

# Centennial of Naval Aviation

## It's a Wrap!



Douglas A4D-1 (BuNo 137814) was the third of 2,960 Skyhawks built. Primarily used as a weapons test aircraft during its active service, 137814 is now a proof-of-concept aircraft for the use of vinyl adhesive “wraps” to ensure that “gate guards” are attractive and presentable. (China Lake Public Affairs)

*Capt. Rich Dann*

When aircraft reach the end of their useful service lives, a majority are sent to the 309th Aerospace Maintenance and Regeneration Group (AMARG) at Davis-Monthan Air Force Base, the “Boneyard” for disposition and disposal. Some aircraft are distributed to museums and other displays, while others are sent to military bases as “gate guards.” Gate guards, typically mounted to a pylon or set in an air park are at the mercy of local weather conditions, and without proper care over time can begin to look forlorn and faded.

The option of repainting a gate guard can be an expensive proposition. Environmental, monetary and safety concerns can make the effort nearly impossible to coordinate and cost prohibitive to execute.

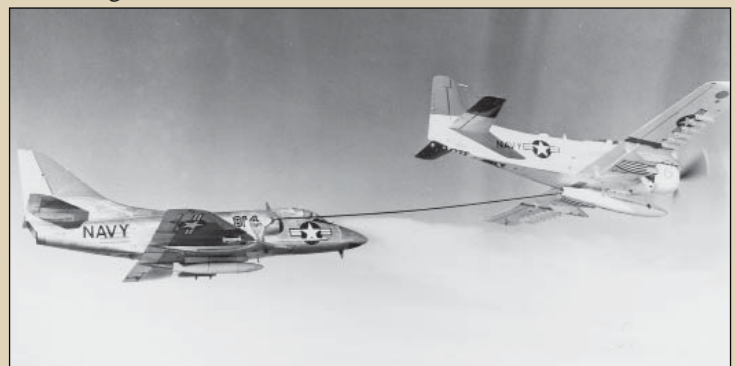
NASCAR and Indianapolis racing teams for the most part have long since stopped painting their racing automobiles. With the many sponsorship logos that are applied to the cars, most race teams have gone to the use of vinyl “wrapping” as a means of decorating their machines. The Navy is now involved in a similar effort using vinyl adhesive wraps.

Naval Air Weapons Station China Lake, a leader in advancing technology in the field of weapons development has recently set a new standard in the maintenance of gate guard aircraft. Since 1969, Douglas A4D-1, (BuNo 137814) has graced the flag circle at the base. While painted in an attractive, but inaccurate scheme, the aircraft was in need of a facelift by the spring of 2011.

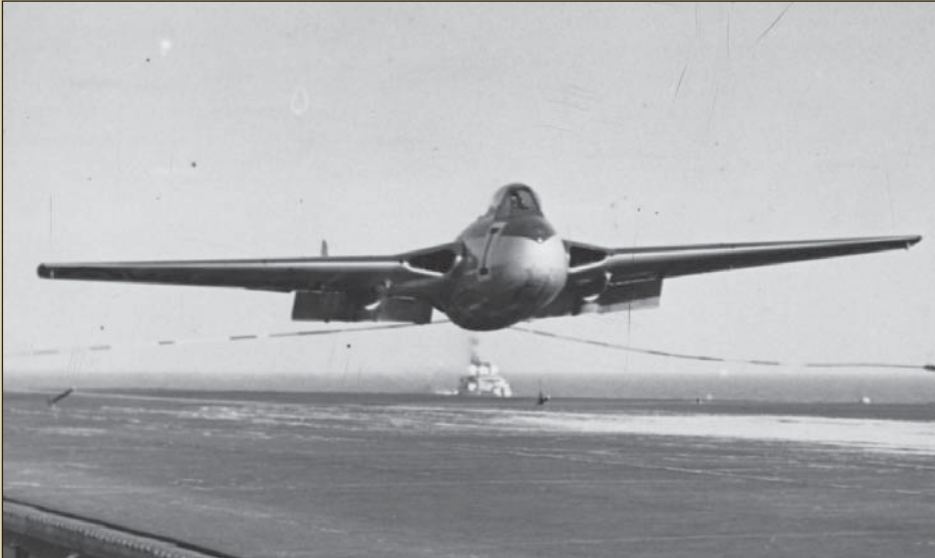
137814 was the third A-4 Skyhawk ever built. Following

some developmental testing the aircraft was assigned to Naval Ordnance Test Station (NOTS) China Lake, where it remained until its retirement in 1963. Some of its duties included in-flight refueling tests.

Mr. Aaron Podell, of AP Studios in Ridgecrest, Calif., was contracted to apply the wrap. Coordinating closely with Cmdr. Ian Anderson, Executive Officer of VX-31 and Capt. Rich Dann at Commander, Naval Air Forces (CNAF), the A4D-1 was first wrapped in the basic aircraft colors. Once complete, all additional markings were added and sealed. With the success of the A4D-1, the next aircraft in line to be wrapped is F-4S (BuNo 157259) at NAS Point Mugu, Calif.



Douglas A4D-1 (BuNo 137814) seen during its test days at China Lake. 137814 was tested with a wing-mounted refueling probe. In-flight refueling was incorporated into A4D-2 and later Skyhawks. (Gary Verver)



Lt. Cmdr. Eric “Winkle” Brown of the Royal Navy’s Fleet Air Arm catches a wire on HMS WARRIOR while testing the “Flex Deck” concept of carrier landing. (NNAM)

## Flex Deck Follies

Thomas C. Hone, Norman Friedman, and Mark D. Mandeles

In 1946, the engineers and technicians at the Royal Navy’s Farnborough facility were actively developing and testing their prototype flexdeck, or cushioned carrier landing deck. The flexdeck was actually “an interim measure which, if used with existing jet designs with their undercarriages removed, would teach us a lot and show the way to the solution” of the problem of creating a new type of carrier. That, at least, was the view of Rear Adm. M. S. Slattery, the Royal Navy’s Chief of Naval Research, in April 1945.

After extensive tests of developmental models of flexible landing surfaces, the staff at Farnborough began working on a full-scale system in January 1946. As anticipated, some major problems developed. The “cushion” for the flexible deck was composed of a series of inflated, sausage-shaped flexible cylinders. On top of the cylinders was a flat rubber deck—the “carpet”—along which the landing aircraft was to skid. Tests with modified gliders dropped onto such a surface showed that a method had to be found to keep the weight of the landing aircraft from pushing one inflated cylinder over its neighbors and thereby reducing dramatically the cushion effect.

The real problem confronting the ground crew at Farnborough, however, turned out to be the carpet itself. As one of the engineers observed, “nothing of this magnitude had been attempted before, [and] a great deal of experimental work with the manufacturers [was] necessary before the design could be finalized.” Beginning in March 1947, the engineers and technicians at Farnborough began testing a flexible deck two hundred feet long and sixty wide, complete with its own arresting gear cable. The first manned landing was made on 29 December 1947 by the noted RN test pilot Eric Brown, and it nearly cost him

his life. He was fortunate not to be seriously injured or killed.

Tests continued in 1948, and Brown made “forty of these landings in all” at Farnborough. Then the flexible deck was installed aboard carrier HMS WARRIOR, and Brown put a Vampire down on it for the first time on 3 November 1948. After a long string of successful landings, Brown argued in his report of the trials on Warrior “that the principle of flexible deck landing for undercarriageless aircraft is fundamentally sound. . . It may even be that future swept-back and delta plan form aircraft will be forced to adopt this method of landing on carriers, since all calculations point to serious wheeled landing problems on such aircraft.”

Brown was puzzled that other navies did not perceive the utility of the flexdeck. He

knew that the U.S. Navy’s Bureau of Aeronautics had watched the progress of the Royal Navy’s work, and he knew that engineers in BuAer were interested in it. What he may not have known about, however, was the opposition to the flexdeck by BuAer’s chief, Rear Adm. Alfred M. Pride. Once Pride left BuAer and became the aviation type commander for West Coast aircraft in May 1951, the engineers in BuAer who thought that the flexdeck might have potential got the green light to develop a version for the U.S. Navy. Though that version was eventually tested, the U.S. Navy never adopted the flexdeck, mostly for the same reasons that the Royal Navy did not make it standard.

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Grumman F9F-7 Cougar (BuNo 130862) upon completion of an arrested landing at NAS Patuxent River on February 1, 1955. The belly of the aircraft was beefed up significantly to absorb landing loads. (NNAM)