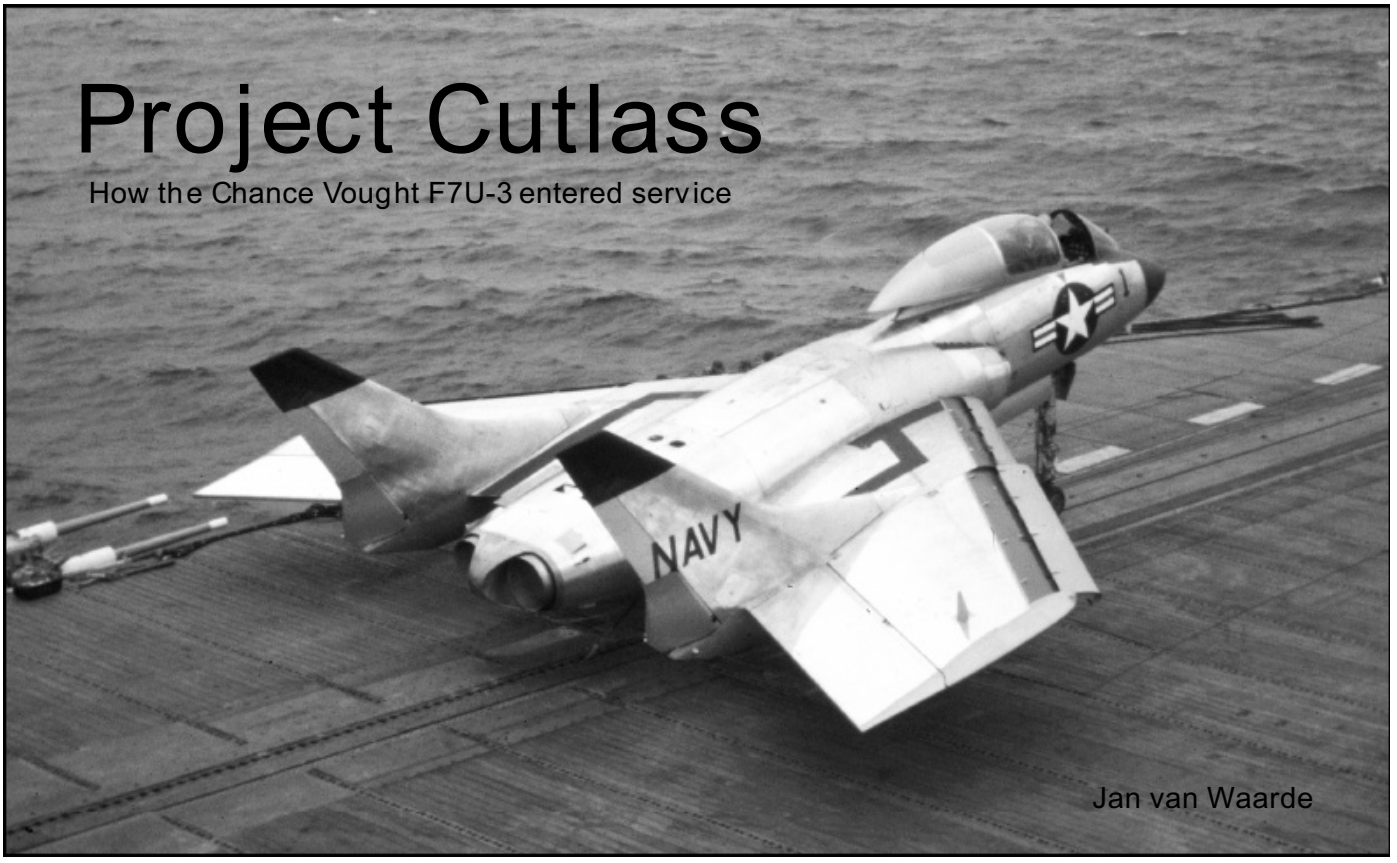
Project Cutlass

How the Chance Vought F7U-3 entered service



F7U-3 129662 starts to accelerate down the new C-11 steam catapult of the USS Hancock. As can be seen here, the 'Project Cutlass' F7U-3s carried very plain markings, with just the 'NAVY' on the tail and code '1' on the nose. All photographs in this article were taken during June and July 1954. They have languished in the archives of the Vought Retirees Club for years, where Mark Nankivil 'rescued' them and shared them with us.

Recently, I obtained some fascinating photographs of carrier operations of a quartet of rather anonymous Chance **Vought F7U-3 Cutlass fighters. Whilst trying to find out** what was going on in the photographs, I was able to piece together the story of 'Project Cutlass', which is described in the article below:

The early 1950s were an era of rapid improvements and developments in worldwide aircraft design; it was the time that jet fighters became a viable alternative to piston-engined fighters, at the same time these fighters were routinely challenging the sound barrier. In operational service, the career of these early fighters was often short, with successors looming around the corner before a type had been fully introduced in service. For the US Navy, it was an era of fighters like the F9F Panther and Cougar, F2H Banshee, F3H Demon, F4D Skyray, FJ Fury and the F7U Cutlass. Some challenged the boundaries of what was technically possible, while others 'played it safe', to an extent. Some types were more successful than others, and one that certainly was not, was the Vought F7U Cutlass.

For its time, the Cutlass was a highly advanced fighter design; it was the first tail-less fighter to enter full-scale production, it was the Navy's first swept-wing fighter, it was the first one with a steerable nose wheel and, most importantly, it was the first jet fighter in the USA to be designed with afterburning engines (the experimental F6U Pirate had been modified to become the first aircraft to use afterburners). Unfortunately, it were these very engines, as well as a problematic hydraulic system and nose landing gear, that would play a large part in the aircraft's

The quartet of F7U-3s which prompted this article, tied down on the USS Hancock while in port. From left to right: 129662/1, 129657/4, 129637/2 and 129678/3. In this photograph, the aircraft carry the under-fuselage rocket pod, which they do not in most of the other photographs in this article.

Three of the 'Project Cutlass' F7U-3s in flight over California, photographed from a TV-2 as related in the text. The formation is led by 129637/2, trailed by 129657/4 and 129678/3.

demise. If it had been powered by a good engine, the story might have been different. To be fair, the aircraft's flying characteristics were excellent in general; it was able to outmaneuver most of the other fighters of the era and every pilot loved flying the aircraft. Development of the Cutlass started in 1948 and the first F7U-1, 122472, made its first flight on 28 September 1948. After a few years of troublesome test flights with the NATC, carrier qualifications were conducted on board the USS Midway in July 1951, which revealed even more shortcomings in the basic design of the aircraft, one of these being insufficient forward view over the nose due to the type's extreme angle-of-attack approach stance. The findings rendered the F7U-1 unsuitable for squadron service. In the meantime, work had started on the improved F7U-2 and the even more radically altered F7U-3; it was the latter that was eventually taken into production. The F7U-1s did not have the structural airframe integrity to sustain carrier operations, but the F7U-3 airframe had been built like a tank. The initial sixteen machines still had the Allison J35 engine of the F7U-1 installed, but later machines all had the more powerful Westinghouse J46 engine.

Carrier qualifications with the F7U-3 were conducted on board the USS Midway and USS Coral Sea in late 1952. With all the problems experienced during testing with the F7U-1 and -3, putting the Cutlass in operational service asked for some caution and while the initial development problems were wrinkled out at the NATC, a different approach was chosen to start operational testing of the Cutlass. Usually, the operational test units like VX-3 and VX-4 would do most of the work, but this time, although both VX-3 and VX-4 did operate the F7U, 'Project Cutlass' was initiated by HQ ComAirPac as a unit charged with 'gaining operational familiarization, maintenance knowledge and logistics data prior to the Cutlass's assignment to the first operational fleet squadron'. In short, they had to write the book on how to operate the Cutlass in fleet squadrons. The plan was that the unit was to form the nucleus of the first operational Cutlass squadron, which turned out to be VF-124.

Two shots of 129657/4 on the ramp at *NAS Miramar. Note the flightline filled with* AD Skyraiders in the background. As can be seen, the Cutlass nosewheel strut had been lengthened to gigantic proportions to *improve the airflow over the aircraft's wings,* but this size was a contributing factor in the many nose gear failures experienced by the Cutlass.

At 11:16 on 2 February 1954, six minutes late, 128477, the first F7U-3 for Project Cutlass, arrived at NAS Miramar from the Chance Vought factory in Dallas. The arrival was viewed by a large crowd of line crews all eager to get their first look of one of the fabled new Cutlasses. It was flown in by LCDR R. G. Puckett; he was greeted by Capt D. L. Mills, Miramar's commanding officer, and LCdr J. S. Brown, the 'Project Cutlass' C/O. On the way to Miramar, Puckett had caused quite a stir at El Paso Municipal Airport (TX); he practically single-handedly disrupted airport operations during the transient stop; his Cutlass attracted thát much attention from airport personnel that all other activities ground to a halt! The 'Project Cutlass' F7U-3s were officially assigned to FASRON-12, a support unit at Miramar which was responsible for maintaining the aircraft. FASRON-12 supplied special project personnel, along with hangar space. They also took care of the administrative

and operational control of 'Project Cutlass'. As more F7U-3s were delivered to the unit and more experience was gained, the pace of operations increased and by July 1954, the unit had reached its full complement of twelve Cutlasses.

The unit's officers and enlisted men were mostly hand-picked as being the best in their field. For instance, the squadron's maintenance officer, Lt Robert D. Belt, had been the maintenance officer for the Blue Angels before being reassigned to 'Project Cutlass'. One of the unit's pilots was Lt Walter 'Wally' Schirra, who was the unit's weapons expert and would later become an astronaut, being involved in the Mercury, Gemini and Apollo space programs; he was eventually launched into space three times. He thought the aircraft was a learning experience for both the Navy and Chance Vought; it taught them delta wing aerodynamics and how to operate an aircraft with an afterburner. Two other pilots were Don Shelton, operations officer, and Floyd Nugent, both graduates of the Test Pilot School at NAS Patuxent River; all of the Project's initial cadre of pilots had received academic and flying training on the Cutlass at the Chance Vought plant in Dallas. The first group of pilots completed the course in December 1953. Stories and photographs of the Cutlass had been around for a few years, and initially, each of the Project's pilots was very eager to fly this futuristic jet fighter. The unit's ground crews learned the tricks of the trade in a mobile training unit, detached to Miramar from NATTC Memphis. This course lasted two weeks. This training unit included complete workable models of the hydraulic, electrical and mechanical systems of the F7U-3, as well as several other important components. For the pilots, there was a working cockpit model, complete with lighting, where they were able to get acquainted with the switches and dials.

The unit quickly started flying like an operational squadron, this was known as the 'flying wing' phase of the fighter's development process. Initially this was limited to operations ashore. Their aim was to look

The 'Project Cutlass' pilots carried out FCLP at OLF Crow's Landing, which was an *auxiliary airfield located about 50 miles east of NAS Moffett Field, it was used as a* relief landing ground for Moffett Field. In the photograph on top, the batsman is guiding in 129657/4, note the 1950s style uniform and equipment! In the photograph on the bottom, 129662/1 has just touched down. Note the extreme nose-high position of the Cutlass while on the gropund.

Below are the service histories of the four F7U-3s identified on the photographs. Please note that 'Project Cutlass' is not mentioned in these histories (apart from the codes carried by the aircraft); for all purposes the aircraft were officially assigned to FASRON-12, a support and maintenance unit based at NAS Miramar.

129637 Accepted 30apr54 and assigned to FASRON-12 on 06may54. Coded '2' while flying with 'Project Cutlass'. Transferred to VF-124 on 13oct54, but returned to FASRON-12 24jun55. On 13oct55 the aircraft was transferred to NAS North Island (most likely to the NARF there) and went back to Vought at NAS Dallas on 30mar56. Between 23oct56 and 19dec56 it spent time at NAS Corpus Christi (purpose unknown), went back to North Island on the latter date and was officially scrapped (or reduced to spares, as the US Navy calls it) on 30jul58.

129657 Accepted on 11jun54 and assigned to FASRON-12 on 03sep54. Coded '4' while flying with 'Project Cutlass'. Transferred to VF-124 on 13oct54 and returned to FASRON-12 on 08jul55. Reassigned to VF-151 on 02nov55. Went to Vought at NAS Dallas on 25apr56 and to NAS North Island (most likely the NARF there) on 21sep56. It was then reassigned to VA-126 on 30oct56. Placed in storage at NAF Litchfield Park on 09apr57 and finally SOC on 22jul58.

129662 Accepted on 11jun54 and assigned to FASRON-12 on 04sep54. Coded '1' while flying with 'Project Cutlass'. Transferred to VF-124 on 13oct54 but returned to FASRON-12 on 08jul55. Went back to Vought at NAS Dallas on 20oct55 and moved to NAS North Island on 30mar56, where it was WFU and officially reduced to spares (i.e. scrapped) on 23jan57.

129678 Accepted on 31aug54 and assigned to FASRON-12 on 10oct54, Coded '3' while flying with 'Project Cutlass'. It was transferred to VF-124 on 13oct54. Went back to Vought at NAS Dallas on 07nov55 and moved back to NAS North Island on 24apr56. It was transferred to VA-126 on 24may56, but was placed in storage at NAF Litchfield Park on 09apr57 and was finally SOC on 22jul58.

Preparations for the day's flying activities are underway on this photograph taken on board the USS Hancock, with both aircraft being prepared for launch. 129637/2 on top is having its catapult bridle attached. 129662/1 in the foreground offers a nice view inside the *cockpit. 'Project Cutlass' markings were very plain, the aircraft had black fin-tips, the legend 'NAVY' was carried on the fin and each* aircraft carried an individual code on the forward fuselage, which was repeated on the nosewheel door (see below). The Star & Bar was hi-viz, the area under the wing's leading edge slats was painted red.

for any problems they might encounter operating the aircraft, either during flying or maintaining these big birds, and then find a workable solution to the problem. For example, it turned out that the pre-flight checks of the aircraft took much longer than with earlier (jet) types, but this was attributed to the complexity of the Cutlass and the greater number of systems that had to be looked after. For the maintenance crews, the working conditions on the Cutlass compared to other aircraft of the era were 'pretty darn good', as one of the enlisted men said. A complete check of the aircraft 'only' took eight hours to complete.

After getting up to pace flying from Miramar, it was time to think about operating the Cutlass from a carrier in operational conditions. First, the unit conducted FCLP (Field Carrier Landing Practice – landing on a dummy deck) at Crow's Landing, an Outlying Field (OLF) of NAS Moffett Field. The airfield was also equipped with a Fresnel lens system which enabled the pilots to 'fly the ball'. The unit also was the focus of attention for 'Operation Shutterbug', the making of a series of pilot familiarization films for the Cutlass by the Naval Photographic Center from Anacostia. Lt Shelton was the 'star' of the movie, playing the lead role of the pilot. He also acted as the technical advisor. With the Cutlass being such a new aircraft, several air-to-air sorties were planned to photograph the aircraft in the air, using a P4Y-1P Coronado of VJ-61 and a FAWTUPAC TV-2. Additionally, Chance Vought also sent along some company photographers to record the unit's operations, the results of which can be seen on these pages.

Finally, the time had come to bring the Cutlass to the carrier. They deployed four F7U-3s on board the USS Hancock between 14 June and 30 July 1954. There's one slight problem here: the fourth F7U-3 on the photographs, 129678, had not been officially accepted yet by this time. Part of this carrier deployment was to evaluate how the aircraft behaved in a carrier environment under operational conditions, but it was also to evaluate Hancock's new C-11 steam catapult and the Mk.7 Mod.1 arresting gear (this part was named 'Project Steam'). The Navy proudly proclaimed that 'the new catapult was able to propel a big

Another pre-launch scene of the USS Hancock during the 'Project Cutlass' evaluations. Aircraft '2'and '4' are on the catapults, with '1' awaiting its turn in the background.

four-engined airliner into the air' – which in this case must have been a DC-6 or Constellation. On 15 February 1954, Hancock had been recommissioned after receiving the latest carrier modifications, including the new catapult. In 1954, the carrier also performed the first at-sea Sparrow I missile firings and supported the new Regulus missile test program. On some days, the pace of operations was frantic, with aircraft being launched, fly a circuit or two, trap, before being launched yet again. Actually, so many launches were made, that dropping the catapult bridle into the sea during every launch was deemed to be too expensive. Bungee cords attached the bridles to the nose gear and for a time, the aircraft did not retract the undercarriage following launch, just flew a circuit and trapped on board the carrier again, all of this with the bridle still in place. One quick change was made to the carrier: a blast deflector was designed and installed to deflect the jet blast away from the carrier's deck, which was still made of wooden planking in those days. The aircraft's afterburner flame had a tendency to scorch these, necessitating regular replacement of the planks. The deflector, made of a metal mesh, was a device which rose vertically from the deck. Floyd Nugent, flying an F7U-3 not in the photographs in this article, experienced an interesting emergency during one of these tests: upon take off, the nose wheel simply dropped into the sea! He circled around in the vicinity of the Hancock, while he and the crews on the carrier deliberated what to do next. It was decided that he had to eject. At that moment, he was overflying Coronado, and was headed for the ocean. He ejected over NAS North Island, but after landing safely he discovered to his horror that due to the ejection and the absence of the weight of the seat and pilot, the centre of gravity had shifted and the aircraft was now flying a perfect circular course over the NAS! It was considered to shoot it down, but the dangers of the aircraft crashing into houses was too great and after about 30 minutes fuel ran out and the aircraft made a perfect unmanned landing in the sea just offshore! If it had not been for the salt water corrosion, it could have been repaired to fly another day….

Despite the apparent success and the favorable flying characteristics, the 'Project Cutlass' pilots decided that the aircraft was too complicated to fly for inexperienced pilots and it was recommended that it was not to be used for fleet service. Wally Schirra was not too fond of the Cutlass and he described it as 'an accident waiting to happen'. Apart from the engine and landing gear problems, another serious vice was the post-stall gyration. If the aircraft was stalled with the slats out, there was no problem. But if it stalled with the slats in, the plane went into wild and random motion and the only way out was to eject! However, all these recommendations against fleet use were put aside and the aircraft was accepted for fleet use anyway, with disastrous results.

When 'Project Cutlass' wound down at the end of 1954, six aircraft were transferred to the initial Cutlass training unit, VC-3 at NAS Moffett Field (CA). Among a few other types, VC-3 was still flying F4U-5N Corsairs in 1954! The unit became involved in prop-to-jet transition training as the 'Cougar College of Supersonic Knowledge', flying the Fury, Cougar and Demon, and now the Cutlass as well. First F7U class started in November 1954. The Project's other six F7U-3s went to VF-124, including the Project's former C/O, LCDR J S 'Bud' Brown. These aircraft formed the nucleus of the Navy's first operational Cutlass squadron, which was to make the first operational Cutlass cruise on board Hancock in August 1955. With the transfer of the aircraft, 'Project Cutlass' was discontinued, the task of bringing the F7U-3 up to operational speed completed.

Over the next few years, the F7U-3 was successfully intro-

Top: 129678/3 formated with a FAWTUPAC TV-2 over California during an air-to-air photo session. Middle: The same aircraft is about to launch from the USS Hancock; the HUP plane guard helicopter is waiting nearby. Note the bungee cord attached to the nose leg, which prevented the catapult bridle from falling away (see main text). Bottom: 129678/3 coming in for a landing on Hancock, the bungee cord arrangement is clearly visible here as well. Note that the hook is down.

duced into operational service, but substantial difficulties were encountered. One of the greatest problems that remained during the operational service life was the aircraft's long nose gear. Although it had been strengthened, the aircraft had a tendency to trap on board a carrier 'nose first' and the whiplash effect caused regular nose gear collapses. During the 1954-1955 VF-81 Med cruise on the USS Ticonderoga, a nose gear collapse, and the squadron's inability to properly repair this, caused the unit to be stationed ashore at Port Lyautey during the rest of the cruise. VA-66 (USS Ticonderoga, 1956) and VA-83 (USS Intrepid, 1956) also suffered the same problems during their cruise. The final Cutlass cruise was made by VA-116 on board the USS Hancock. When they returned home in September 1957, the unit started converting to FJ-4B Furies. This was the end of the line for the F7U Cutlass, also known as the 'Ensign Eliminator' or 'Gutless Cutlass'; it had been in operational service for just three years and bluntly said: it had been a disaster.

Credits: Mark Nankivil, Vought Retirees Club, National Museum of Naval Aviation, Naval Fighters No.6/Steve Ginter, biography of Wally Schirra and several 1954/1955 back issues of Naval Aviation News.

The 'Project Cutlass' flight line at NAS Miramar, showing 129657/4 and 129637/2, plus three additional uncoded examples. Note that a long boarding ladder was needed to get inside the airplane!

F7U-3 129662/1 being positioned on Hancock's C-11 catapult. Note the *newly installed blast deflector on the* left; this device was built and installed after it turned out that the afterburner of the Cutlass scorched the wooden deck of the carrier!

An unidentified Cutlass is about to take off from the USS Hancock (CVA-19, hence the code on the bow), with afterburners blazing. Clearly visible are the walkways on the wings, which were painted either a dark grey or dull black. Note that several of the deck crew are trying to protect their ears from the deafening noise. It would appear that, by that time, there were no hearing protectors capable of muting the noise of the aircraft's jets! Also note that this aircraft is about to take off with its canopy open, allowing the pilot to egress rapidly in case of an emergency, while the Cutlass on the catapult on the previous page has a closed canopy.