Last Cla

Gert Kromhout and Stephan de Bruijn went aboard the USS Theodore Roosevelt for the last F-14 carrier qualifications undertaken by the Tomcat Fleet Replenishment Squadron, VF-101 'Grim Reapers'.

ON APRIL 13, 2005, Lieutenant Junior Grade (LTJG) Matt Nieswand made aviation history as the last pilot to qualify on a carrier in an F-14 Tomcat. He was in the last Tomcat class of Fighter Squadron 101 (VF-101) 'Grim Reapers', the sole F-14 Fleet Replacement Squadron, based at Naval Air Station Oceana, Virginia. *AFM* seized the chance to go aboard the USS *Theodore Roosevelt* (CVN 71) during Tomcat carrier qualifications.

A Fleet Replacement Squadron (FRS) is responsible for specific air crew training for types in service with the US Navy, and since 1976, VF-101 has acted in this role, initially for the Atlantic fleet and since October 1, 1994, as the sole Tomcat FRS for both the Atlantic and Pacific fleets. However, early September 2005 saw the start of the final Tomcat cruise, with Fighter Squadron 31 (VF-31) 'Tomcatters' and Fighter Squadron 213 (VF-213) 'Black Lions' embarked on board the USS *Theodore Roosevelt*. Both squadrons are due to begin transition to the Super Hornet on their return to NAS Oceana in early spring 2006. As a result, the requirement for new pilots and Radar Intercept Officers has gone, and VF-101 is now preparing for disestablishment on September 30, 2005.

On a stormy day in March this year, on board USS *Theodore Roosevelt* (CVN 71), known as the 'Big Stick', under way in the western Atlantic off the coast of North Carolina, Lieutenant Junior Grade (LTJG) Daniel 'Bunny' O'Hara, one of three pilots making up the very last Tomcat class, is feeling a little nervous, though reasonably confident. He is halfway through his carrier qualifications and his mission this particular week is to make ten carrier arrested landings (traps) and two touch-and-goes during the day, plus another four, two of which will be at night, all within a couple of days. After this, the 'nugget' pilot (a term used by the US Navy for a newly-

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VF-101 has had F-14D BuNo 163414/'AD163' painted with a full-colour tail featuring its Grim Reaper insignia. ALL PHOTOS GERT KROMHOUT

The pilot of F-14D Bu 163414/'AD163' pulls forward from the landing area after completing a trap aboard USS Theodore Roosevelt.

qualified pilot) is carrier-qualified. The previous night, until the wind increased to hurricane force, the 26-year-old from Hendersonville, Tennessee, had made six day and two night traps.

Today the storm is still raging at 70 knots, generating waves up to 18ft (5.5m) high in which the big ship heaves and sporadically shudders. These conditions are considered too severe for young qualifying pilots to fly in, so the aircraft remain tightly chained to the deck. While O'Hara's fellow pilots play cards to kill time, he is keen to relate his experiences of Tomcat training and the details of his flying career to date. Without a good deal of luck, dedication and hard work, O'Hara wouldn't be on the ship at all. As a matter of fact, this is his last opportunity to qualify. If he fails, he could have to leave the Navy, so he has good reason to be nervous.

Luck

Like so many other youngsters, O'Hara was inspired by going to air shows with his father. After seeing the F-14 performing in displays and starring in the »

Naval aviators must be proficient at manoeuvring their aircraft type around the crowded deck of an aircraft carrier. The Tomcat is not only big but is also a swing-wing aircraft, so it requires control and co-ordination with the flight deck crew. This VF-101 F-14D pilot manoeuvres the jet close to the deck edge.

movie 'Top Gun', he knew he wanted to fly Tomcats.

The demands of flight training left him in no doubt that the road to a fleet fighter squadron was a long one, strewn with obstacles. Without persistence, hard work and luck he would not have reached the last, and most difficult, part of his training – carrier qualifications.

O'Hara's first setback came in primary flight training. Although he did well in this phase, eventually becoming the best in his class, his dream of flying the Tomcat vanished before his eyes when he learned there was no fighter slot available. Instead, a future flying less thrilling planes, such as P-3s, E-2 Hawkeyes or helicopters, seemed to beckon.

His lucky day arrived when someone from another class decided to quit and he got a late slot in advanced training for jet fighters. By this time, the US Navy had put forward the Tomcat-Super Hornet transitioning schedule, and he knew he would get only one chance at the Tomcat as the need for F-14 pilots was diminishing rapidly.

Further success in his advanced training paid off. Among the eleven pilots who graduated, only two slots for Tomcats were available, and O'Hara's excellent performances gained him one. "It was a dream come true," he recalled. "When I entered flight training I knew the Tomcat was being retired, so I really had to try hard, and I was rewarded for that." In March 2004 he reported to VF-101.

Difficult Task

"The first time I took off in an F-14 was amazing," he continued. "That was the first time I truly felt like I was a fighter pilot. I couldn't believe that I was flying the same jet that I saw in 'Top Gun' as a child. It was an amazing feeling that made all the hard work in ROTC (Reserve Officer Training Corps) and flight school worth it." O'Hara performed well throughout all the elements of the training programme, making some 50 flights before proceeding to carrier qualifications.

The unique feature of carrier aviation is that it does not matter how well a pilot has performed in these 50 or so flights because flying the aircraft onto the deck is what really makes him a naval fighter pilot. If a pilot does not carrier-qualify, his previous achievements are of little value. Carrier qualification training, (dubbed 'carquals'), begins with six flights on the simulator, followed by 12 to 15 sessions of simulated approaches on land, known as Field Carrier Landing Practice. In total, this comprises between 120 and 150 practice approaches. The Oceana jets carry out this type of training at Naval Auxiliary Landing Field (NALF) Fentress, some 6 miles (10km) southwest of the station, where there is a runway with an outlined carrier deck, an optical landing system and an LSO (landing signal officer) platform.

O'Hara found a difficult task ahead of him. According to Commander Paul 'Butkus' Haas, the F-14 is a fairly difficult aircraft to land aboard a carrier. "It is large and heavy so you have to fly precisely in order not to damage the plane. Our rate of descent is 700ft (213m) per minute with a maximum speed of 130kts and a minimum of 120kts. The angle of attack is 15 units." The line-up is critical because of the aircraft's huge 64ft (19.5m) wingspan and heavy weight. The landing area is 125ft (38m) wide; the flight deck, with the exception of the landing area, is usually packed with aircraft. It is imperative for the pilot to land the aircraft as close to the centreline as possible, in order to prevent strain on the ship's arrestor gear and to minimise damage to the aircraft's landing gear. Its configuration and behaviour in the landing pattern has earned the Tomcat the nickname of the 'Turkey'.

The Landing System Officers (LSOs) – pilots with above average carrier landing performances – make sure that when the students go to the ship they are ready. Lieutenant Erick Hess, a 30-year-old from Minneapolis, Minnesota, is an experienced pilot and LSO who has made 200 carrier landings and has 950 Tomcat hours. He contends that students' most common mistakes are flying underpowered, becoming overpowered in an effort to compensate for being too low, and making a slow scan for the ball. The ball is a colloquial US Navy term for the visual landing aid used by Navy pilots to determine if they are on the correct glide slope or not. "The latter is something even experienced pilots may have, but they recognize it more easily and fight it through experience."

Steam rises from the deck of USS Theodore Roosevelt as the catapult crew prepares a VF-101 F-14D for launch in the western Atlantic, off the coast of North Carolina.

Hess says a pilot must scan the ball, his head-up display and line-up while listening to any corrections the LSO comes up with. It is a constant cycle and the time it takes varies between pilots. Cdr Haas, a veteran pilot with around 650 carrier landings, admits he has a lazy scan. "My scan lasts about two seconds. I have to force myself to shift attention. Young pilots tend to fixate on one thing but you have to constantly correct speed, attitude and heading." Erick Hess says that LSOs immediately sense a slow scan by rocking wings, among other tell-tale signs. "We get inside the pilot's mind - we know what's going on in the cockpit."

Fixation Problems

The big difference between making carrier landings and landing at Fentress is that wind and lift behaviour is totally different. Hess said: "At Fentress you have ground effect in the final stage of the landing that acts as cushion and provides additional lift. You don't have that on the ship, not even above the ramp. In fact, the wind blows over the bow and descends behind the ship, resulting in a loss of lift. That's the opposite of what happens on land. This phenomenon is called the 'burble' and fires up about a quarter mile behind the ship. On the other hand, the beauty of a ship is that it sail or steer into the wind to create optimal landing conditions. "We try to have 25-40kts wind. The weaker the wind, the higher the ship's speed has to be. But there is a penalty. The higher the ship's speed, the bigger the 'burble' and the corrections the pilot has to make," said Erick Hess. Another big difference is that for noise abatement procedures, pilot have to fly 200ft (61m) higher at Fentress than at the boat, which causes a difference in how pilots are moving the throttle.

O'Hara went to the ship for the first time in November 2004 and experienced at first-hand the very different conditions at sea. "The training we get at Fentress is somewhat negative for several reasons. I had heard about the 'burble' in flight school, but due to the small wings of the T-45, the 'burble' doesn't affect it like it does to the Tomcat with its huge, straight wings. I did well at the ship in the T-45 and never experienced the 'burble' until taking the F-14 to the boat. So I did not expect real problems to happen."

O'Hara did not qualify, but when this happens, a pilot often gets a second chance. If he doesn't qualify on that occasion, he is out. The historical average is that fewer than 20% of pilots do not qualify. Well, O'Hara didn't make it the second time either, because of fixation problems, and everybody, including O'Hara himself, believed he was out. However, luck took a hand again. As part of the normal procedure, his instructors were interviewed and a report went to the skipper of VF-101. He endorsed it and sent it on to his boss, the commander of Strike Fighter Wing Atlantic, with his own recommendations. The report was subsequently forwarded to the Commander US Naval Air Force Atlantic Fleet, who ultimately decides a pilot's fate. This admiral had an interview with O'Hara and, to many of his colleagues' surprise, a week later he was flying Tomcats again. This may have had something to do with the fact that there was no time left to train a new Tomcat pilot - anyway, the admiral's trust in O'Hara's ability paid off.

One of the senior members of the board who reviewed his ratings following the second 'carquals' was CDR Jim 'Puck' Howe, Executive Officer of VF-31, O'Hara's first operational posting. Puck, an experienced Tomcat pilot with 2,500 hours, had also been on the *Roosevelt*, for re-qualification training with VF-101 following a year of studies at the Naval War College. "I seriously thought he would not make it," he said, "but he has a great attitude and is a talented aviator. He is doing well now."

O'Hara finally qualified on March 9, 2005. "I found that my scan was slow, and I needed to force myself to scan from line-up to the ball, and back and forth, even if I was on centreline and had a centred ball. You will see more movement on the ball when you do not stare at it."

Towards Disestablishment

Commander Haas has had the unrewarding job of leading his unit towards disestablishment on September 15 this year. The Navy has decided that Strike Fighter Squadron 106 (VFA-106) 'Gladiators' will in future carry out the Atlantic fleet Super Hornet training. Haas himself will not be making the transition to the F/A-18 because of his age.

'I couldn't believe that I was flying the same jet that I saw in 'Top Gun' as a child.'

A VF-101 F-14D in the break for landing at NAS Oceana, as its wings extend to the forward position. Below: *Line-up for landing is critical in the F-14 because of its weight and 64ft wingspan - over half the 125ft wide landing area. Trapping close to the centreline reduces the force and stress induced on the arrestor gear.*

He does not know how many pilots and RIOs his squadron has trained since 1976, though he estimates the figure at between 3,000 and 4,000. RIOs don't do 'carquals', but go to fleet squadrons straight after their training. The last four graduated in January 2005 and were transferred in equal numbers to VF-31 and VF-213.