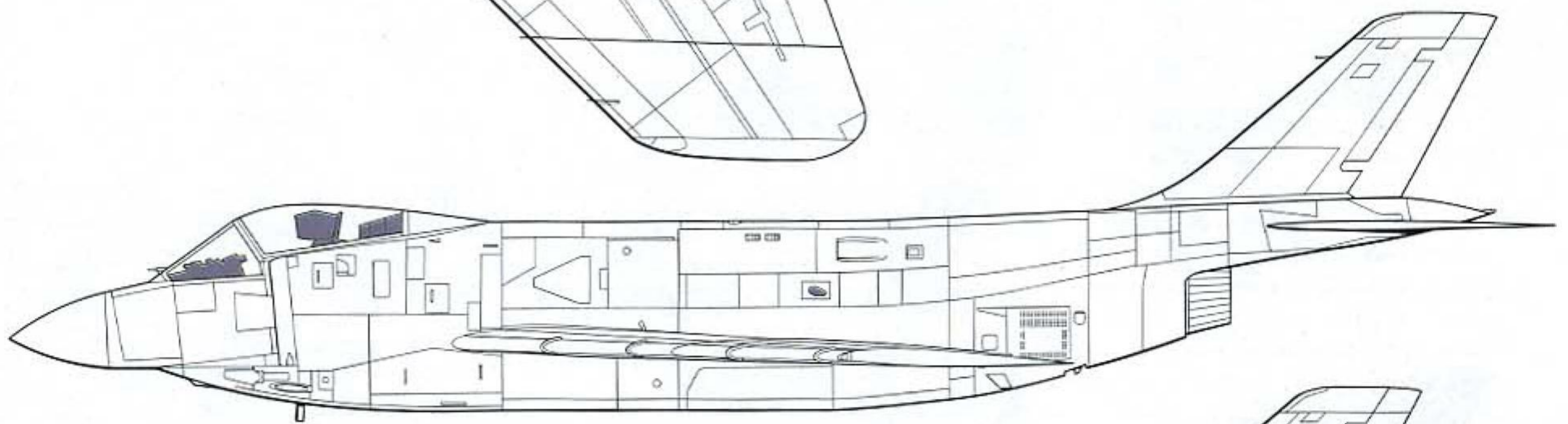
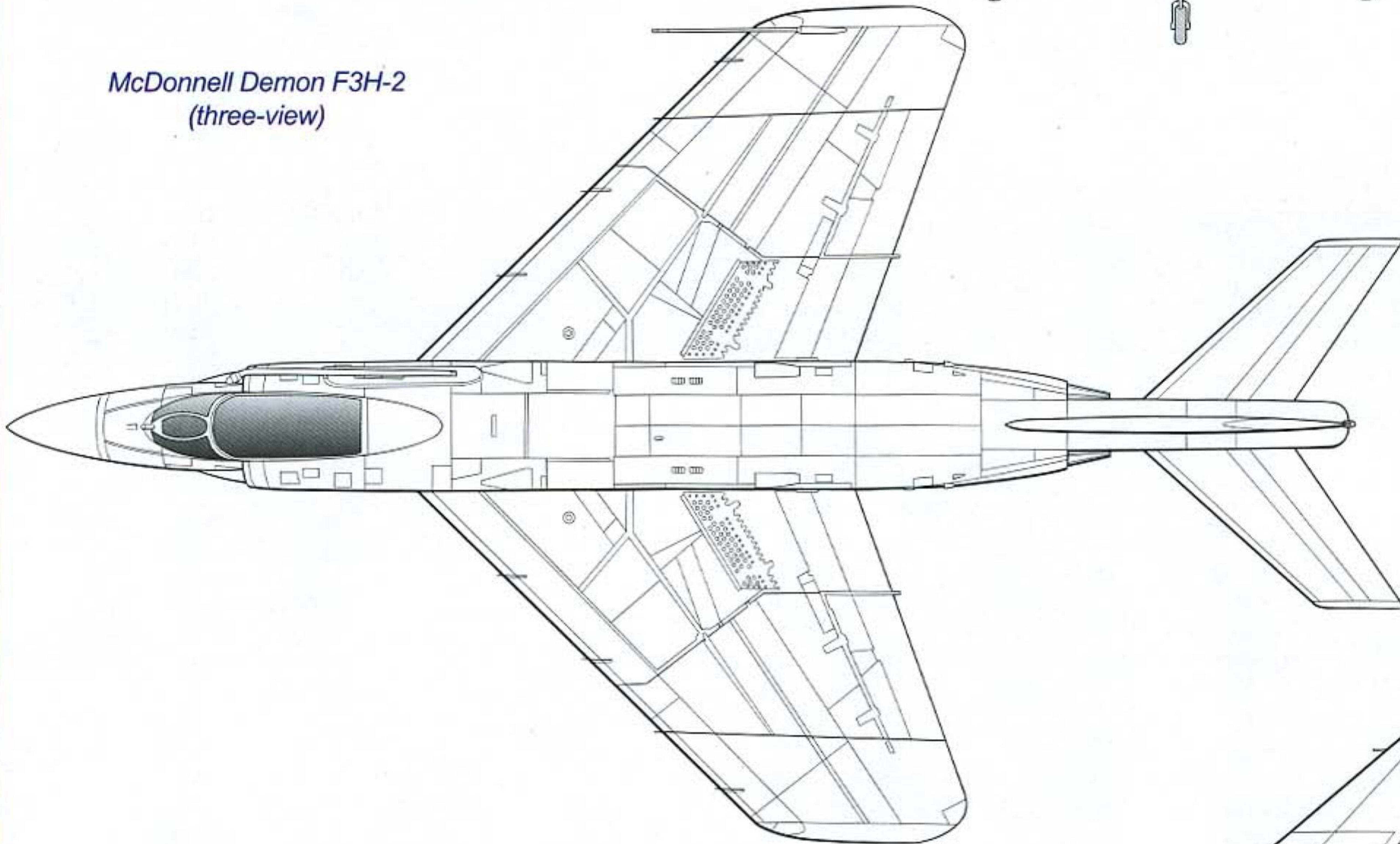
went shopping. It issued a contract for two XF3H-1 prototypes of a high performance, carrier-based interceptor. The initial plan was for the aircraft to be powered by the Westinghouse J40 turbojet, the engine also being intended for a range of other aircraft, including the Douglas A3D Skywarrior carrier-based bomber and the same company's F4D Skyray all-weather interceptor, as well as the Grumman XF10F-1 Jaguar "swing-wing" naval fighter.

William Jackson, who worked in the St Louis plant in those days when "Mister Mac" would tour the floor at lunchtime, called the J40 "an unspeakable catastrophe". Harold Andrews, who was an aeronautical engineer at the BuAer, called it "a poor choice, and incapable" and remembered

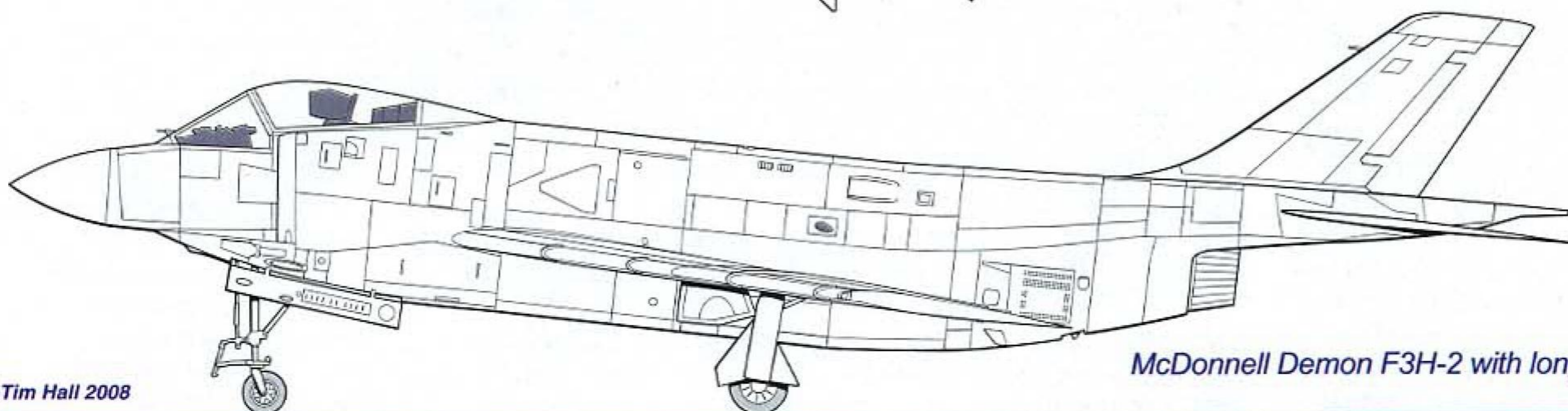
McDonnell F3H Demon



*McDonnell Demon F3H-2
(three-view)*



McDonnell Demon F3H-2M



McDonnell Demon F3H-2 with long "beaver tail"

© Tim Hall 2008



that its turbine blades could lose their tips if the aircraft was flown in the rain – with potentially fatal consequences.

Early problems

Test pilot Robert M. "Bob" Edholm made the initial flight in the first XF3H-1 at St Louis on August 7, 1951. He took off in the needle-nosed jet with the canopy slid back into the open position, a sign that he intended to climb out rather than trust the ejection seat if things went awry.

The all-silver, plainly-marked XF3H-1 prototypes did quite a bit of flying while engineers struggled with aerodynamic and powerplant issues. Those involved in the Demon project at the time differ as to whether the appearance of the MiG-15 in Korea (and the US Navy's disappointing lack of a high-performance swept-wing fighter) may have influenced the pace of the work or the delay in recognising the J40's inadequacy.

With slightly improved radar, a redesigned windscreen and other minor changes (plus blue paint) the J40-powered production F3H-1N nightfighter version made its maiden flight on December 24, 1953. It was seriously late and was not much of a Christmas gift. With a better engine the F3H-1N would have been a star performer. With the J40 it was a challenge at best, a "joke" in the opinion of one pilot and a "death trap" in the words of another. Tests continued at St Louis and at Patuxent River, Maryland. Even as they tested this first production version of



ABOVE Looks can be deceiving – the XF3H-1 takes off on its first flight on August 7, 1951, looking like a world-class jet fighter. In its initial configuration, it certainly was not – its under-powered and unreliable Westinghouse J40 engine had no afterburner, and there were various aerodynamic problems. **LEFT** McDonnell test pilot George Mills, who was forced to eject from an early production F3H-1N after engine failure, only to watch the aircraft fly on.

“For more than an hour the unmanned F3H-1N, minus canopy, pilot and seat, flew in circles above Missouri”



ABOVE Production F3H-1N BuAer 133489 makes a low-level pass over the McDonnell factory in December 1953. Most "Dash Ones" never got into the air at all, and were used for ground instruction.

the Demon, pilots knew they would never see it in the Fleet.

The F3H-1N suffered a series of crashes owing to its lack of power and the unreliability of its engine.

Emergency bale-out

Faced with what appeared to be a massive systems failure, including the J40 engine, during a Demon test flight, company pilot George Mills ejected from an F3H-1N near St Louis. Dangling beneath his parachute, he looked around, expecting to see his aircraft smash into the ground. In true demonic fashion, the aircraft refused to do so.

For more than an hour the unmanned F3H-1N, minus canopy, ejection seat and Mills, flew in circles above Missouri and Illinois. According to folklore, Air Defense Command interceptors were scrambled to shoot it down, since it refused to go down by itself. Eventually, the F3H-1N deposited itself in a vacant field and most parts were salvaged.

In a sense, Mills's F3H-1N flew better than most of its sister aircraft ever would. Aware of the basic problems with the aircraft, the BuAer asked for major design changes and wanted the production Demon to be an all-weather general-purpose fighter rather than a day interceptor as originally planned. In practice it transpired that the "all-weather" part would become one of the Demon's strengths.

As early as August 1952, Service leaders knew the J40 was a disaster and authorised McDonnell to study replacing the hapless Westinghouse power-

plant with the 9,200lb-thrust Allison J71.

In later years naval aviators would say that the begrudging gift of the J71 gave them an engine that was only marginally adequate, but which at least worked, lacked reliability issues and provided sufficient – if not overwhelming – thrust. Had the Demon been able to accommodate, say, the 10,000lb-thrust Pratt & Whitney J57 instead, it might have performed every bit as successfully as the “Century Series” of supersonic fighters then being developed for the United States Air Force (USAF).

Built – and grounded

In one of American naval aviation’s most shameful moments, the US Navy (USN) permanently grounded its entire fleet of F3H-1Ns on July 7, 1955.

Production of the F3H-1N was halted after 58 (including two XF3H-1s) had been built. Intended to blaze a trail across the skies, 25 of the aircraft never flew at all, while eight were involved in major accidents. Most F3H-1Ns were trucked ignominiously through the streets of St Louis, loaded aboard river barges and transported down the Mississippi to be used as ground instructional trainers at the Naval Air Technical Center in Memphis, Tennessee.

Eventually some 29 of these were re-engined, four were scrapped without ever flying and 21 retained their status as ground trainers. What happened to the 29 re-engined examples appears to be something of a mystery. Newspaper headlines and a congressional investigation gave McDonnell the worst mauling it was ever to receive.

A new start

Once the USN was reluctantly persuaded to go along with the J71 powerplant, two F3H-1Ns, BuNos 133520 and 133522, were completed with the new engine. These aircraft, in effect, filled the 59th and 60th slots in the production run, although that was not their initial position on the factory line. The first, BuNo 133520, made its initial flight with the new powerplant on April 23, 1955. The 61st aircraft on the production line, BuNo 133549, became the first production F3H-2N, this new variant being fitted with larger, stronger wings than the -1N and equipped with the APG-51A radar instead of the older APG-50. The new -2N was capable of carrying up to four AAM-N-7 Sidewinder I or IA air-



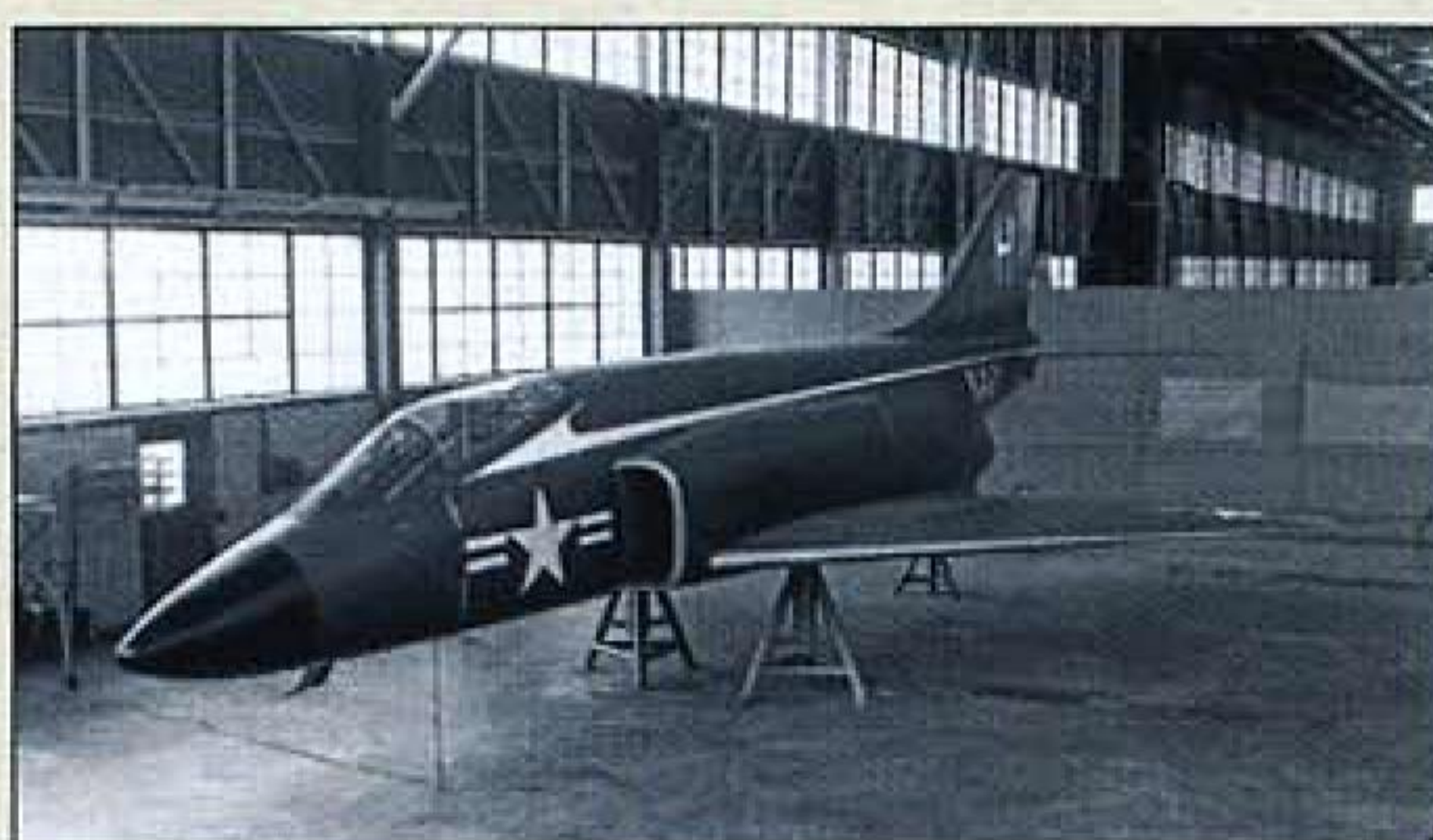
ABOVE Seen here on an early test flight in April 1955, BuAer 133549 was the first production F3H-2N, fitted with strengthened wings, improved radar and – crucially – the superior Allison J71 engine.



ABOVE An F3H-2M lets loose one of its complement of four radar-guided Sparrow air-to-air missiles during a series of tests at the Naval Missile Center at Point Mugu, California, in 1956.

From Demon to Phantom . . .

THE US NAVY did not proceed with plans for an F3H-2P photo-reconnaissance version of the Demon, nor the F3H-3, which would have been powered by the



9,200lb-thrust General Electric J73-GE-3 turbojet used on the North American F-86H Sabre. Subsequent McDonnell company designs for what the manufacturer initially called the F3H-E and F3H-G were essentially preliminary versions (including a full-scale mock-up in the latter case, as seen in the photograph above) of what was to become one of the most successful and long-serving jet fighters ever built – the F4H-1/F-4 Phantom II.

RFD

to-air missiles (AAMs).

Another variant, the F3H-2M was noteworthy as the first American combat aircraft to carry the Sparrow radar-guided air-to-air missile, and first flew on August 23, 1955. The latter variant, of which 80 were built, had underwing provision to accommodate four AAM-N-2 Sparrow I semi-active radar homing missiles, although on practical missions with the Fleet it usually carried two. The same ordnance stations could take four Sidewinders, although they did so rarely and, again, as a practical matter, the -2M usually carried two such missiles.

In September 1956 another variant, a standard production model, known simply as the F3H-2, first flew, retaining the F3H-1’s four 20mm cannon plus 6,000lb of bombs and/or rocket projectiles (RPs), but it was also capable of carrying Sidewinders and/or Sparrows.

The final F3H-2M, with upgraded APG-51B radar and typical load of two Sparrows, eventually earned a reputation as an effective carrier-based interceptor and was often available for operations in bad weather when other navy fighters were unable to launch.

McDonnell manufactured 521 Demons of all models between 1949 and 1959, including 60 F3H-1Ns, 142 F3H-2Ns, 80 F3H-2Ms and 239 F3H-2s. When the Pentagon overhauled its system for military aircraft designations in 1962 the F3H-2N, F3H-2M and F3H-2 became the F-3C, MF-3B and F-3B respectively. **A**



The Not-so-little Devil

Despite its sleek, futuristic appearance, the F3H Demon was in fact of orthodox construction. ROBERT F. DORR describes the type in detail

FROM NOSE TO tail the Demon looked functional and fast. When the F3H-2N arrived in Fleet squadrons, its thin wings with 43° sweep at quarter chord, 35ft 4in span and 519ft² of wing area might have been called unconventional, but by contemporary standards, with its radar nose, single-seat cockpit and swept flying surfaces, the Demon was really quite orthodox.

Demon walk-round

In October 1957 F3H-2N BuNo 137009, which was being used at nearby Naval Air Station (NAS) Patuxent River, Maryland, for missile tests, was made available to the press at NAS Anacostia, near Washington DC. Although somewhat grubby from frequent

ABOVE A Demon is prepared by groundcrew for a test flight at the Naval Air Test Center at Patuxent River. In comparison to its piston-engined predecessors, the F3H was a sizeable carrierborne fighter.



ABOVE F3H-2N BuNo 137009 was photographed by the author at NAS Anacostia in October 1957, shortly before the station closed its runways. Note the single jetpipe and distinctive "beaver tail".

use, the aircraft was typical in size, shape and configuration of the Demons that went to the Fleet squadrons. The "Demon doctors" who serviced the F3H were told they were maintaining the largest single-engined single-seat fighter in the world.

Nose to tail

The laminated black radome on the Demon's pointed nose initially housed a Westinghouse APG-50 air-intercept radar unit, replaced in mid-career on most Demons by the APG-51A and B. The radome could be opened and folded upward, while a folding door behind the radome provided access to the radar and fire-control unit. As in the USAF's single-seat F-86D Sabre interceptor, the pilot operated both the aircraft and the radar with controls on the stick. With the

McDonnell F3H-2 Demon

- 1 Radome
- 2 Radar scanner dish
- 3 Scanner tracking mechanism
- 4 Radar mounting bulkhead
- 5 Radome attachment ring, upward-hinged
- 6 Total pressure head
- 7 Radar equipment cooling air intake
- 8 AN/APG-51B radar equipment module
- 9 Angle-of-attack transmitter
- 10 Sideslip detector
- 11 Cockpit front pressure bulkhead
- 12 Communications transmission antenna
- 13 Landing/taxying lamp
- 14 Carrier approach lights
- 15 Leg shortening links
- 16 Torque scissor links
- 17 Aft retracting nosewheel
- 18 Shimmy damper
- 19 Retraction/breaker strut
- 20 IFF aerial
- 21 UHF aerial
- 22 Cannon port blanking plate
- 23 Nose undercarriage leg trunnion mounting
- 24 Flight data unit and computer
- 25 Rudder pedals
- 26 Instrument panel shroud
- 27 Mk II Mod 1 gunsight
- 28 Windscreen panels
- 29 Side console panel
- 30 Control column
- 31 Engine throttle lever
- 32 Radar hand controller
- 33 Port air intake
- 34 Oxygen bottles (2)
- 35 Cannon port
- 36 Nosewheel bay door
- 37 Ventral catapult strop hook
- 38 Gun bay hatch
- 39 Cartridge case ejection
- 40 20mm cannon
- 41 Ammunition feed chute
- 42 Ammunition magazine
- 43 Formation light
- 44 Fold-out boarding steps
- 45 Battery
- 46 Intake duct framing
- 47 Martin-Baker ejection seat
- 48 Aft-sliding cockpit canopy cover
- 49 Flight refuelling probe, extended

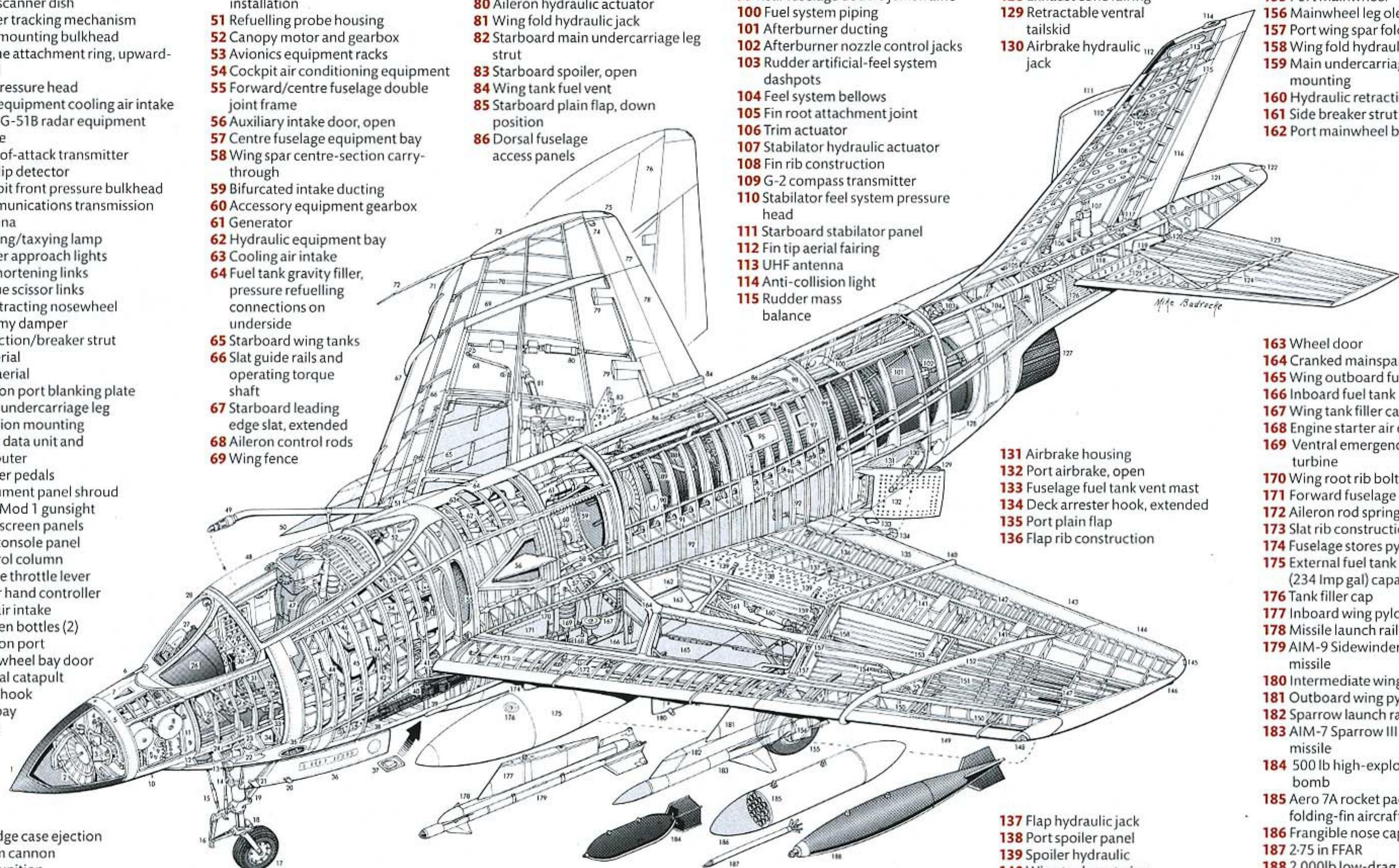
- 50 Sparrow 1 air-to-air missile installation
- 51 Refuelling probe housing
- 52 Canopy motor and gearbox
- 53 Avionics equipment racks
- 54 Cockpit air conditioning equipment
- 55 Forward/centre fuselage double joint frame
- 56 Auxiliary intake door, open
- 57 Centre fuselage equipment bay
- 58 Wing spar centre-section carry-through
- 59 Bifurcated intake ducting
- 60 Accessory equipment gearbox
- 61 Generator
- 62 Hydraulic equipment bay
- 63 Cooling air intake
- 64 Fuel tank gravity filler, pressure refuelling connections on underside
- 65 Starboard wing tanks
- 66 Slat guide rails and operating torque shaft
- 67 Starboard leading edge slat, extended
- 68 Aileron control rods
- 69 Wing fence
- 70 Folding outer wing panel
- 71 Starboard navigation light
- 72 Pitot head
- 73 Wingtip fairing
- 74 Wingtip skid protector
- 75 Formation light
- 76 Starboard wing folded position
- 77 Fixed portion of trailing edge
- 78 Starboard aileron

- 79 Aileron mass balance
- 80 Aileron hydraulic actuator
- 81 Wing fold hydraulic jack
- 82 Starboard main undercarriage leg strut
- 83 Starboard spoiler, open
- 84 Wing tank fuel vent
- 85 Starboard plain flap, down position
- 86 Dorsal fuselage access panels
- 87 Engine mounting/withdrawal rail
- 88 Allison J71-A-2B afterburning engine
- 89 Centre fuselage frame construction
- 90 Oil filler access
- 91 Lateral control duct
- 92 Aft fuselage ventral fuel tanks, total internal capacity 1,506 US gal (1,253 Imp gal)
- 93 Fuselage main longeron
- 94 Rudder control rod

- 95 Engine bay venting air scoop
- 96 Fuselage upper longeron
- 97 Cooling air exhaust
- 98 Engine bay firewall
- 99 Rear fuselage double joint frame
- 100 Fuel system piping
- 101 Afterburner ducting
- 102 Afterburner nozzle control jacks
- 103 Rudder artificial-feel system dashpots
- 104 Feel system bellows
- 105 Fin root attachment joint
- 106 Trim actuator
- 107 Stabilator hydraulic actuator
- 108 Fin rib construction
- 109 G-2 compass transmitter
- 110 Stabilator feel system pressure head
- 111 Starboard stabilator panel
- 112 Fin tip aerial fairing
- 113 UHF antenna
- 114 Anti-collision light
- 115 Rudder mass balance
- 116 Rudder
- 117 Stabilator damper
- 118 Stabilator centre-section control horn
- 119 Sealing plates
- 120 Stabilator hinge point
- 121 "Beaver" tail fairing
- 122 Tail navigation light
- 123 Port all-moving tailplane (stabilator)

- 124 Stabilator multi-spar construction
- 125 Leading-edge ribs
- 126 Exhaust heat shroud
- 127 Variable area afterburner nozzle
- 128 Exhaust cone fairing
- 129 Retractable ventral tailskid
- 130 Airbrake hydraulic jack
- 131 Airbrake housing
- 132 Port airbrake, open
- 133 Fuselage fuel tank vent mast
- 134 Deck arrester hook, extended
- 135 Port plain flap
- 136 Flap rib construction
- 137 Flap hydraulic jack
- 138 Port spoiler panel
- 139 Spoiler hydraulic
- 140 Wing tank vent pipe
- 141 Aileron mass balance
- 142 Aileron rib construction
- 143 Port aileron
- 144 Fixed portion of trailing edge
- 145 Formation light
- 146 Wingtip skid protector
- 147 Radar altimeter transceiver
- 148 Port navigation light
- 149 Port leading-edge slat
- 150 Slat tracks and guide rails

- 151 Outer wing panel construction
- 152 Port wing fence
- 153 Aileron hydraulic actuator
- 154 Aileron control rods
- 155 Port mainwheel
- 156 Mainwheel leg oleos
- 157 Port wing spar fold joints
- 158 Wing fold hydraulic jack
- 159 Main undercarriage leg trunnion mounting
- 160 Hydraulic retraction jack
- 161 Side breaker strut
- 162 Port mainwheel bay
- 163 Wheel door
- 164 Cranked mainspar
- 165 Wing outboard fuel tank
- 166 Inboard fuel tank
- 167 Wing tank filler cap
- 168 Engine starter air connector
- 169 Ventral emergency ram air turbine
- 170 Wing root rib bolted joint
- 171 Forward fuselage fuel tank
- 172 Aileron rod spring strut
- 173 Slat rib construction
- 174 Fuselage stores pylon
- 175 External fuel tank (2); 282 US gal (234 Imp gal) capacity
- 176 Tank filler cap
- 177 Inboard wing pylon
- 178 Missile launch rail
- 179 AIM-9 Sidewinder air-to-air missile
- 180 Intermediate wing pylon
- 181 Outboard wing pylon
- 182 Sparrow launch rail
- 183 AIM-7 Sparrow III air-to-air missile
- 184 500 lb high-explosive (HE) bomb
- 185 Aero 7A rocket pack; 19 x 2.75in folding-fin aircraft rockets (FFARs)
- 186 Frangible nose cap
- 187 2.75 in FFAR
- 188 2,000lb low-drag general purpose (LDGP) bomb



Cutaway drawing and key © MIKE BADROCKE 2008

MCDONNELL F3H DEMON TECHNICAL DESCRIPTION

APG-51, typical for the era, a Demon pilot could "lock on" to an approaching Soviet bomber at a distance of about 25 miles.

The office . . .

The Demon pilot sat in a roomy and straightforward cockpit that was almost impossible to climb into without a ladder; it was some 13ft above the carrier deck. After a single-piece windscreen was fitted to the first F3H-2N in April 1955, Demons went to the Fleet with a conventional three-piece windscreen that was never sealed properly and retained a tendency to pop out in flight (see *Flying the Demon*, page 70).

The aircraft sat high on its wide-tracked, tricycle undercarriage but retained a good view for the pilot when taxiing on deck. It also gave its pilot good visibility to the rear. The McDonnell ejection seat installed at the factory and the Martin-Baker seat that followed in mid-career were both considered reliable. Pilots claim, however, that the earlier company-made seat could cause spinal dislocation.

Demon doctor Allan Meyne, who was responsible for F3H-2N BuNo 145232, liked the design of the Demon's air intakes.

"They were high and narrow, on either side, unlike the [Vought] F8U Crusader with that big open nose – I once saw an unlucky individual sucked into a Crusader. When I saw where the air intake was on the F4H Phantom II I decided not to re-enlist. I'm 6ft tall and the intake would have been just above me!"

Meyne also "liked the ease with which you got the engine in and out. Around the tail section by the turkey feathers, you hooked up a crank at Door 34, pulled it free from the mount, and just rolled it back."

In USN service a typical Demon was powered by an 8,700lb-thrust Allison J71-A-2 axial-flow turbojet engine with afterburner. It was a quantum improvement over the powerplant initially planned for the Demon series, but the F3H never escaped the charge – even at its best – that it was underpowered. Never meant for air-to-air dogfighting, the Demon lacked the ability for a quick burst of extra thrust when needed. Engaging the afterburner involved a delay of some 1–2sec.

Fighter features

Operational Demons had a retractable in-flight-refuelling probe located beside and behind



ABOVE Despite frequent accusations of being underpowered, the re-engined F3H-2 variants could carry an impressive array of stores on the wings and beneath the fuselage – this one has been fitted with long-range fuel tanks and, on the outer pylons, an Aero 7A rocket pack containing 19 folding-fin rocket projectiles.

LEFT An example of the stylised data plate fitted to the Demon, in this case one of the less-than-spectacular F3H-1Ns, BuNo 133502, accepted by the USN on September 30, 1954.

McDonnell F3H-2 Demon data

| | |
|--------------------|---|
| Powerplant | 1 x 8,700lb Allison J71-A-2-E turbojet engine |
| Dimensions | |
| Span | 35ft 4in |
| Length | 58ft 11in |
| Height | 14ft 7in |
| Wing area | 519ft ² |
| Weights | |
| Empty | 12,133lb |
| Loaded | 33,900lb |
| Performance | |
| Max speed | 647 m.p.h. at 30,000ft |
| Initial climb | 12,795ft/min |
| Service ceiling | 42,650ft |
| Range | 1,370 miles |



ABOVE An F3H-2 Demon is given a rocket-powered kick-off during tests at the Naval Air Test Facility at Lakehurst, New Jersey, in May 1959. Most aircraft catapults at the time were steam-powered.

the cockpit on the starboard side. This "bolt-on" feature was not always carried and rarely used in an era when refuelling was less common than today.

Demons rolled off the production line with four Mk 12 20mm cannons in the lower nose, each with 196 rounds of ammunition. An ammunition "service lift" could be raised or lowered from the nose when servicing, loading or unloading the guns. The upper pair of guns was removed from most Demons in Fleet service, and some had all four guns removed.

Pilots sometimes used the empty upper gun compartment for baggage stowage; usually a parachute bag filled with overnight gear. Two guns were usually retained, not because they were needed (the missile was the Demon's primary weapon), but because removing all four would have made the aircraft too light in the nose and altered its flying characteristics.

Although the F3H-2M designation indicated a missile-carrying capability, near the end of its career every -2N, -2M or -2 was able to accommodate AAM-N-7 Sidewinder, AAM-N-3 Sparrow I and AAM-N-6 Sparrow III missiles. Although the Demon was wired for a wide range of air-to-ground bomb loads, its pilots apparently never practised or used this capability.

The fuselage of the Demon fattened slightly midway along the fuselage before tapering into the exhaust tailpipe situated beneath the leading edge of the fin. The swept tail included a low-set swept tailplane.

Early Demons had the short "beaver tail" protruding above and behind the engine exhaust. From BuNo 143043 onward this distinctive beaver tail was lengthened slightly.



Whatever the Weather

After a decidedly poor start to its US Navy career, the Demon went on to redeem itself as a useful all-weather fighter, as ROBERT F. DORR relates

ALTHOUGH NEVER blooded in combat, the Demon equipped USN squadrons from 1956 to 1964, at a time when the Cold War was big and the war in Vietnam was still small. Surprisingly, given its painful inception, some 22 squadrons flew Demons, but only three for prolonged periods.

Navy service pilots apparently did little or no flying in the two XF3H-1 prototypes. Naval aviators did go aloft in some of the F3H-1Ns, but only on a limited basis before this version was permanently grounded.

ABOVE F3H-2 BuNo 146731 of VF-151, "The Vigilantes", waits at the launch position with its wings folded as the nosewheel is attached to the catapult aboard the *USS Coral Sea* on March 1, 1961.



ABOVE The second prototype XF3H-1, BuNo 125445, taxis to the catapult aboard the *Coral Sea* during evaluation trials in January 1954. Few service pilots appear to have flown in either prototype.

Although 29 of the F3H-1Ns were re-engined, it appears none ever reached the Fleet.

One happy moment came on February 13, 1955, when McDonnell test pilot Chester V. "Chet" Braun won rare "feel-good" headlines for the F3H-1 by setting an unofficial time-to-height record of 10,000ft in 71sec, demonstrating that Navy officials were not wrong to see the Demon as a promising Fleet interceptor.

Only after the F3H-1N was sent packing in disgrace – most relegated to maintenance instructional duties – did the F3H-2N model join the "real" Navy. On September 12, 1955,

McDONNELL F3H DEMON SERVICE HISTORY

an F3H-2N fresh from the factory (BuNo 133559) went aboard the aircraft carrier *USS Ticonderoga*.

In the hands of Cdr Robert Dose, skipper of operational test and evaluation squadron VX-3, '559 made 23 catapult shots and 22 arrested landings. This successful effort enabled the Demon to complete testing by late 1955 and begin operational duty on March 7, 1956.

Squadrons VX-4, VC-3, and VF(AW)-3 also performed developmental work with the Demon, versions of which entered service as the F3H-2N, F3H-2M and F3H-2, respectively.

Demon training

The usual practice when introducing a new aircraft to the Fleet was to begin flying operations in the Replacement Air Group, or RAG, with one on each coast to serve the Atlantic and Pacific Fleets.

With the Demon, the Navy pursued developmental work while also building up the RAGs. In 1956, the first operational F3H-2N went to the Naval Missile Center at Point Mugu, California. A composite squadron, VC-3 at Moffett Field, California, also received Demons at this time.

The Navy devoted a fleet squadron to developmental flying when VF-124, "The Moonshiners", replaced its Vought F7U-3 Cutlass fighters with F3H-2Ns in May 1956. The unit performed extensive developmental work for the Sparrow-equipped F3H-2M and operated aboard *USS Lexington* before being absorbed into the West Coast RAG in April 1958.

The RAGs were VF-101, "The Grim Reapers", for the East Coast at Cecil Field, Jacksonville, Florida, and VF-121, "The



ABOVE Down and out – literally. The majority of the F3H-1Ns await their fate as ground instructional airframes at St Louis in 1955. The cost of the F3H-1N debacle was estimated to be some \$65 million.



ABOVE In September 1955 F3H-2N BuNo 133559 embarked in the *USS Ticonderoga* for carrier suitability trials with evaluation squadron VX-3, nine months after the F3H-2N variant's first flight.

"Squadrons that flew all three F3H-2 variants prided themselves on flying when other aircraft could not..."

Pacemakers", for the West Coast at Miramar, California. Cecil and Miramar also became the land bases from which Demons operated when not aboard ship. Both eventually surrendered their Demons to become the RAGs for the McDonnell Douglas F4H (F-4) Phantom II. The "Grim Reapers" moved to Key West, Florida, during their 1958-62 period training Demon pilots. The "Pacemakers" stayed at Miramar, absorbed VF-124 in 1958, and converted to the Phantom II in 1960, leaving the "Reapers" as the only training unit until 1962.

Into front-line service

The Demon began fully-fledged operations from carrier decks with the Atlantic Fleet when VF-14, "The Tophatters", at Cecil Field, went aboard the newly commissioned *USS Forrestal* in January 1957. The unit was only

A busy flightdeck aboard the *USS Saratoga* during one of five cruises made aboard the carrier by VF-31, "The Tomcatters". Like numerous other Demon squadrons, VF-31 replaced its F3H-2s with McDonnell's new world-beating fighter – the F4H/F-4 Phantom II.



MIKE HOOKS COLLECTION

on the new supercarrier for its shakedown cruise and the ship never saw a Demon again.

Between 1957 and 1962 VF-14 completed four Mediterranean cruises aboard the *USS Franklin D. Roosevelt*. One of the handful of long-term Demon users, the unit gave up its F3Hs for the Phantom II in May 1963.

From the beginning, the Demon gave the carrier air group a formidable night- and all-weather capability that it had not previously possessed.

Most squadrons had only a brief experience with the Demon. VF-64 was the initial designation for a unit that spent most of its operational service as VF-21, "The Freelancers". Neither was around long, but the record for Demon brevity belongs to VF-131, "The Nightcappers", based at Cecil Field, and one of the last units to fly the Demon, operating the F3H-2 model only. The squadron was established on August 21, 1961, and operated aboard the new *USS Constellation* before being disbanded in October 1962.

Also at Cecil Field, another short-timer was VF-82, "The Iron Men", which became an early F3H-2N user in 1956. The unit operated briefly from *USS Midway* before giving up its Demons in 1958. The squadron was disbanded on April 15, 1959, and has never been resurrected.

Also among short-term users was VF-13, "The Aggressors", which belatedly switched from the Douglas Skyray in 1962 and operated the Demon in the Caribbean during the Cuban Missile Crisis that year. The squadron was the last in the Atlantic Fleet to surrender the Demon, converting to the Vought Crusader in June 1964.

Long-term users

Squadrons that retained their Demons for longer periods flew all three -2 variants and prided themselves on flying in bad weather when other aircraft could not. "The Tomcatters" –



ABOVE The introduction of the F3H-2N coincided with new USN colours; after more than 15 years of all-blue aircraft, the Navy shifted to a paint scheme of gull grey on top and white undersides.

US Navy Demon squadrons

The 1950s was an era of rapid change, and one in which squadron nicknames changed frequently or were duplicated.

Atlantic Fleet/East Coast Demon squadrons

- VF-13 – "Aggressors"
- VF-14 – "Tophatters"
- VF-31 – "Tomcatters"
- VF-41 – "Black Aces"
- VF-61 – "Jolly Rogers"
- VF-82 – "Iron Men"
- VF-101 – "Grim Reapers"
- VF-131 – "Nightcappers"
- VF-161 – "Chargers"

Pacific Fleet/West Coast Demon squadrons

- VF-21 – "Freelancers"
- VF-24 – "Corsairs"
- VF-53 – "Pukin' Dogs"
- VF-54 – "Hell's Angels"
- VF-64 – "Freelancers"
- VF-92 – "Silver Kings"
- VF-112 – "Broncos"
- VF-114 – "Executioners"
- VF-121 – "Pacemakers"
- VF-122 – "Black Angels"
- VF-124 – "Moonshiners"
- VF-141 – "Iron Angels"
- VF-151 – "Vigilantes"
- VF-193 – "Ghost Riders"
- VF-213 – "Black Lions"

VF-31 – began the transition to the F3H-2N in 1956 at Cecil Field and made five Mediterranean cruises aboard *USS Saratoga* by 1963. In October of that year, the squadron converted to the Phantom II.

In the long-term category on the opposite coast was VF-21, "The Freelancers", a former Banshee operator which flew the Demon aboard the *USS Midway*. The Freelancers were operating F3H-2 models when, in September 1962, they also converted to the Phantom II.

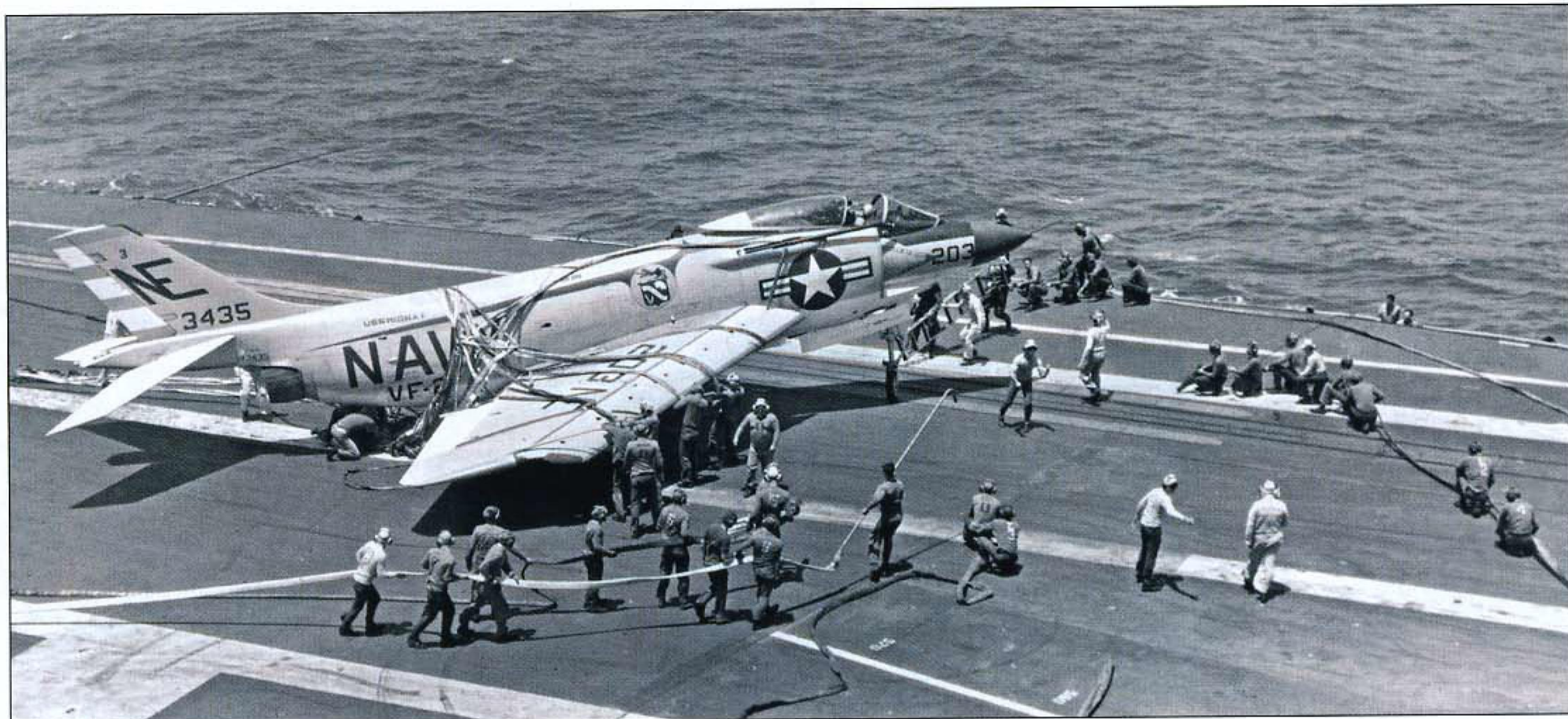
The all-time longest-term user, VF-193, "The Ghost Riders", at Miramar relinquished Banshees to fly Demons from 1957, making four cruises aboard the *USS Bon Homme Richard* and winning credit for that warship's 69,000th and 80,000th landings. The Ghost Riders gave up the Navy's last F-3B Demon on September 21, 1964, to begin operating the Phantom II.

Other Demon units

In the Atlantic Fleet, VF-61, "The Jolly Rogers", and VF-41, "The Black Aces", both at Cecil Field, enjoyed medium-length careers with the Demon. The Jolly Rogers flew F3H-2Ns from 1956 and operated from the *USS Franklin*

McDonnell F3H-2M BuNo 133633 served with VF-61 – "The Jolly Rogers" – aboard *USS Saratoga* during its Atlantic tour of mid-1957. Note the unit's skull-and-crossbones motif painted mid-fuselage. Artwork by JUANITA FRANZI/AERO ILLUSTRATIONS © 2008





D. Roosevelt and USS Saratoga.

In 1957, the Jolly Rogers participated in an Atlantic Fleet exercise that demonstrated naval firepower to President Dwight D. Eisenhower and other leaders. The squadron participated in other exercises while plans unfolded for the unit to convert to the F8U-2 Crusader in 1959. The Navy killed this plan and VF-61 was disbanded.

Beginning in 1958, the Black Aces initially operated aboard the *USS Intrepid* and later won a TOPGUN award at the 1959 Naval Weapons Meet at Yuma, Arizona. This unit participated in the shakedown cruise of the *USS Independence* during 1959-60, and made a Mediterranean cruise on the carrier during 1960-61. The squadron ended up with the F3H-2 model, until February 1962 when it received Phantom IIs.

Close behind in terms of operating experience, VF-53, "The Pukin' Dogs" (also given the somewhat more polite name "Blue Knights") went from the Grumman F9F-8 Cougar to the F3H-2 in 1958. The squadron made two Mediterranean cruises aboard the *USS Ticonderoga* in 1960 and 1961. On June 20, 1962, the squadron was redesignated VF-143, retaining its nickname, and began converting to the Phantom II.

"The Chargers" – VF-161 – a latecomer to the Demon world, was established on September 1, 1960, at Cecil Field, but was shifted to the Pacific Fleet at Miramar, California, in September 1961. The unit made two cruises aboard the *USS Oriskany* in 1962 and 1963 before



ABOVE Demon unit VF-21 – "The Freelancers" – had more than its share of mishaps and difficulties with the aircraft; fortunately this one, in which F3H-2 BuNo 143435 has hit the safety barrier aboard the *USS Midway* in 1962, ended safely. **LEFT** On March 7, 1957, Cdr Walter Roach, Commanding Officer of VF-14, established the F3H-2N as the US Navy's fastest operational all-weather aircraft during a flight from the Naval Air Test Center in Florida.

"On September 30, 1962, Demons participated in the US Navy's first live intercept of a Soviet aircraft..."



ABOVE Oops! Scratch one Demon as BuNo 145281, a redesignated F-3B of VF-14, literally runs out of steam on take-off from the *USS Franklin D. Roosevelt* in March 1963. The pilot's fate is unknown.

converting to the F-4B Phantom II the following year.

In the Pacific Fleet, VF-24, "The Corsairs", transitioned to the F3H-2N Demon in summer 1957 and made a July–November 1958 cruise aboard *USS Lexington*. The squadron exchanged its F3H-2M models in January 1959 for Grumman F11F-1 Tigers.

Converting from the Banshee to the Demon in May 1959, "The Silver Kings" – VF-92 – was known briefly as VF-54 – "Hell's Angels" – before reverting to the VF-92 appellation, the unit flying two cruises aboard *USS Ranger* in 1960 and 1961. The unit later operated from *USS Lexington* and *Ticonderoga* before converting to the F-4B in October 1963.

The Pacific Fleet, which had more Demon squadrons than its Atlantic counterpart, also included VF-112, "The Broncos", which began flying Demons in 1956 and operated initially aboard *USS Midway*. The unit also operated briefly aboard *USS Lexington*, *Ticonderoga* and *Kearsarge*. The unit converted to the North American FJ-4B Fury (see *Database*, February 2006 *Aeroplane*) and, on February 15, 1959, became VA-112.

Among other Miramar-based Pacific users was VF-114, "The Executioners", which switched from the F2H to the F3H-2N in 1957. The squadron undertook two cruises aboard *USS Shangri-La* and land-based operations on the West Coast, changing its name to "The Aardvarks" when it converted to the F-4 in 1961.

The Pacific story also includes VF-122, "The Black Angels", which operated F3H-2Ns aboard *USS Kearsarge* shortly after receiving

the fighters in 1958. Later that year, the squadron made a cruise in *Ticonderoga* amid tensions between the Nationalist Chinese government on Formosa (now Taiwan) and the mainland regime. It was a disastrous cruise in which four Demons were lost in accidents. The squadron was disbanded on April 10, 1958.

Brief histories of three more squadrons round out the tale of the Demon in the Pacific. "The Iron Angels" – VF-141 – swapped its Skyrajs for Demons in August 1959, made two cruises aboard *USS Oriskany*, and completed the 44,000th carrier landing on the "O-Boat", thereafter making two cruises aboard *USS Lexington* before converting in June 1962 to the F8U-2NE Crusader. VF-151, "The Vigilantes", replaced its Skyrajs with Demons in February 1959 and made a cruise aboard the *USS Hancock* and thereafter aboard the *USS Coral Sea* before converting to the Phantom II in 1963. "The Black Lions" – VF-213 – traded Skyrajs for Demons in 1959 and completed cruises aboard *USS Lexington* and *USS Hancock*.

Close to combat

In 1963, *USS Hancock* was directed close to Vietnamese waters, the Black Lions bringing the Demon close to action in Vietnam. In December 1963 the unit began relinquishing its F3H-2s in preparation for conversion to the Phantom II.

In the Atlantic and Pacific, faced with threats in Lebanon and the Taiwan Straits – and the spectre of atomic war with the Soviet Union – Demon pilots stood alert and launched regularly on intercept missions.

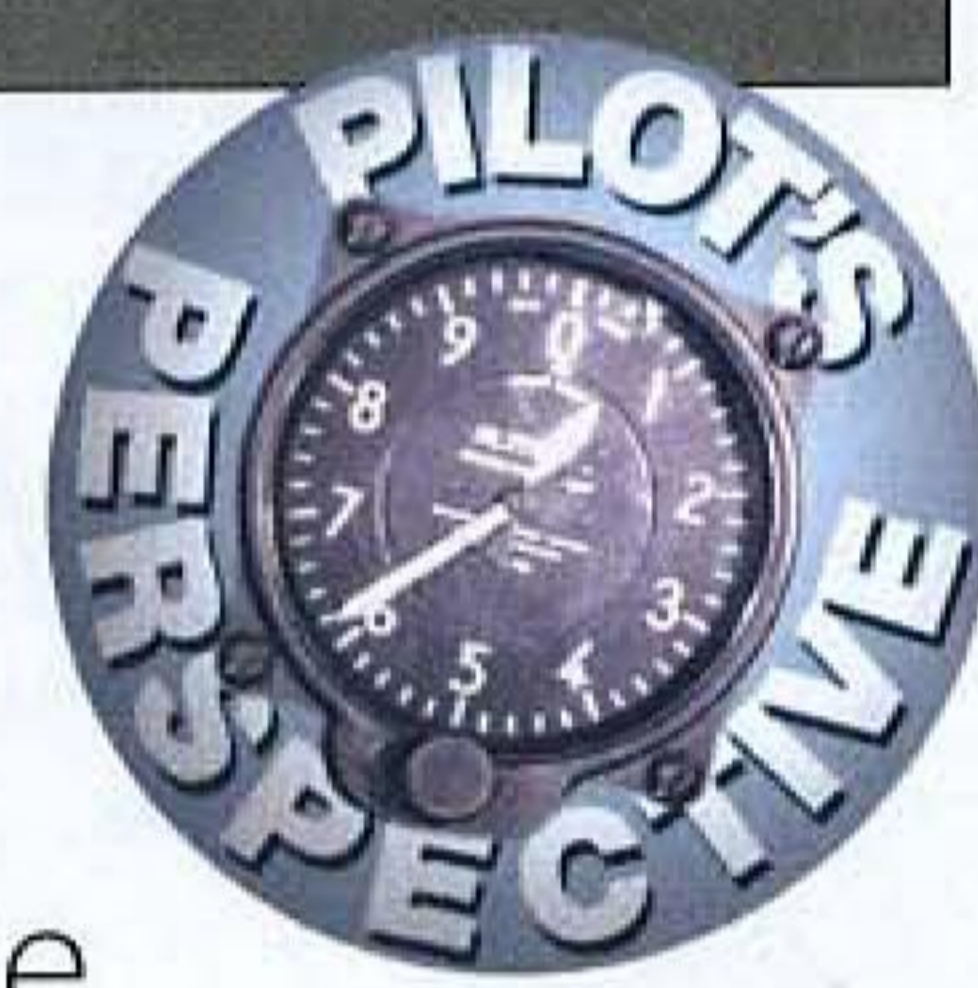
Demon pilots often flew without cannon ammunition; they carried live missiles but few pilots ever fired one. Their carrier battle groups were under constant Soviet surveillance, but the era had not yet arrived when Soviet reconnaissance bombers would brazenly fly over American aircraft carriers. In fact, the Demon introduced that era:

On September 30, 1962, Demons participated in the US Navy's first live intercept of a Soviet aircraft. A Tupolev Tu-16 *Badger*, flying near *USS Midway* was engaged and escorted by two F3H-2s belonging to VF-21. The Demons were refuelled from a Douglas Skyhawk during the mission, and began a trend that Crusaders and Phantom IIs would inherit from the F3H Demon – the first true all-weather Fleet interceptor.



ABOVE A splendid colour portrait of F3H-2N BuNo 137007 while up from its base at Patuxent River, Maryland, in May 1957. Carrying four Sparrow air-to-air missiles, it has the standard colour scheme with added Dayglo sections. **LEFT** This F3H-2 has a Beech AQM-37A supersonic target drone – used for simulating enemy threat systems – fitted to its port inner pylon. **BELOW** The end of the line – VF-161, "The Chargers", gives up its last F-3B, BuNo 145295, at NAS Miramar on September 21, 1964, to be replaced by the F-4B Phantom IIs in the background.





Flying the Lead Sled

ROBERT F. DORR talks to several Demon drivers who flew the type in service. Surprisingly, most agree that – despite a number of teething troubles – the F3H-2 performed well in its given role

EVEN WHEN static the Demon looked like it was flying at Mach 1. With its advanced radar it could intercept a Cold War foe while foul weather kept other carrier aircraft lashed to the deck. It was the largest single-engined fighter in the world at that time. Overall, the Demon was a good Fleet interceptor, if not nearly as fast as it looked.

Most naval aviators were glad to leave the feeble J40-powered F3H-1N behind. However, it was a different story for the three



ABOVE A Demon pilot gets very up close and personal during an informal air-to-air photograph opportunity. One of the chief complaints about the Demon was its lack of power, leading Fleet pilots to give it the somewhat cruel nickname, the "Lead Sled".

LEFT Former Demon pilot John "China" Newlin, who flew the type extensively during his service career, described it as "lovable". Much berated for its lack of aerodynamic performance and high rate of fuel consumption, the Demon was nevertheless the USN's first true all-weather fighter-interceptor.

variants of the McDonnell fighter that actually served in the Fleet, the F3H-2N and F3H-2M interceptors and the F3H-2 strike fighter (the latter term has taken on a far more formal significance in today's USN, but was used in the 1950s to distinguish the air-to-ground-capable F3H-2 from the pure interceptor models).

Pilots were fond of these operational J71-powered "dash-two" Demons, and for this report the author surveyed 21 Demon pilots out of some 735 who flew the aircraft. None remembered any training for the F3H-2's air-to-surface role.

Instead of dropping bombs, the Demon "really carried the Cold War as a defender of the Fleet", says Cdr John "China" Newlin USN (Retd), who flew with VF-121 – "The Pacemakers" – from 1959. "The negative comments about it were very much exaggerated. I flew 930hr and never had a life-threatening emergency".

It should be noted that, overall, the Demon was successful in its given role. Unfortunately the USN was so preoccupied with the transition to the J71 engine that it failed to pay proper attention to problems that festered long after they could have been solved; wing warp, compressor stalls and vulnerable windscreens.

Wing-warp

Commander Ralph M. Tvede Jr describes the Demon's rather startling wing-warp this way:

"I started flying the Demon in 1960. My last flight was in 1962. All aircraft I flew had [retrofitted] spoilers for high-speed manoeuvring. It wasn't until I was at the Safety Center in 1967 that I ran across information from a decade earlier regarding wing-warp. Evidently, early in the Demon's service career, at higher speeds, the ailerons had enough authority to cause sufficient wing distortion to destroy the trim and induce unwanted drag."

George Mills, who tested the Demon for McDonnell, says:

"The wings literally warped; no kidding. It didn't happen often and it usually didn't endanger anyone, but it was a remarkable thing to behold". Mills flew 17 aircraft types and never experienced the phenomenon with any other.

Newlin continues: "To counter wing-warp they put retractable spoilers inboard close to the fuselage. I hardly ever used them. You only used these when you were transonic, and I only got transonic in the Demon once."

Newlin says the wing-warp problem arose only when the Demon was approaching Mach 1. Despite its supersonic looks this was all but impossible in level flight. It required a shallow dive, and occurred only rarely in operational conditions. Despite its sleek appearance the Demon was not truly supersonic. "And up to Mach 0.95 or so it handled like a baby," Newlin says.

"When the wing warped", he adds, "it tended to act as an aileron, inducing a roll. The 'fix' should be to apply opposite aileron, but the Demon's ailerons



ABOVE Although its swept surfaces made it look fast and purposeful, the Demon was in fact something of an underachiever in terms of performance. This F3H-2M flies over Patuxent River in July 1956.



ABOVE This photograph of an early production F3H-2N shows well the unusual angle at which the type sat while on the ground. Note also the standard windscreen in place of the original one-piece.

What is compressor stall?

COMPRESSOR STALL is due to abnormal airflow through the compressor stage of a jet or other turbocharged engine, causing a stall of the vanes of the compressor rotor. Rich Davidson, a highly experienced pilot of vintage aircraft and modern airliners, simplifies matters:

"Essentially, it is when the engine's compressor blades – which are after all just miniature wings – stall just like a wing on an aircraft might. This could be a result of turbulent air in the engine inlet, extreme angles of attack or any one of numerous other reasons. Today's engines are built to be able to compensate for such problems and compressor stalls are rare. The more modern term is compressor surge, as this is a more accurate reflection of what happens – airflow through the compressor stage is weakened owing to stall and is therefore unable to hold back the high-pressure air in the rear half of the engine, which then surges forward."

Compressor stalls are often accompanied by a loud bang emanating from the engine as the combustion process "backfires". This often leads to increased exhaust gas temperature and a tendency for the aircraft to yaw in the direction of the affected engine (on multi-engined types).

Some compressor stalls are small but noisy and others can cause an engine fire and destroy the powerplant. The favoured response to a compressor stall is immediately and steadily to close the throttle on the affected engine.

weren't capable of countering the warp. In fact, opposite aileron could get you into trouble. You would get into a lateral instability problem."

Compressor stalls

Later in the Demon's career pilots learned that freezing temperatures could cause a compressor stall in the J71 engine. "The early version of the J71 was susceptible to a compressor stall that appeared in the cockpit to be a flame-out," says Newlin. "Pilots misread the problem and sometimes ejected when they didn't need to."

An incident famous in the Demon's history happened in December 1959. Demon unit VF-21, "The Freelancers", was commanded by Cdr Bill Eason and operating from the USS *Midway* (CVA 41) near Japan. A division (a four-aircraft formation) flying near Mt Fuji encountered unusually cold conditions. Three pilots, believing they had experienced flame-outs, ejected. Only afterwards was it learned that they had misdiagnosed their Demons' ailment.

"The stalls were caused by freezing conditions, which in turn caused the compressor to be impinged by the compressor blades" says Newlin. "After this became understood, the solution was to shave the end of the compressor blades and install bleed valves and variable guide vanes that were controlled by a primitive computer [resulting in a change of engine designation from J71-A-2 to

McDONNELL F3H DEMON PILOT'S PERSPECTIVE

J71-A-2A/B]. Once they did that the compressor stalls ended and you could fly the Demon through the iciest conditions. However, the modifications to the engine reduced its power."

Windscreen problems

The first two F3H-2Ns (BuNos 133549 and 133550) were tested with a one-piece windscreen. It was not adopted, however, the reason why apparently lost in the mists of time. From the third F3H-2N onwards all production Demons were delivered with a standard three-piece windscreen with side plates that, throughout the Demon's career in the Fleet, had a nasty tendency to pop out in flight.

On March 3, 1960, Lt Allan Anderson was making a routine flight from Moffett Field, California, in F3H-2 BuNo 145265 when, as Anderson recalls, "everything exploded in my face". Pounded by windblast inside his cockpit, he felt his Demon veer abruptly out of control, and ejected. His parachute brought him safely to earth "with one more take-off in my logbook than landings". An investigation board determined that baling out was the only action he could have taken.

Much later, near the end of the Demon's career and after seven mishaps with shattered windscreens, one of which proved fatal, experts determined that pressure changes during a rapid change in altitude were prone to shake loose the thin glue that held the Plexiglas to the frame. A US Navy notice to airmen instructed pilots to exercise care passing through 22,000ft while a new type of



ABOVE An F3H-2N driver discusses the aircraft with a US Navy officer. Note the ladder needed to climb aboard the Demon, the cockpit of which sat some 13ft up, making the ladder a vital piece of kit. **BELOW** The pilot of F3H-2 BuNo 145266 of VF-161 – "The Chargers" – awaits his catapult shot, with full afterburner applied, while operating from the "O-Boat" – USS Oriskany – in the late 1950s.

epoxy was developed to hold the windscreen in place.

High loss rate

It is no reflection on the design of the Demon that losses occurred at a higher rate than would be acceptable today. This was not unique to the Demon. More than today, any military flying could be deadly during the era between Korea and Vietnam.

While it has not proved possible to track down official safety figures, pilots remember that the F3H loss rate compared favourably with those of the F4D Skyray and FJ-3 Fury, and was better than that of the Vought

F7U-3 Cutlass. Though it did not affect losses, serious injuries were reduced, with an obvious impact on morale, when the USN belatedly changed the Demon's ejection seat. "They started putting in Martin-Baker seats in 1962 to replace McDonnell seats", says Newlin. "The Martin-Baker seats tended to cause a compression fracture of the spine, but you could recover from that. The seats had the advantage of being very reliable".

In the winter of 1959 VF-64 (later redesignated VF-21) was aboard the USS Midway near Formosa (Taiwan) during the 1958 Taiwan Strait Crisis. Lee

Webster Sr, the Allison technical representative aboard the carrier, remembers when the squadron lost five Demons in two weeks. "It was sad and frustrating", he says. "During night operations we lost two pilots after they crashed into the round-down on landing. Then we lost two more but recovered the pilots after they ejected. One was in the water 4hr before being recovered by a destroyer escort. The next day he turned in his wings to the squadron commander [Cdr Hugh Heider Jr] and voluntarily ended his flying career. I can recall saying to myself: 'My God, will it be that way for our entire



cruise?" As bad as things seemed, Webster had no idea that Heider's turn would come a day later.

"Next," says Webster, "we lost our skipper. Heider's was the most unfortunate and bewildering accident of all. It happened after he made a perfect landing to conclude our squadron's part of an airpower demonstration for Chiang Kai-Shek. It was during daylight hours in perfect weather, and I observed from

directly above the flight deck.

"Heider was the first of our flight to land", Webster continues. "He appeared to make a perfect approach and trap. His arrest and pullback also looked normal. But when Heider raised his hook and began to taxi to a parking space he increased power and then, without decreasing it, taxied off the starboard side of the flight deck and immediately sank without ever opening his canopy. He was never recovered;

nor was the reason for the accident ever positively determined." Another person who witnessed the event said there were no skidmarks nor any sign that Heider had lowered his tailhook – standard practice when brakes fail.

Unfairly maligned

Too much emphasis on Demon mishaps can be misleading. After the APG-51A radar was installed, the F3H-2N, F3H-2M and F3H-2

were unbeatable in the world of all-weather air combat. The Demon pioneered the use of air-to-air missiles and did it well. Newlin says that most pilots developed a genuine affection for the gull-grey-and-white Demon. The aircraft was robust and comfortable.

"The Demon will be remembered for the things that were wrong", says Newlin. "That's unfair. It was very solid. But, of course, it was no F-4." **A**

McDonnell F3H Demon survivors Compiled by Robert F. Dorr

F3H-2N (F-3C) Demon BuNo 133566

Resides with the New York-based Intrepid Sea-Air-Space Museum, aboard aircraft carrier *USS Intrepid*, currently undergoing maintenance in dry dock at Bayonne, New Jersey. The aircraft is painted in incomplete US Navy markings with the letter "E" on its tail, which may signify VF-61 or VF-82 in the late 1950s.

Accepted by USN September 9, 1955, at St Louis. To Naval Air Test Center, Patuxent River, Maryland, January 5, 1956; then to VF-14 at Cecil Field, Florida, on March 7 that year. Transferred to VF-31 at the same airbase on November 16, 1956. Moved to Key West, Florida, January 28, 1957; back to St Louis, June 6 that year. On April 2, 1958, joined VF-124 at Moffett Field, California. Transferred to VF-121 at Miramar, California, April 9, 1958; to Fleet Aircraft Service Squadron (FASRON) 4 at nearby North Island on March 20, 1959. To Overhaul & Repair Facility, San Diego, July 2, 1959. Stored at Litchfield Park, Arizona, April 4, 1960, and back to Overhaul & Repair on March 24, 1961. Served with VF-213 at Miramar then to Point Mugu, California, in 1962 – redesignated as F-3C – to Patuxent River in 1953. To Naval Weapons Laboratory at Dahlgren, Virginia, date unknown.

Intrepid museum acquired aircraft in derelict condition from Dahlgren, 1983, on loan from the USN. From 1983 onwards carried tailcode "AF" and side number "105". Current incomplete paint scheme is "fairly new", and there appear to be no plans to refurbish the aircraft.

F3H-2M (MF-3B) Demon BuNo 137078 (Side No "301")

The sole surviving F3H-2M is currently displayed at the National Museum of Naval Aviation, Pensacola, Florida, in markings of VF-193, *USS Bon Homme Richard*, 1958.

Accepted by USN from McDonnell on May 24, 1957, and

assigned to VF-24 at NAS Moffett Field, California, in July that year. Joined VF-64 at NAS Alameda, California, at some point for two-month period; official records state it had returned to VF-24 by October 1957, but retired Capt John M. Tallman of VF-64 records two flights in the aircraft that month. Remained with VF-24 until late 1958, its tour including an at-sea period aboard *USS Lexington*. Aircraft joined VF-121 in January 1959. Placed in long-term storage at Litchfield Park, Arizona, in 1960. In 1962 used briefly for service at the Naval Air Technical Training Unit at Memphis.

Pensacola museum acquired aircraft from private owner in 1989 and loaned it to Cecil Field, where it was gate guardian until 1999. After restoration and painting at Pensacola it was placed on indoor display – the only surviving Demon not exposed to the elements.

F3H-2 (F-3B) Demon BuNo 145221

Preserved at the Pima Air and Space Museum, Tucson, Arizona, displayed as BuNo 143482 (Side No "104/AK") of VF-13, aboard *USS Shangri-La*, 1963.

Delivered to USN July 17, 1958. Received Service modifications at Cherry Point, North Carolina, and went to VF-31 at Cecil Field, Florida. Transferred to VF-14 aboard *USS Franklin D. Roosevelt* February 1959; returned to the squadron in August after servicing at Rota, Spain. Received further maintenance at Cherry Point before returning to VF-14 in February 1961 and deploying again on *USS Franklin D. Roosevelt*. Redesignated as F-3B on November 1, 1962, joined VF-13 at Cecil Field and embarked in the *USS Shangri-La* in June 1963. Returned to Cecil Field in May 1964; placed in storage at Litchfield Park the following month. Owned by the National Museum of Naval Aviation, it was loaned to the Pima museum in May 1978, where it remains.

F3H-2M BuNo 137078



F3H-2 BuNo 145221



PHOTOGRAPHS BY DAVID WILLIS/ARC

Next Month
Database
Examines...



The photo-recce Spitfires

Dr Alfred Price details the sleekest members of the Spitfire family – the unarmed – but fast – photographic-reconnaissance variants

(contents may be subject to change)