SUPERBASE 24

KEY WEST

'Top Guns' of the East Coast

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OSPREY
AEROSPACE

Photo equipment, as always, is a bunch of well-used Nikon F-4Ss and Nikkor lenses ranging from 15 mm to 500 mm. Film is usually Kodachrome 64, with a smattering of Fuji 100 and Fuji Velvia thrown in.

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Front cover Stalking his prey through the towering cloud formations out over the Dry Tortugas, an adversary pilot from VF-45 'Blackbirds' prepares himself for combat in his potent F-16N Fighting Falcon

Back cover Skyhawks abound on the 'Blackbirds' ramp. As can be seen from this line-up shot, no two aircraft appear to share a common scheme. The paint shop at VF-45 must stock a veritable kaleidoscope of colours to allow the squadron to operate such a varied fleet of airframes

Title page Cruising at altitude over the Florida Keys, a battered A-4E Skyhawk from VF-45 'Blackbirds' plays 'follow my leader' with the shadow of the photo-ship. Enjoying weather like this for much of the year, the Keys are the ideal venue for serious air combat manoeuvring (ACM), US Navy style

Right The 'Blackbirds' ramp at Naval Air Station (NAS) Key West sees some of the oldest aircraft in the Navy's inventory parked alongside some of the newest. Unlike the weary Skyhawks, the F-16Ns all wear the same scheme as applied by General Dynamics at their Fort Worth plant in Texas. Originally the recipients of 10 F-16Ns and two TF-16Ns in October 1987, VF-45 passed six single seaters and a solitary 'twin-sticker' onto fellow adversaries VF-43 'Challengers' at NAS Oceana, Virginia, in July 1989


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Introduction

Drive south out of Miami, down a necklace of islands linked by a two-lane bridge no wider than a country lane, and eventually you will run out of blacktop in Key West. It's the end of the line in the southeast United States; go another 90 miles, as the crow flies, and you will be in downtown Havana. Hard by the jumping resort town of the same name you will find Naval Air Station Key West, a base that every American military aviator loves to visit.

Key West is primarily a training base for Navy and Marine Corps fighter pilots. The F-14 community on the eastern seaboard, centred around the naval base at Norfolk, Virginia, spends months on end flying and fighting in the usually perfect weather southwest of Key West over the Dry Tortugas. Ditto the Marine Hornet guys from Beaufort, South Carolina, and all sorts of other Navy and Marine squadrons in search of more pleasant winter weather. French Mirages and British Tornados often visit as well, especially when the European flying weather goes from merely horrible to the truly ghastly.

The genial base hosts, and resident bad guys, are the VF-45 'Blackbirds', a longtime Navy attack squadron that shifted to adversary duty in the 1980s. The 'Blackbirds' simulate all manner of 'Commie' and 'Third World' threats in their ageing A-4 Skyhawks and their much more formidable F-16Ns – the stripped-down, GE-powered electric jets that can thrash just about anything in a dogfight. All new F-14 crews being trained at the Norfolk RAG (Replacement Air Group) spend several weeks at Key West, taking advantage of the weather and the instructional expertise of the 'Blackbird' aggressors.

The hangar next door is home base for another kind of adversary squadron; VAQ-33 'Firebirds'. This outfit flies A-3s, EA-6s, EA-7s, and P-3s to simulate a wide range of enemy electronic threats. The VAQ-33 operators can pretend to be anything from an Exocet anti-ship missile to an enemy AWACS aircraft. And they love to show how Soviet-style radar and communications jamming can ruin a beautiful Florida afternoon.

America's ongoing air war against drug runners, necessarily cloaked in secrecy, stages out of many southern airfields, and NAS Key West is one. The Falcon and Citation business jets owned by the US Customs Service, some of them loaded down with F-16-type acquisition radar, are frequent visitors, as are the flat-black UH-60 helicopters used for lightning raids on the smugglers' airstrips. On my last visit a detachment of old, but still useful, Army OV-2 Mohawk 'spook' planes was keeping a low profile at a far corner of the base. The pilots were polite, but they couldn't discuss their mission. Drugs, I asked? The look said, 'What do you think, stupid?'

Some 20 miles north of the base, visible on all but the cloudiest days, a tethered aerostat radar balloon hovers over Duck Key. A string of these high-tech blimps provides almost seamless radar coverage for the entire American border from Florida over to California. Another flying oddity native to the area is a squadron of turbine-powered PHM hydrofoil patrol craft. Top speed for these hummers is classified; suffice it to say that when we chased after one in an SH-3 helo to get some pictures, we were unable to close the gap until the PHM skipper quit playing games and came about. The helo pilots were plainly astonished.

NAS Key West is popular among plane-spotters; there are plenty of great vantage points, particularly from a small boat. At one time or another, the base plays host to everything the Navy and Marines fly. But at the end of the day, forget about cold steel, head into town, and partake of a timeless conch ritual (conches, pronounced 'conks', are native-born Key Westers, a rare breed indeed): grab a pina colada, stroll over to Mallory Dock, and watch the most perfect sunset this side of paradise.

Our thanks to a couple of ace public affairs types, Ens Ozzy Osbourne and Ens Pam Kunze, for their tireless help with this project.

Contents

Long gone but not forgotten, the stylish lines of the sleek North American A-5 Vigilante are preserved for posterity at Key West in the form of a late-build RA-5C reconnaissance aircraft. Beautifully maintained in the markings of replacement air group (RAG) squadron RVAH-3, this 'Viggie' was the fifth airframe built in the final RA-5 batch of 46 constructed at North American Aviation's plant at Columbus, Ohio, in 1969. Designated a Phase II machine, BuNo 156612 was powered by two General Electric J79-GE-10 turbojets, similar to the engines installed in the F-4J Phantom II. Capable of Mach 2.1, the aircraft was comprehensively equipped with a side-looking radar under the fuselage, a set of oblique, vertical and split-image cameras, and electronic countermeasures (ECM) receivers and jammers. RVAH-3 trained many Vigilante crews at Key West from the early 1960s until finally being disbanded in the mid 1970s

'Blackbirds'

NAS Key West's close proximity to the vast expanses of the Atlantic can be clearly seen in this dramatic pod shot taken from the wing of a 'Blackbirds' A-4E. Overflying the busy ramp, a pair of Skyhawks flank a pair of F-16Ns in a special formation put up for the author to photograph. The sharing of ramp space by VF-45 and the Tomcat-equipped VF-101 'Grim Reapers' (Key West Detachment) gives the nugget F-14 crews a chance to watch the experienced adversary pilots at close quarters, both on the ground and in the air

Above Totally devoid of external stores, an F-16N cruises between cloud layers in search of today's 'enemy'. Powered by a General Electric F110-GE-100 afterburning turbofan engine, and without the internal M61A1 cannon and bulky Westinghouse AN/APG-68(V) pulse-Doppler radar, the N (for Navy) model Fighting Falcon is the 'hot rod' of the burgeoning F-16 family. The box-shaped fairings at the tip and base of the large fin contain antennae for the aircraft's AN/ALR-69 radar homing and warning system, this device, along with the ALE-40 chaff dispenser, providing realistic jamming for opponents during ACM sorties

Right This F-16 carries a solitary AIM-9 Sidewinder acquisition round on its port launch rail, this dummy missile allowing the pilot to achieve an authentic lock-on on the radar screen of his APG-66 system. Although the Navy's 26 Fighting Falcons are structurally equivalent to the USAF's small inlet F-16C/D Block 30 machines, they carry the basic lightweight radar of the earlier Alpha and Bravo models

Above The pilot completes the gear rotation in his Fighting Falcon before altering his course and heading out to the fully instrumented Dry Tortugas ACM range off Florida's southern coast. Balancing the Sidewinder round on this aircraft is the familiar dayglo orange Cubic Corporation Air Combat Manoeuvring Instrumentation (ACMI) pod, a vital tool in the adversary training programme. Invariably mounted on the starboard Sidewinder rail, the ACMI pod acts as an airborne sensor, transmitting the aircraft's altitude, speed, turn and bank, climb and descent, G-load, weapons status and gunsight picture back to the Tactical Air Combat Training System (TACTS) computer at Key West through a series of microwave links. Deciphered jointly by the computer and its controllers, the information is transferred into a realistic three-dimensional form and played back to participating crews during the debrief

Right Anxious to relive a successful sortie in the TACTS building, the pilot reefs his aircraft around into the final approach pattern at Key West. The full span leading edge flaps have been drooped to give the aircraft more lift at lower landing speeds, and to compensate for the disruption of the airflow created by the undercarriage. The small bullet-shaped pods on either side of the intake emit signals which enhance the diminutive fighter's radar cross-section, thus giving Tomcat radar intercept officers (RIOs) more training in picking up targets at longer distances

Left To allow pilots to attain a type rating on the Fighting Falcon, each adversary unit operates at least one TF-16N. Identical to the single seater in every respect, bar its internal fuel capacity, the 'twin-sticker' is readily used as a fully-fledged ACM opponent for fleet Hornets and Tomcats. Taxying out to the runway from the squadron ramp, this TF-16 has a 'trainee' adversary pilot strapped into the front seat and a fully-qualified F-16N instructor in the back. Being a type not regularly encountered by fleet fighter pilots, aircrew are assigned to the adversary units with little or no flight time on the Fighting Falcon. This situation is soon reversed as the newly arrived pilot is immediately immersed in the squadron's training programme. Nicknamed a PUT (Pilot Under Training), he gains stick time on all VF-45 types for between four to twelve months before graduating to the AP (Adversary Pilot) stage. Finally, if he shows exceptional aptitude as both a pilot and a teacher, he will be upgraded to an IP (Instructor Pilot) rating. Very few aircrew get through to this stage and most adversary units have only two or three IPs on their books

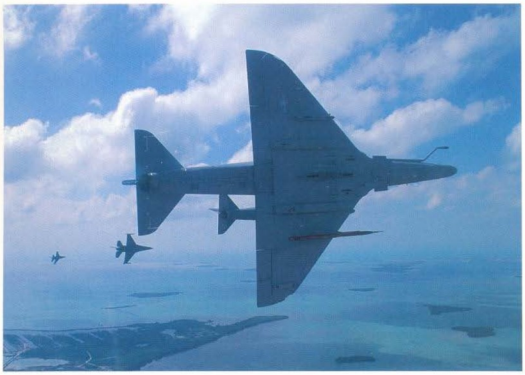
Above Clearly visible to the tower, 'Blackbird 24' taxies past en route to the holding pan. Built for dogfighting, the F-16Ns have drastically upgraded the Navy's adversary training programme for fleet fighter and attack squadrons. Simulating the fourth generation threat of the MiG-29, Su-27 and Mirage 2000, the navalized Falcon has won nothing but praise from all those that have flown in it, or against it. Flown hard and fast, the F-16N force is skilfully maintained by contracted General Dynamics groundcrew. This has resulted in high utilization rates and low operating and support costs for the 26-strong fleet

During training exercises with fleet units, one v one sorties make up the bulk of missions flown. However, as the course progresses, multi-bogey sorties are undertaken, which see dissimilar types from within VF-45 combining to offer a virtually unbeatable mixture of second and fourth generation threats. Here, following the lead F-16N in echelon right formation, a pair of A-4Es and a single TF-16N transit out to VF-45's happy hunting ground. Small, tactically camouflaged and wickedly nimble, the Skyhawks and Fighting Falcons would give any Tomcat formation a work out they would not forget in a hurry. A close look at the Skyhawks reveals that although both aircraft are Echo models, one airframe has a straight, TA-4J-style, refuelling probe rather than the more traditional L-shaped fitment

Above Looking remarkably similar in planform, a mixed A-4E/TA-4/F-16 three-ship formation zooms over Key West at height, before pitching out and entering the circuit to land. Aside from the half-dozen F-16Ns, eight A-4Es and four TA-4Js are also on strength with VF-45

Right VF-45 perform a formation fly-by for the benefit of a solitary VF-101 F-14 on the ramp below. If the Tomcat's trainee pilot is switched on he will delay launching until these guys have found employment somewhere else because 'Blackbirds' like nothing more than nugget F-14s filling their gunsights!


NAVY



Above Mission accomplished, the four-ship splits at pre-determined intervals and commences a race-track pattern for recovery back aboard NAS Key West. Precise formation breaks above the base have long been traditional amongst Navy ranks. The light attack community have always proclaimed themselves the masters of over-base etiquette, although this sharp recovery won't do the adversary cause any harm

Right Visors down, the adversaries head westward over the mainland in search of playmates. Lacking the F-16's wingtip rails, the A-4 often carries the ACMI pod on a pylon beneath the fuselage, or under either wing. In this instance, the rail is firmly secured to the plumbed centreline station, but the pod has been left back at base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Above Wearer of 'Bort' number 10 for many years, A-4E BuNo 151064 is pushing towards its 30th birthday, having been built in 1965 at Douglas' El Segundo factory in California. One of the younger (!) Skyhawks flown by VF-45, this aircraft has been on the squadron books since at least 1984, and, with regular maintenance, could still be flying over the Keys for another decade yet

Left VF-45's association with Ed Heinemann's classic A-4 goes back 24 years to 1967 when the 'Blackbirds' were providing instrument training for attack pilots at NAS Cecil Field, Florida. Transitioning from the venerable TF-9J Cougar to the TA-4J Skyhawk, the then VA-45 performed this role up until August 1976 when the Chief of Naval Operations added Dissimilar Air Combat Manoeuvring (DACM) training to their overall brief. Initially only camouflaging two TA-4s in early adversary colours, VA-45 trained both shore-based and embarked air wings in 'hand to hand' combat. A move south to Key West in March 1980 was followed four years later by the unit being placed totally under the control of one of the Navy's Adversary Commands, the 'Blackbirds' reporting to Fighter Wing One. Redesignated VF-45 on 6 February 1985, the squadron was now totally dedicated to adversary flying


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Left Landing gear down and trailing edge flaps deployed, a 'cool' blue-grey Echo glides over the threshold towards the Key West blacktop. Judging by the lack of an ACMI pod beneath the fuselage, it is likely that this Skyhawk has just completed a post-maintenance check ride. Garnering spares for the ageing A-4s has become an art form perfected by adversary units on both coasts, many maintenance shops having to resort to fabricating parts themselves. High-stress equipment like leading edge slats, slat rails, and associated hardware, are highly prized items amongst adversary squadrons. The supply chain for the Skyhawk has also been somewhat neglected by Navy procurers over the past decade, the emphasis being firmly placed on high profile fleet aircraft

Below As can be seen from this shot, rudders are also regularly swapped amongst aircraft at Key West. Having taxied the short distance out from the 'Blackbirds'' ramp to the holding area for the runway, the pilot stops briefly to check the movable surfaces of his A-4 once more, before tidying the airframe up and opening the throttles


LT MURPHY
''SMURF''

Left What else could the pilot of a bright blue jet be called? Sitting comfortably on his McDonnell Douglas ESCAPAC IG-3 zero-zero ejection seat, Lt Murphy studiously watches his plane captain signalling to him from the ramp during engine spool-up. Hemmed in somewhat by the heavy canopy framing forward and the high spine aft, the A-4 adversary jock has to work hard to keep his six clear of F-14s and F/A-18s. Working in what can best be described as a snug environment, and possessing no air-to-air radar, the adversary pilot learns his craft the hard way in the Skyhawk

Below Surrounded by ramp clutter, 'Red 13' basks in the sunshine on a typically bright Key West afternoon. Prior to commencing a sortie, the A-4's engine fuel system access doors are always cranked open both on the port and starboard sides. The small indent to the wing leading edge near the fuselage was once filled with the barrel of a Mk 12 20 mm cannon, one of a pair long since removed from the aircraft in an effort to lighten the overall airframe and make it more suitable for ACM work

Above Back aboard Key West, BuNo 158083 is given the once over by VF-45's experienced maintenance personnel, before being sealed up against the elements. Part of the third production batch of J-models delivered to the Navy, this Skyhawk was just one of 292 Juliets built by Douglas. Prior to the TA-4J, no less than 239 TA-4Fs had entered employment as operational trainers with the Navy, the Foxtrot differing from the Juliet in having a brace of Colt Mk 12 cannon fitted, a full navigation/attack system (APG-53A terrain following radar and the AJB-3A bombing system, as fitted in the A-4E) for the pilot in the slender nose, and a gutsy J52-P-8A buried in the fuselage

Right Something of a mystery machine, this blotchy TA-4J recovers at Key West after transitting in from NAS Guantanamo Bay, Cuba. Wearing no codes on its tail, this aircraft actually belongs to Fleet Composite Squadron Ten (VC-10) 'Challengers', and is one of the few Skyhawks still fitted with wing cannon. Besides providing ACM training for fleet assets exercising in the area, VC-10 is also charged with the responsibility of defending 'Gitmo', the TA-4s being configured to utilize AIM-9 Sidewinders, as well as 'iron' bombs and cluster bomb units. Plumbed with a pair of 400-US gal external tanks, this aircraft (BuNo 154342) stopped at Key West for fuel en route to the Naval Aviation Depot (NADEP) at MCAS Cherry Point, North Carolina. Here, the weary airframe will be broken down into components and totally rebuilt, thus allowing it to serve for at least another five years with the Navy


NAVY
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Above Photographed nine months earlier than in the preceding shot, 'Red 01' wears the more common VF-45 blue/grey scheme here as it lines up on finals. An empty back seat in a TA-4 is a rare sight at Key West, most sorties being flown by both a PUT and an IP. The rudimentary speed brakes on either side of the fuselage are clearly visible in this shot, as is the striped arrestor hook

Left Leaving a faint trace of smoke in its wake, a TA-4J powers away from Key West, the pilot having selected gear retraction soon after rotating. Although the TA-4 is only modestly powered (its Pratt & Whitney J52-P-6 producing only 8500 lbs static thrust compared to the General Electric F110-GE-100 afterburning turbofan in the F-16N, which produces 27,000 lbs static thrust), its light weight and excellent handling characteristics allow it to hold its own in a tight VFR (visual flight rules) engagement. An AP is rigorously trained to fly like a Soviet pilot, utilizing his mount's strengths and weaknesses accordingly. Therefore, although an F-16N pilot may have a greater capacity to fight in his 'electric jet', if the scenario he is re-creating does not call for this he must curb his aggressiveness accordingly. Alternately, the first generation aircraft simulated by the TA-4 are often flown more enthusiastically to make up for their lack of all up power, the adversary pilots therefore enjoying a less constrained flight envelope

Above When the pre-flight checks have been squared away, and the pilot is still caught up in the mission briefing, there is only one thing left to do – sit back, relax, and try and keep cool. Although VF-45's A-4Es and TA-4Js are still fully plumbed for air-to-air refuelling, the unit very rarely practices this task as most sorties take place within the vicinity of Key West

Right As mentioned previously, VF-45's initial contact with the Skyhawk involved performing instrument training for attack crews in brand new TA-4Js at Cecil in the late sixties. Twenty-five years down the track, twin-stick Skyhawks can still be found on the squadron ramp, although they no longer wear the attractive overall gloss white training scheme, and they are now decidedly second-hand. Plugged into its ground 'life support system', this TA-4 is boarded by its crew prior to commencing a DACT sortie. Strapped in up front is a newly-arrived PUT, whilst 'in back' an IP squeezes himself beneath the large one-piece canopy. The IP's footrest is in fact the now-redundant gun gas shield fitted to all Skyhawks to stop emissions from the cannon entering the engine chamber. Cannons were never part of the J-model's fitment, so the shield has only ever been used as a footrest on this particular Skyhawk


JET
DANGER
INTAKE
RESCUE
00
COMO HENDRICKSON
"MILO"
151038

Left Along with the Skyhawk, the nimble little Northrop F-5E Tiger II has for many years shouldered the load when it comes to simulating second and, to a lesser extent, third generation Soviet fighters. VF-45's experience with the Tiger II, however, is a relatively short one, having only received their aircraft in late 1989. With the throttles wide open on the screeching General Electric J85-GE-21 engines, the pilot smokes away from Key West on an aircraft familiarization sortie. The 'Blackbirds' have five F-5Es and a single twin-stick F-5F on their books

Below Although now wearing 'NAVY' titles on its rear fuselage and a prominent VF-45 star on the fin, this particular F-5E has only recently acquired 'wings of gold' . One of over 80 Tiger IIs delivered to the USAF in the mid 1970s, this aircraft is still decorated in 'desert snake' colours, as applied by its former owners, the now defunct 65th Aggressor Squadron (AS), formerly part of the 57th Fighter Weapons Wing based at the huge Nellis Air Force Base complex in Nevada. The rapid decommissioning of the Air Force's aggressor component 'flooded' the market with well-used Tiger IIs just as the Navy was sending back its leased F-21A Kfirs to Israel. Spoilt for choice, the adversary units closely scrutinized the ex-aggressor F-5Es and chose two-dozen of the least fatigued airframes for use with the Marine Corps' reserve-manned VMFT-401 'Snipers' at MCAS Yuma, Arizona, and the Navy's VFA-127 'Cylons' at NAS Fallon, Nevada, and VF-45 'Blackbirds' at Key West


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DO NOT PAINT

Above Having very little experience on the F-5E, one of VF-45's first 'purchases' was a two-place F-5F. Wearing a distinctive Swedish Air Force-style zig-zag grey/green scheme overall, this Tiger II (BuNo 160966) formerly resided on the Pacific coast with the Naval Fighter Weapons School (NFWS) at NAS Miramar. One of three F-5Fs delivered to 'Top Gun' in December 1977 (the others being BuNos 160964 and 160965), this aircraft transitioned many NFWS PUTs onto the Tiger II, before being phased out of service soon after the 'School received its full complement of six F-16Ns and two TF-16Ns in mid-1988. The F-5E parked alongside spent its past life at Williams AFB, Arizona, training foreign Tiger II pilots to fly the small Northrop fighter. One of 15 Echo models (and seven Foxtrots) on the 425th Tactical Fighter Training Squadron (TFTS) books, this airframe arrived at Key West direct from Williams in late 1989 after its former owners were deactivated

Left 'It was this long, I swear!' The plane captain of 'Red 34' looks less than impressed with his pilot's weekend fishing exploits. Perhaps he will bag a big one on the ensuing sortie? A close examination of the fuselage around the Bort number reveals that a much larger USAF-style code was originally worn by this aircraft. Unlike the original 'radarless' F-5Es that were delivered to the Navy direct from the Northrop factory in the mid-1970s, these surplus ex-USAF machines arrived at Key West with the basic Emerson APQ-153 system fitted, although it is likely that these have now been removed to further lighten the purely VFR fighters

Above There are more red stars present on the Key West ramp now than there are on many former WARPAC bases in Eastern Europe. Ranged alongside its virtual replacement in adversary and aggressor ranks, 'Red 31' sits quietly whilst it is prepared for yet another sortie. Several years ago, most adversary Tiger IIs were temporarily grounded due to wing over-stressing problems brought on by continuous ACM for over 15 years. Many airframes were dismantled and the thin wings sent to Northrop for X-raying and re-stressing. Three years and several million dollars later, the Tiger II fleet is once again up to speed hassling fleet fighters, MiG-21-style

Right Sandwiched between two generations of Navy fighters, 'Red 31' 'bugs out' before the rapidly closing VF-101 Tomcat crosses the threshold. Holding off to one side, and partly obscured by the F-5's jet efflux, two F-4 Phantom IIs from VMFA-321 'Hells Angels' wait their turn to launch. Based at NAS Andrews, in Washington DC, the reserve-manned 'Hells Angels' were deployed to Key West for their annual weapons camp, hassling the 'Blackbirds'


3

The 'students'

Right A big, bad, beautiful thing, the mighty F-14A Tomcat has been the main client for VF-45's services for over a decade, this glossy beast being the Commander Air Group's (CAG) mount at VF-32 'Swordsmen'. Deploying from their homebase at NAS Oceana, Virginia, the 'Swordsmen' transitted on down to Key West for 14 days of solid ACM and air-to-air gunnery practice out over the Keys. After recovering at the air station, the droptanks were ripped off and the aircraft configured purely for dogfighting, as can be seen with this Tomcat, which carries only an AIM-9M acquisition round. Following their thorough work out with VF-45, the 'Swordsmen' headed to Fallon where they met up with other elements of Carrier Air Wing Three (CVW-3) and participated in a Strike *Training* Programme, before deploying once more to sea aboard USS *John F Kennedy* (CV-67). More recently, the unit was involved in protecting attack squadrons striking targets in Iraq and Kuwait during *Operation Desert Storm*

Above Sharing the ramp at Key West with VF-32 were fellow AirLant Tomcat operators VF-103 'Sluggers'. Besides tackling the 'Blackbirds' single-handedly, VF-103 bolstered their own ranks by flying mixed tactical formations with F/A-18C Hornets from VFA-81 'Sunliners' and VFA-83 'Rampagers', all three units sharing deck space at sea as members of CVW-17 aboard USS *Saratoga* (CV-60). As with VF-32, the 'Sluggers' were heavily involved in *Operation Desert Storm*, performing both MiGCAP and reconnaissance sorties. Totally covered in tactical grey, the only colour present on this machine is worn in the interest of safety – the blood red undersides of the wing spoilers and airbrakes signalling to observers on the ground that everything is working as it should


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Above Maintaining textbook separation, a trio of VF-101 Tomcats pass over Key West's runway before pitching out and going dirty to land. The pilot in the trail F-14 is using a little more power than his wingmen to keep formation, hence the dirty 'snail trail' emanating from his exhaust nozzles. A Tomcat carrying ordnance at Key West is something of a rarity, pilots preferring to travel light and keep the thrust-to-weight ratio on the plus side against the emaciated 'enemy'

Above right 'Do you fancy a beer after work?' Being a fleet replacement squadron, VF-101 employ a considerable number of female sailors in the administrative and maintenance roles. They achieve this by being classed as a 'non-combat' unit, which means that they only ever spend a maximum of two weeks at sea aboard a carrier at a time. Here, whilst the nugget (new) RIO tucks his maps and charts down the side of his seat before climbing aboard, an experienced 'Top Gun' graduate pilot, formerly with VF-74 'Be-Devilers', gets the 'gouge' from his plane captain

Below right The heavy weathering beneath the canopy on most Tomcats is a result of scuffing inflicted by aircrew and groundcrew working in and around the cockpit. The Tactical Paint Scheme (TPS) has never worn well in fleet service, its porous finish retaining salt spray, lubricating fluid and the general grime picked up off the flight deck, or base ramp, by the crews' boots. The physical size of the hinging canopy is quite impressive, the row of locking hooks needed to keep it in place being plainly visible!


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100
BUONER

The din of two Pratt & Whitney TF30-P-412s idling on the ramp makes hand signals a necessity between the plane captain and his pilot. Once the crew have completed their pre-start checks the pilot signals to his plane captain who then, in turn, relays the message to his assistant, who is operating the power cart. One finger clearly displayed to the pilot indicates that the starboard engine has ignited successfully, this signal being repeated about a minute later when the second TF30 is coaxed into life. A traditional salute between the two men then completes the flightline ritual and the Tomcat departs on yet another sortie. Just as the aircrew and groundcrew are trained at special schools in their chosen vocation, plane captains also attend special courses at various Naval Air Training Centers to perfect their craft. Operating on grounded types like the venerable A-7B Corsair II, these crews are rigorously trained to cope with any emergency. To further add to the realism, the old Corsair IIs are still fitted with fully operable Allison TF30-8 turbofans


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NAVY

Along with their replacement air group counterparts, VF-124 'Gunfighters' at Miramar, VF-101 operate the largest fleet of Tomcats in the Navy. Up to 20 Tomcats are permanently on the squadron books, the aircraft accruing more flying hours in a shorter period of time than any fleet airframes. Operating the venerable A model, the interim A+ (Plus) and the ultimate Tomcat, the F-14D, VF-101 usually split their assets between their permanent home at Oceana and the fine-weather det at Key West. Originally activated at Cecil Field, Florida, on 1 May 1952 as part of Carrier Air Group 10 (CVG-10), the 'Grim Reapers' flew many types of early generation fleet jet fighters, before commencing the replacement carrier airgroup role with the F4H Phantom II in June 1960. Based at Key West from 1958 until April 1971, the squadron eventually moved back up to Oceana, although an F4 det was maintained in Florida (designated VF-171 Detachment Key West in August 1977). This move better reflected the split that had taken place at Oceana with the arrival of the F-14, the main body of VF-101 being responsible for Tomcat pilots and RIOs after August 1977. All F-4 training was then taken over by VF-171 'Aces' at Oceana. After VF-171 was deactivated in June 1984, the 'Grim Reapers' only used Key West for short detachments over the next five years. However, on 27 June 1989 the 'Reapers' returned in force, activating a permanent VF-101 Det Key West with 10 Tomcats, 16 officers and 195 enlisted personnel

Left Brits abroad! The US Navy and the RAF have for many years operated an extremely successful exchange programme that has seen pilots and navigators regularly cross the Atlantic to fly Tomcats, and naval aviators head east to crew Phantom IIs and Tornado F.3s. Weighed down with kit following a successful training sortie with nugget pilots and RIOs, Sqn Ldr Nick 'Spoons' Anderson, Sqn Ldr Nick 'Cosmo' Seward, Flt Lt Alec Yule and Flt Lt John 'Nutty' Nuttall pose for the camera before heading off to debrief their students. Whilst with the unit, the men all got the chance to get carrier qualified on the Tomcat, Nick Seward, for example, CarQualing aboard the *Saratoga* with fellow Brit, Sqn Ldr Nick Anderson. Although entrusted with turning out proficient pilots and RIOs for fleet units, the exchange crews cannot fly with sea-going squadrons themselves. This is not the case, however, in Britain, where exchange crews play a vital role in fully operational fighter and attack units

Above As well as training fleet units, Key West also hosts the reservists of VF-201 and VF-202 from NAS Dallas, Texas, on occasions. Proudly wearing a map of the Lone Star State on its twin fins, a 'Rangers' F-14A is marshalled out of its parking spot and sent in the direction of the runway. Crewed by an experienced ex-fleet pilot and RIO, this aircraft will give its opponents a solid workout once combat is commenced

Right Touch and go time at Key West as a pair of VF-101 Tomcats crowd the circuit during carrier landing practice. Up to six F-14s will launch and maintain a racetrack pattern around the runway, 'bumping and burning' up to 12 times each in the space of a 45-minute sortie. The gear is usually left locked down whilst the aeroplane churns around the pattern at about 250 knots. The spacing between the aircraft usually sees a Tomcat touching down every 30 to 40 seconds. Alongside the Fresnel Landing Light System is an RDO (Runway Duty Officer) caravan, this little structure accommodating fully-qualified Landing Signals Officers (LSOs) from VF-101, who grade every approach and recovery as if the black top was a pitching carrier deck. Anticipating a rather lengthy wait before they can launch, a pair of VF-45 pilots sit with the canopies of their A-4Es cranked open in an effort to keep cool

Below Whilst his leader indulges in a Space Shuttle-style climb out in full afterburner, the pilot checks his hydraulics once more before releasing the brake and powering off into the heat-haze. This pre-flight check is always performed by Tomcat pilots both on land and at sea, the fully movable tailplanes pivoting up and down, the rudders twitching from side to side, and the roll control spoilers blinking from wing to wing


200

Above Having licked their opponents, the 'Rangers' return to base with a beautifully tight recovery break. The pilot in the lead Tomcat has already commenced wing sweep, the pivot bearings buried within the fuselage 'shoulders' slowly rotating clockwise. The wing can be swept forward to a maximum of 20 degrees, and back to 68 degrees. Control of sweep angle is governed automatically by the Mach sweep programmer, this device altering the wings according to the speed and altitude of the aircraft. When embarked on a carrier the Tomcat's wings can be further overswept to a maximum of 75 degrees to aid stowage on a crowded deck

Left The CAG-ship of VF-202 'Superheats' powers on down the glidescope heading for an imaginary three-wire. As with the fleet units, the reservists have tried to maintain their 'CAG-bird' and CO's Tomcat in glossy squadron colours, this aircraft going one step further with an unpainted glassfibre radome as seen on early F-14s in the mid 1970s. From this angle, both the dorsal airbrake and the empty Sparrow troughs are clearly visible. Whilst at sea, the central fuselage is usually packed with Phoenix missile pallets, and bordered on either side by external fuel tanks. The huge leading-edge slats are fully extended to increase the lift generated by the wings at landing speeds. The drive motor that extends and retracts the slats works through gearboxes and shafts that allow the pilot to change the wing angles whilst the slats are deployed

Having a long and distinguished fighter pedigree that has been bred over the years on classics like the F-8H/J Crusader and F-4N/S Phantom II, VF-201 finally got their hands on the Tomcat in mid-1987, and they haven't looked back since. Along with VF-202, the 'Rangers' provide fighter cover for Reserve Wing 20 (CVWR-20) when the 'part-timers' come together for their biannual carrier cruise. During this det to Key West, VF-201 were immersing themselves in dissimilar air combat with the 'Blackbirds' prior to embarking aboard USS *Dwight D Eisenhower* (CVN-69) for two weeks of blue water ops. Although this drab F-14A is storeless, bar an ACMI pod on the port side and a Sidewinder acquisition round to starboard, the plumbed racks for the external tanks are still in place


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Right Unlike the two Miramar-based reserve units who received very second-hand ex-fleet Tomcats in 1985, the 'Rangers' picked up either brand new aircraft fresh from Grumman's Calverton, New York, facility, or completely reworked and updated airframes. Prominent beneath the radome of this Tomcat is the Northrop AXX-1 Television Sighting Unit (TVSU), a Sanders AN/ALQ-126 radar jammer and a high intensity navigation light being scabbed to its underside. The Northrop system was developed from the Target Identification System Electro-Optical (TISEO), built for the USAF's F-4E fleet. Tested on fleet Tomcats in 1978, the AXX-1 worked superbly, and allowed crews to identify targets at distances of nine miles or more. Fully compatible with the aircraft's potent Hughes AWG-9 radar, the TVSU can be slaved to the system and display pictures of the radar's target on the pilot's vertical display indicator and the RIO's tactical information screen. Rugged enough to cope with both carrier ops and high G loadings, the AXX-1 is a valuable addition to the Tomcat's sensor package

Below Drab in the extreme, 'Ranger 105' basks in the late afternoon sunshine after a hard days' dogfighting. VF-201's fleet consists of 12 F-14As, which are shared by over 50 experienced pilots and RIOs


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112
110

Navigation lights blink into life as the pilot switches on the electrics in his F-14. The 'thumbs up' indicates that all is operating properly and he can now proceed with the engine spool-up checks. Behind the plane captain, another 'Rangers' maintainer carries his high tech 'Mk 1 warning tag receptacle' towards the AIM-9 acquisition round carried on the port shoulder mounting. Once the tag is removed and safely stored, the round will operate just as a live Sidewinder would, giving the appropriate audible growls when locked on to a target during ACM. One other job remains for the busy seaman to complete before brakes off and chocks away – the rear maintenance covers for the engines are still unfastened. From this angle the sheer size of the undercarriage legs can be fully appreciated, these impressive units being built by Bendix to withstand incredible loadings during carrier operations. Typically weighing in at around 60,000 lbs when crossing the ramp, the Tomcat does not benefit from the traditional flare out before landing to soften the stresses placed on the undercarriage. Navy pilots are taught to aim for the three-wire spot both on land and sea, and fly the aeroplane right down onto the deck, the resulting recovery making many an Air Force jock wince. The airframes delivered to the 'Hunters' in 1987 were originally built over a decade before as Block 60/65 aircraft. Flying only a few hours before being placed in long-term storage, these aircraft were found to be surplus to fleet requirements as newer block airframes with increased capabilities came into service. Finally retrieved from storage in early 1986, they were shipped to Calverton where a total rebuild (including rewiring, plumbing and avionics) was undertaken by Grumman to bring the Tomcats up to Block 135 specs

Above Almost ready to practice a traditional controlled 'crash', a pair of VF-202 'Superheats' Tomcats split and prepare to 'go dirty' for landing. Perhaps already dirty enough, the lead pilot has opened the throttles to cut the corner in the racetrack approach, hence the smoking trail emanating from his TF30s. Pulling about 4G in this pattern break, the Tomcat has begun to stream vortices over the outer wing areas

Right Unlike the 'Rangers', VF-202 have managed to retain their full tail markings since receiving a mix of fresh Block 140 F-14As from Calverton, and totally reworked and updated Block 135 airframes. As can be seen here, the stylized Texan flag on the rudders is topped with a VF-202 decal, many of these beginning to peel away due to high-Mach weathering. The badge on aircraft 207 appears to have been stuck on back to front by the paint shop at Dallas! The various sizes and placement of the 'AF' tail codes also differs from Tomcat to Tomcat


04
16
07
06

Electronic warfare

The pattern at Key West is usually chocked full of fleet fighters like the Tomcat and the Hornet, the Fighting Falcon and the Skyhawk. However, if you're lucky, the US Navy's unofficial 'historic flight' may decide that it's time to wheel the 'real' aeroplanes out and gently perform a few 'greasers' just to show the fighter jocks how it should be done. Pumping clouds of 'dirt' out of its twin Pratt & Whitney J57-P-10 turbojets, a veteran TA-3B Skywarrior steadily climbs skyward after rotation. Part of the mixed VAQ-33 'Firebirds' fleet based at Key West, this particular aircraft had only recently been resprayed in tactical greys when this photo was taken. The personnel in the paintshop obviously thought that by updating the scheme the old Skywarrior may seem more at home in the Navy of the 1990s


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NAVY
VAQ-33

Above Looking far more like your typical Skywarrior, another TA-3B tucks its gear away and heads out on a training flight. VAQ-33 have been responsible for tutoring prospective A-3 crews, fresh from flight school, since October 1977, the 'Firebirds' maintaining a small fleet of five specialist trainer-Skywarriors to perform this task. The Navy originally ordered 12 A3D-2Ts, as they were then designated, way back in May 1956 to fulfil the bombardier training role for the large attack fleet of A3Bs then in service. Heavily used over the following decades, some TA-3s were converted into admirals' barges for VIP work, whilst others performed stress and fatigue tests with Vought in 1982–83 when the Navy needed to clear the remaining airframes for continued service past their scheduled retirement date

Left As their designation suggests, VAQ-33 are heavily involved in the world of electronic warfare, supporting both sea and airborne assets on the east coast of the USA. The chief 'electronic aggressor' in the 'Firebirds' fleet is the trusty ERA-3B, a version of the Skywarrior specially modified for the squadron's unique mission. As with the TA-3B, VAQ-33's 'Electric Skywarrior' fleet consists of just five airframes, this particular aircraft being the second youngest ERA-3B on the squadron books having been delivered to the fleet as a photo-recce A3D-2P in April 1960. Packed full of emitters, receivers and jammers, the ERA-3Bs can perform electronic countermeasures (ECM), electronics support measures and defensive electronic countermeasures. To help the aircraft's integral generator cope with the extra demand for power that these systems produced, four external ram air turbines taken from redundant AN/ALQ-99 jamming pods were scabbed on to the forward fuselage of the Skywarrior. Further modifications to the airframe included a new ventral radome, developed by Boeing, to house the AN/ALT-40 transmitting equipment; a fin sensor housing; and an extended tail cone, which contains the AN/ALE-43 chaff dispensing set. Crewed by a pilot, navigator and plane captain in the cockpit, and two ECM evaluators in the pressurized fuselage cabin, the ERA-3B is easily the heaviest version of the Skywarrior to serve the fleet

Compared with their highly energized brothers, the TA-3s at VAQ-33 are positively spartan inside. When originally built to Navy order, the aircraft could accommodate a crew of eight, consisting of a pilot, co-pilot, instructor and five trainees. This particular airframe (BuNo 144856) was in fact the prototype A3D-2T (TA-3B), the aircraft going to the Naval Air Test Center (NATC) at NAS Patuxent River, Maryland, for handling trials soon after delivery to the Navy in July 1959. Although now only training a handful of crews for both VAQ-33 and -34, the TA-3Bs nevertheless still perform the same role for which they were designed three decades ago


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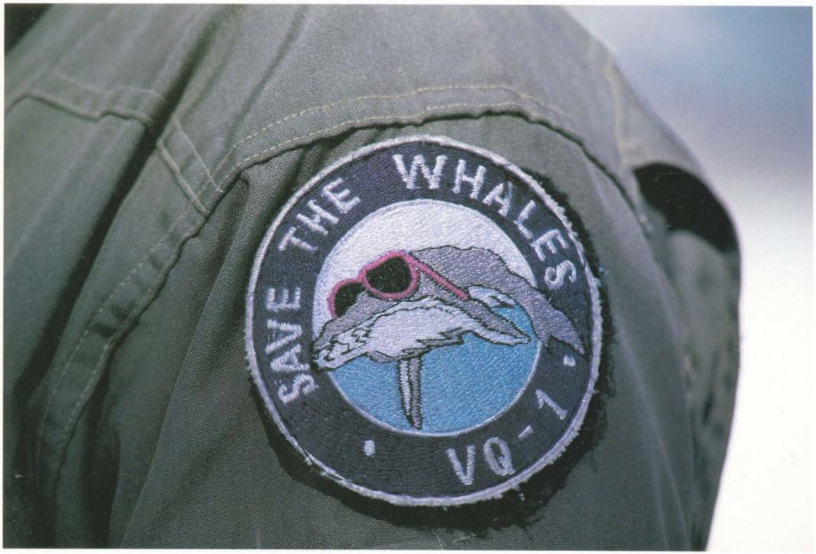
100
NAVY

Above Ready for retirement, these A-3s have put in over 60 years of service between them. The Skywarrior (BuNo 142650) in the background is the only EKA-3B tanker in the 'Firebirds' fleet, this aircraft entering service in December 1958 as the first A3D-2 bomber additionally configured for air-to-air refuelling. Converted into a fully fledged tanker (KA-3B) by the Naval Air Rework Facility (NARF) at Alameda, California, in June 1967, the aircraft was further modified 12 months later with the addition of ECM blisters on the starboard side of the fuselage, resulting in the aircraft's redesignation as an EKA-3B. Allocated initially to Heavy Attack Squadron Ten (VAH-10) 'Vikings' (who were redesignated Tactical Electronic Warfare Squadron (VAQ) 129 on 1 September 1970), the aircraft served with distinction aboard various carriers off the coast of Vietnam up until the cessation of hostilities in 1975. Stored at Davis-Monthan AFB from April 1982 until 1985, this weary veteran has been at VAQ-33 ever since, training Skywarrior pilots in the art of air-to-air refuelling, and helping to support other Navy assets operating out of Key West

Left Floating on an imaginary lake, 142650 gleams in the afternoon light. Although a Vietnam vet, the Skywarrior is maintained in A1 condition by the wiley groundcrew at Key West, many of whom have served on A-3s for over 25 years. Weighing in at over 70,000 lbs, the Skywarrior was easily the largest aircraft ever operated on a regular basis from a carrier deck. From this angle the distinctive streamlined fairing, which contains the electrically-driven A-12B-7 hose reel, can be clearly seen in silhouette between the main gear legs. The EKA-3B has tanks which can carry up to 5282-US gallons of fuel



Above Not even Greenpeace could save the EA-3B 'Whales' from disappearing from California when VQ-1 'World Watchers' deactivated in early 1990. Operators of the A-3 since November 1956, VQ-1 earnt their distinctive nickname by providing Skywarrior dets for various airwings on cruise across the globe

Left The runway at Key West is not overly long, especially when you are flying a thirty-year-old jet packed to the gunnels with electronic equipment and powered by a pair of engines never blessed with rapid throttle response. To aid the pilot in his efforts to stop his 80,000 lbs-plus Douglas 'locomotive', the A-3 is equipped with a 24 feet-in-diameter ring-slot type nylon drag chute housed at the base of the rear fuselage empennage. Dropped on the runway after deployment, the chute is quickly recovered and trucked off to the rigging hut to be thoroughly checked over, and then repacked. The chute, combined with the jet's powerful maingear brakes and barn-door type airbrakes, usually conspire to stop the Skywarrior well before it drops off the end of the black top

Left Comfortably strapped in, a 'Firebirds' navigator runs through his preflight checks with the pilot. In front of him, the spartan instrument panel in his ERA-3B mixes old fifties technology dials with far more modern Bendix-manufactured radar equipment displays, which include a CRT display and keyboard co-ordinates pad. An encyclopaedic array of navigation, direction finding, radar and communications equipment was installed in the ERA-3B's capacious fuselage during rework

Below Helping the ERA-3Bs torture fleet assets electronically are several EA-6A 'Electric' Intruders, this two-man jet having been developed for the Marine Corps from the Navy's all-weather bomber in the early 1960s. Although not quite as old as the Skywarrior force, the EA-6s are nevertheless amongst the oldest Intruders still flying regularly in support of the fleet. Having just returned from a long sortie, this aircraft bristles with 'tools of the trade'. Beneath the starboard wing it carries from left to right an AN/AST-4 passive ECM jammer; an AN/ALQ-99E 'smart' jamming transmitter; and a standard Intruder drop tank. Tucked under the port wing from left to right is another AN/ALQ-99E, and two AN/ALQ-167 Multiple Environment Threat Emitters (METEs), which each contain an AN/ALQ-3 transmitting unit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LCDR S. PARSONS
JET
INTAKE

Above The distinctive bulbous fin-top worn on the EA-6s contains antennas for the old ALQ-55 communications jammer, plus various other electronic warfare devices. Mounted on the spine of this airframe is a 'towel rack' antenna for SIGINT (signals intelligence) and COMINT (communications intelligence) gathering

Left Flown for over 25 years by the Marines, the EA-6A only commenced operations with the Navy after the service had received some very second-hand EA-6As from the Corps in the early 1980s, the 'Firebirds' taking them on strength after VMAQ-2 had received the far more capable EA-6B Prowler at Cherry Point in late 1977. The Navy Reserve also picked up surplus EA-6As at around the same time, VAQ-209 'Star Warriors' and VAQ-309 'Axe Men' providing ECM cover for their respective airwings until trading up to Prowlers in 1989. Now, aside from VAQ-33, only Marine reservists VMAQ-4 'Seahawks', based at Whidley Island, Washington State, still fly the venerable jet


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Armourers at VAQ-33 have to become proficient at handling all manner of unusual underwing stores. Here, they come to grips with AN/an AST-4 jammer, whilst a pair of METEs await their turn for loading. Each missile fin on the METE is actually antenna assembly, and the small L-shaped bulges on the nose of the pod are the transmitting assemblies for the store. In the background, the weapons pylon under which the third armourer is working has the antenna for the ALQ-100 deception ECM system protruding from its leading edge

Above Screaming in low over the Key West perimeter, a visiting VAQ-209 EA-6 beats up the airfield before recovering to the 'Firebirds' ramp. Part of the east coast reserve Air Wing 20, the 'Star Warriors' were in the process of relinquishing their remaining 'Electric' Intruders to VAQ-33 at the time of the author's visit to the Keys. A total of 27 EA-6As were eventually built by Grumman, 12 being based on modified A-6A airframes, whilst the remaining 15 were manufactured as 'Electric' Intruders from the outset. This particular machine was the sixth airframe built in the latter batch of 15

Right Looking suitably pleased with themselves after completing a harrowing cross-country from NAS Pensacola, Lt Anne Kruger (pilot) and Lt Jackie Maher (Naval Flight Officer) pose for the camera. Described by them as the worst flight of their lives, the crew had flown into a thunderstorm in their 'unmanned' EA-7L Corsair II, the aircraft's generator failing after it received a lightning strike. Flying without instruments or radio communications, the crew somehow managed to link up with an A-3 from Key West and recover to base 'stuck' to the Skywarrior's wing tip. The EA-7L variant of the Corsair II is a rare beast in Navy ranks, only six having been modified for the electronic aggressor role from the more standard TA-7C trainer. Chosen for conversion because of a shortage of TA-4 Skyhawks, the Corsair IIs also operate with sister-squadron VAQ-34 on the West Coast, both the 'Firebirds' and the 'Electric Horsemen' performing as the flying units within the Fleet Electronic Warfare Support Group (FEWSG)


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CVWR-20
NAVY
VAW-78
070

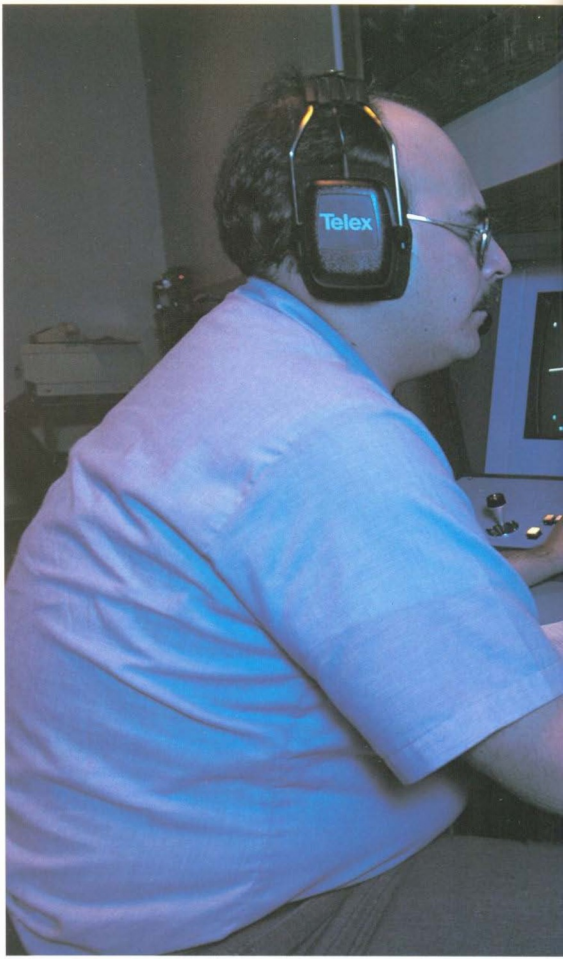

600
0413
NAVY
VAW-78

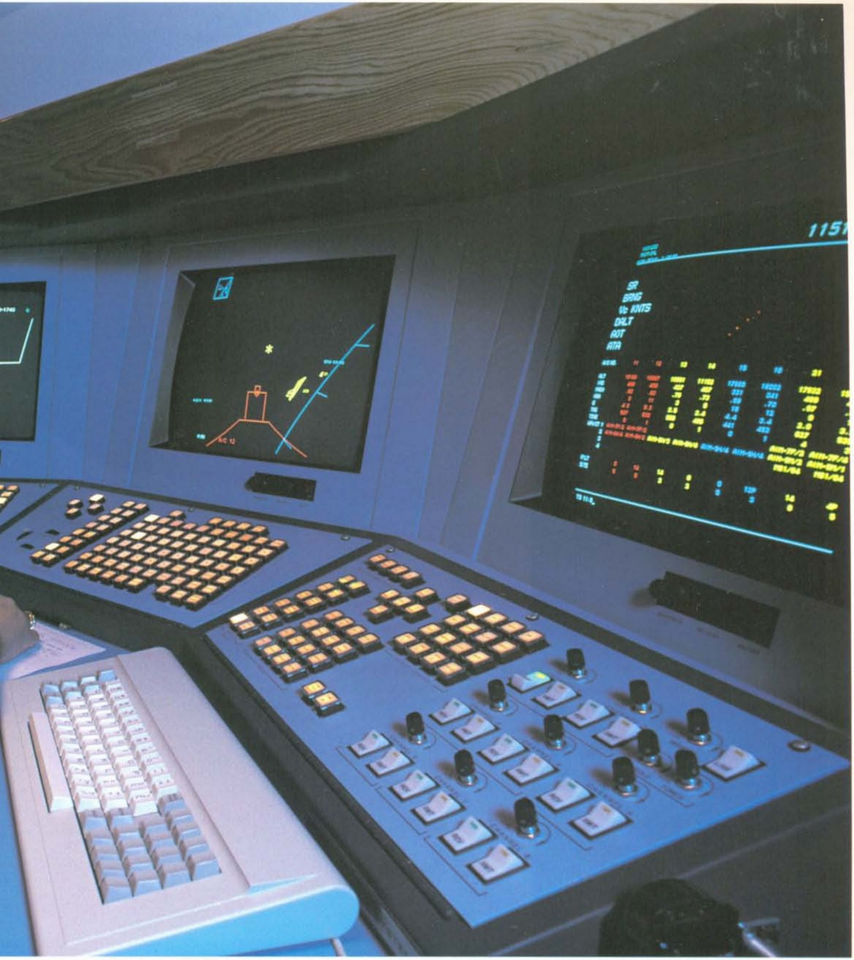
Preceding pages Despatched to Key West from their NAS Norfolk, Virginia, home base in support of VF-201 and -202, the E-2Cs of VAW-78 'Fighting Escargots' provided command-and-control services for the Tomcat crews on each of their sorties with VF-45. As with the Texas-based fighter squadrons, VAW-78 are part of CVWR-20. Having operated the earlier Alpha and Bravo models of the whispering Hawkeye, the 'Escargots' finally aligned themselves with fleet units when they received refurbished early-batch E-2Cs in late 1985

Above The heavy G-stresses placed upon the pylon mounted TACTS pods during aggressive ACM dictates that maintenance has to be carried out on the highly sensitive avionics at regular intervals. To help in restricting the down-time of these vital training tools, civilian contractors from the Cubic Corporation are employed at Key West to work solely on this system

Left A close study of the port tail fin reveals the former owner of this Hawkeye, the 'NJ' coding belonging to the Pacific fleet training unit VAW-110, based at Miramar. The 'Escargots' recently ventured even further south than Key West when they participated in *Exercise Unitas XXXI* in Venezuela. Based at El Libertadore AFB, the E-2s operated with the Venezuelan Navy and Air Force, as well as with fellow US Navy vessels and P-3C Orions. Providing command-and-control for Venezuelan Mirages and F-16s operating against over the horizon and land and sea targets, the 'Escargots' also received plenty of practice in the more traditional role of airborne intercept vectoring against 'enemy' aircraft

Playing the system, a TACTS controller assimilates all the incoming information from suitably equipped aircraft out on the range. On his central screen aircraft 12 is rapidly closing for a deflection shot on a departing foe, the pod having generated a through-the-HUD view of the action out over the Keys. The screen on his left gives an overall impression of the combat, different aircraft being marked out in differing shades. To his right, the tabular breakdown gives fuel states, weapons loads, altitude, speed and direction headings of the various 'players' participating in the sortie





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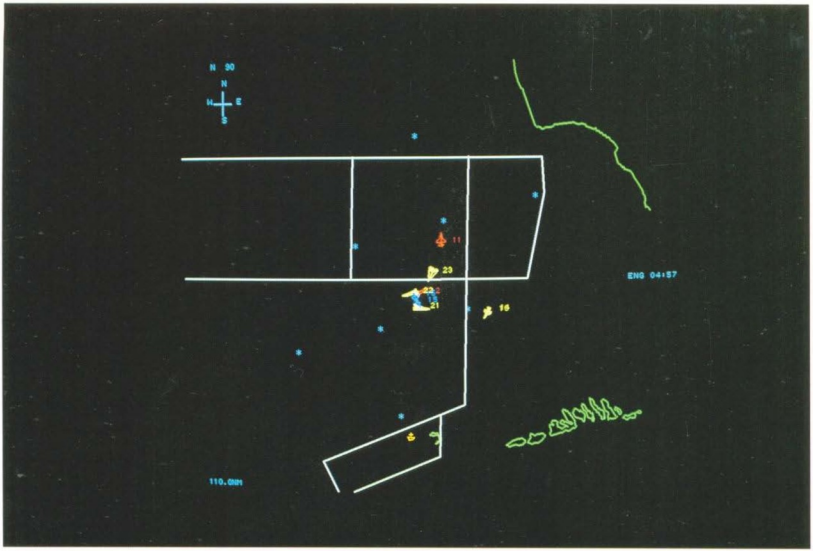
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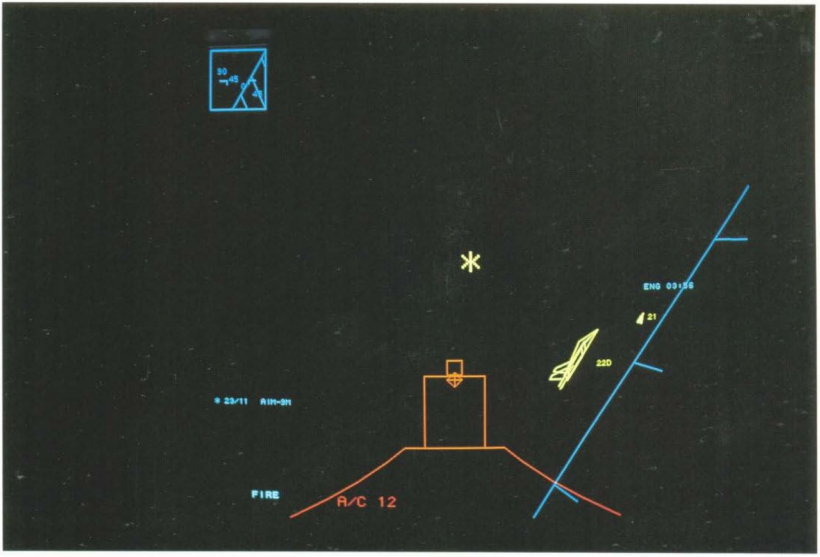


Above and left When it comes to debriefing this whirling dogfight taking place out over the Caribbean, the crews in Tomcats 220 and 221 are going to find it hard disputing the score! The victims of an aggressive flanking manoeuvre by 'Blackbird 12', the pilot and RIO in the closest F-14 were quickly tracked down and 'destroyed' by the F-16N's AIM-9M Sidewinder, loosed off at close range


DANGER
DANGER
RESCUE

Above left One type that very rarely features on the TACTS displays is the distinctive Grumman OV-1D Mohawk, this anonymous US Army example operating from the transient ramp on anti drug smuggling patrols as part of a det from 'A' Company, 15th Military Intelligence Company. Beneath the hinged nose of this aircraft is a KA-60C panoramic camera, which photographs targets over a 180° sweep through the transparent ports fitted into the nose-cone. The small looped fairing immediately below the glass contains the antenna for the instrument landing system (ILS)

Above Fully fuelled, and with all maintenance panels firmly latched, the OV-1 is run up under the watchful gaze of its Army plane captain. Powered by a pair of Lycoming T53-L-701A turboprops, each producing 1400 static horsepower, the OV-1D has a range when equipped with the SLAR pod of over 900 miles. Having now served for over 20 years, the purpose-built Mohawk looks set to remain in use with the Army well past the year 2000

Below left The most obvious feature of the Mohawk is its bolt on canoe fairing securely affixed to the lower fuselage. Packed with the AN/APS-94D side-looking airborne radar (SLAR), the canoe can be quickly removed from the aircraft should the need arise. The huge back-to-back antenna, which fills much of the pod, can scan on one side only, or on both simultaneously. Contacts are processed on photographic film within the fuselage, and also repeated on a cockpit display for the observer to analyse. The main targets for the AN/APS-94D are hidden vehicles, either on the move or stationary. Operating in areas that are usually heavily defended by ECM, the Mohawk observer uses a mix of variable frequencies and pseudo-pulse repetition rates to classify targets with his AN/APS-94D

Visitors

Although not the best looking aeroplane ever designed at Calverton, the porcine C-2A Greyhound is nevertheless the most welcomed arrival on a carrier deck as it signals mail call for the homesick crew. Designed around the basic Hawkeye layout, the C-2's fuselage has a much greater cross-section, which incorporates an upswept aft tail unit complete with cargo door and integral loading ramp. The Hawkeye's distinctive vertical tail surfaces were redesigned for the Greyhound, the dihedral and inwardly-canted fins and rudders of the former being unnecessary because of the lack of a rotodome on the cargo hauler. The nosewheel unit on the C-2 has also been strengthened to compensate for its generally higher gross weights


022

The Greyhound force has never been overly large, the initial Navy order placed in 1964 being for only 19 airframes. Heavily used over the following two decades, the C-2 fleet had been reduced by accidents down to just a dozen aircraft by the early 1980s. Faced with a drastic shortage of COD (Carrier On-Board Delivery) aircraft, the Navy reopened the Greyhound production line by ordering no less than 39 improved C-2s in 1982, this exhaust-smeared machine being one of the new airframes. Initially flown only in the Pacific with VRC-50 because of their paucity in numbers, the massive injection of Greyhounds into the fleet allowed the remaining C-1A Traders to be finally retired and the Grumman freighter introduced to Atlantic and Mediterranean ops. Now serving with VR-24 at Sigonella, Sicily, VRC-30 at North Island, California, and VRC-40 at Norfolk, Virginia, the Greyhound delivers goods to US Navy assets at sea across the globe. Initially, all C-2 crews were trained only by the E-2 replacement air group squadron VAW-110 at Miramar. However, with the establishment of a Greyhound fleet on the East Coast a crew training programme needed to be instigated, AirLant taking a leaf out of AirPac's book by issuing aircraft and instructors to the E-2 training unit VAW-120 at Norfolk. As well as training new crews for fleet service, VAW-120 is also responsible for providing support to other training assets operating out of theatre, VF-101 being one of their major customers. Laden down with spare parts and fresh personnel, a grimy Greyhound nears the end of its long journey down from Norfolk


UNITED STA S NAVY
VAW-120
023


NY

Just as the C-2 was maintaining a regular shuttle service for VF-101, so too was this KC-130T bridging the supply chain for VMFA-321 whilst they were on det to Key West. Manned by reservists, VMGR-452 was lucky enough to have been activated to fly factory-fresh Hercules in both the freighter and tanker roles. Capable of off loading up to 8000 US gallons of fuel and still complete a mission radius of up to 1000 nautical miles, the KC-130T is equipped with the most effective avionics of any tanker currently in service with the Marine Corps

Accelerating down the runway, a more conventionally coloured KC-130T departs the Keys on a tanking sortie. The Marine Corps operate a total of 74 Hercules tankers, the most prolific version, the KC-130F, also being the oldest in frontline service. Four frontline and two reserve squadrons share the various models of Hercules between them, reservists VMGR-452 and -234 operating five KC-130Ts each from Stewart Air National Guard Base, New York, and NAS Glenview, Illinois, respectively


3310

Above Performing the Sabreliner's duties for the Royal Navy's First Sea Lord is an RAF BAe 125 C.3 from No 32 Sqn, based at Northolt just outside of London. The RAF also operates the veteran biz-jet in C.1 and 2 versions with No 32 Sqn, and as the Dominie T.1 navigation trainer, which equips No 6 Flying Training School (PTS) at Finningley, in Yorkshire

Right From ensigns to admirals, Key West's ramp caters for all types of naval aviators, and their chosen machinery. Looking resplendent in its suitably stately gloss white scheme, a Rockwell CT-39E Sabreliner taxies along the ramp towards its allocated parking slot, propelled by its screeching Pratt & Whitney J60-P-3 turbojets. Something of a rarity in naval ranks, only seven CT-39E 'high-priority transports' were ever procured, although over 50 T-39Ds and a handful of CT-39Gs operated in the radar navigation training and tactical support roles respectively


UNITED STATES NAVY

Above Key West also regularly hosts classes of trainee naval aviators striving to attain their golden wings in the portly Rockwell T-2C Buckeye. The standard primary Navy jet trainer for over 30 years, the docile twin-engined Buckeye is used to instruct pilots in all phases of fast jet flying including gunnery, bombing and fighter tactics. The culmination of the training is a solid period of blue water ops aboard a fleet carrier in the Gulf of Mexico. This Buckeye belongs to VT-26 'Tigers', the unit hailing from NAS Beeville (Chase Field), Texas

Right Mission accomplished, the student and his instructor saunter back along the ramp past the 'hot metal' of VF-45 and VF-101. Usually flying out of of their training station landlocked within Texas, the students look forward to 'summer camp' at Key West as it gives them a chance to rub shoulders with frontline types both on the ramp and in the 'O' Club after work. The students often carry out CarQuals aboard passing carriers during their dets to Key West also. As with their fully-fledged brethren, the trainees wear the full survival kit and G-suit when flying the Buckeye


NAVY
NAVY

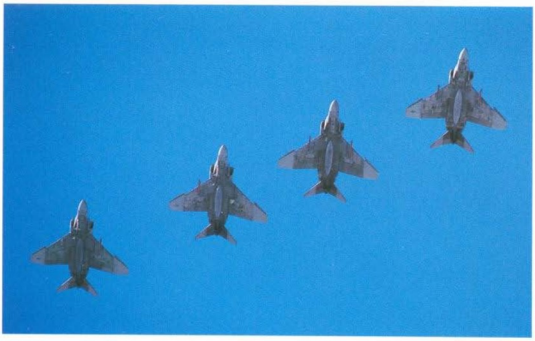
Left The US Navy's primary maritime hunter, the stylish P-3 Orion, is regularly seen in the vicinity of Key West, even though no dedicated patrol squadron is permanently based there. As with all Orions, this aircraft wears no distinguishing unit markings or nose modex. Although totally removing any visible elements of *esprit de corps* the unit may have had, the Orion squadrons still go about their tasks in a totally professional manner. This particular P-3B TACNAVMOD (Tactical Navigation Modernized) belongs to VP-94 'Crawfishers', a reserve unit based at NAS New Orleans, Louisiana. One of eight reserve units assigned to Commander Reserve Patrol Wing Atlantic, the 'Crawfishers' regularly deploy away from home to test their operational readiness

Above With an overall length of 116 ft 10 in, the Orion is somewhat difficult to house when it comes to performing maintenance. Here, the combined AN/ASQ-10 MAD (Magnetic Anomaly Detector) boom and AN/APS-80 radar fairing stand 'outdoors' keeping the tail fin company, whilst inside the hangar the forward facing portion of the AN/APS-80 receives attention from VP-94 maintainers


UNITED STATES ARMY

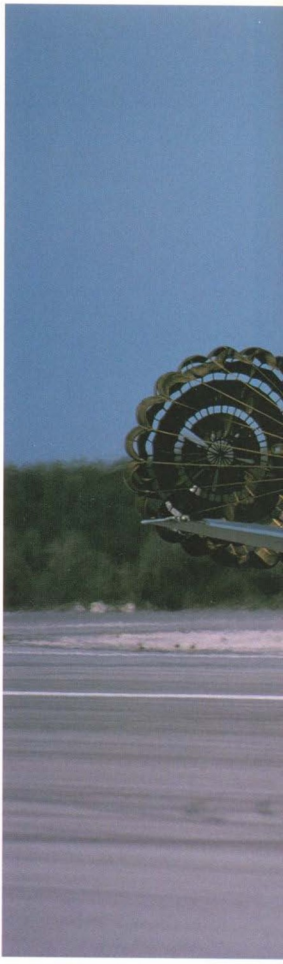
Above Landing lights ablaze, a US Army C-12A turns onto the approach for Key West's runway. Looking resplendent in its glossy green and white VIP scheme, this fast utility transport is one of several C-12s based not too far away at MacDill AFB, supporting the Army's HQ REDCOM facility. Designed around the elegant Beechcraft Super King Air 200, the C-12 has enjoyed widespread success with all branches of the service, the Army having purchased no less than 60 of the Alpha models alone between 1973 and 1976

Left The C-12A is powered by a pair of Pratt & Whitney Canada PT6A-38 turboprops, which gives the aircraft an impressive top speed of 299 mph. Well equipped for long range flights, the C-12 force is heavily utilized by the Army across the globe. Sister-ships to this airframe, for example, serve at Camp Zamaa Army Air Field in Japan, and with the 207th Aviation Company, HQ USAREUR, Heidelberg, Germany



Above Maintaining a reasonably tight formation upon recovery to Key West, a quartet of Marine Corps F-4S Phantom IIs from VMFA-321 'Hells Angels' roar over the air station, filling the locale with the gut churning tremble of the distinctive J79 engine. Having been down to the Keys on ACM dets many times before, the reservists at VMFA-321 know that the only way to 'turn and burn' with VF-45 is to keep the weight down on their Phantom IIs (hence the external stores consist of a single centreline tank and a TACTS pod) and to keep the 'wick' turned up. From this angle, the extended leading-edge slats are clearly visible, this late-stage modification being made to the J-model Phantom II in an effort to increase the F-4's manoeuvrability in tight, low-speed turns

Right With its rear stabilators angled well below the horizontal and the drag chute streaming away behind, F-4S BuNo 153887 rolls down the runway soon after touchdown back at the base. Wearing the 'double nuts' '00' modex below the cockpit and on the nose gear door, this weary warrior is the CO's personal Phantom II. BuNo 153887 was one of the first F-4Js constructed for the Navy, and was also one of the initial airframes upgraded to S-specs in the late 1970s. Having flown the Phantom II since February 1973, the 'Hells Angels' are scheduled to commence conversion onto the F/A-18 Hornet in 1992




VMFA-321
MARINES

Above Military Airlift Command darkens the ramp with its large shadow. Stopping off for JP-5 en route to Central America, a pair of drab C-141B Starlifters from the 60th Military Airlift Wing (MAW) at Travis AFB, California, soak up the sun on a typically fine Key West afternoon

Right Florida virtually overflows with Fighting Falcons, both in frontline USAF service and with the ANG. This silhouetted F-16A belongs to the reserve-manned 159th Fighter Interceptor Squadron (FIS), based at Jacksonville International Airport. Charged with protecting southern airspace from foreign intervention, the guardsmen perform long sorties ranging up and down Florida's coastline, armed with live Sidewinder and Sparrow missiles

Above At times, the Key West transient ramp is like a living museum of types that have become legends in their own operational lifetime. Big in both reputation and physical stature, the outstanding B-52 Stratofortress continues to serve after 30 years of frontline use by Strategic Air Command. This particular 'BUFF' belongs to the 7th Bombardment Wing Heavy, based at Carswell in Texas, the unit having flown various versions of the B-52 since 1957. Now equipped with 39 H-models, the wing performs the role of cruise missile launchers, pairing the B-52 with the Boeing AGM-86B ALCM. Sandwiched between the bomber and the tail unit of the base SH-3D Sea King, a row of sailors perform a dusk FOD plod, checking the ramp for any debris that may have been left after the day's flying

Above right and below Various KC-10 Extenders and KC-135 Stratotankers also call in at Key West on a regular basis, this drab machine belonging to the then 68th Air Refueling Wing based at Seymour Johnson in North Carolina. Since redesignated the 4th Wing as part of the USAF's composite wing programme, the 20-strong Extender fleet still operate in support of Seymour Johnson's large F-15E Strike Eagle force


MAS KEY WEST
ELEVATION
6

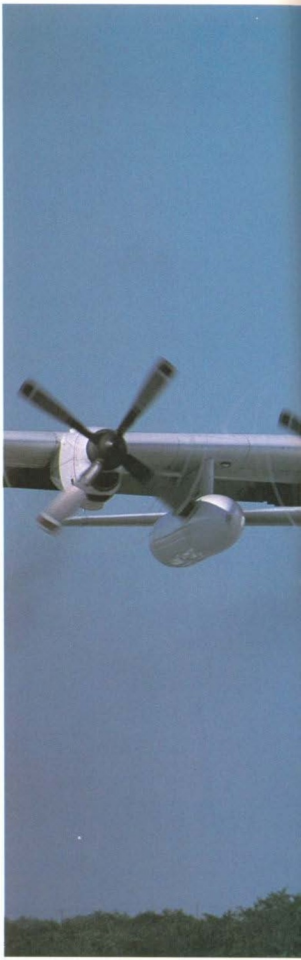

U.S. AIR FORCE
CITY OF COLORADO
5031
NAVY

Although VMFA-321's F-4s are 'mature', they are not as old as these recce-Phantom IIs from the 67th Tactical Reconnaissance Wing (TRW) at Bergstrom AFB, Texas. Well maintained by the wing's groundcrews, the outward appearance of these veterans belies their advancing years. Most RF-4Cs at Bergstrom were built at least 25 years ago, and have seen operational service in Vietnam. These particular airframes wear the distinctive red fin stripe of the 91st Tactical Reconnaissance Squadron (TRS) who, along with the 12th TRS and the 62nd TRTS, make up the 67th TRW. Time is catching up with the recce-Phantom II, at least in frontline USAF service, as the 67th TRW has already begun to deactivate squadrons and disperse their RF-4s to various Air National Guard units across the USA

Above The distinctive Coast Guard scheme looks fantastic when freshly applied, but weathers very quickly in the salty environment in which USCG aircraft work. Beginning to show clear signs of heavy useage around the rear fuselage, this HC-130H (1504) has stopped off at Key West after completing a long Atlantic patrol from its homebase at USCG Air Station Elizabeth City in North Carolina. Coast Guard Hercules pilots usually accrue the most flying time of any USCG airmen, averaging more than 25 hours per month

Right Both the weather and the drug trade dictate that the Coast Guard are always visible in, and around, Key West, although no aircraft are permanently based there. The largest and most impressive type in the USCG fleet is the HC-130H Hercules, no less than 31 aircraft currently appearing on the books. All relatively young in age, the HC-130s fly out of six air stations across the USA conducting search and rescue missions, fishery patrols, anti-drug smuggling sorties and weather flights, amongst other things. All USCG HC-130s feature improved weather tracking displays, Omega inertial navigation systems, plus a sophisticated ground proximity warning system, which, combined with the Omega, makes continued operations over the water at low-level a far less hazardous occupation

Having topped up the tanks and downed that last shrimp cocktail, the crew of 1504 depart Key West to the whining accompaniment of four Allison T56 turboprops. This airframe, and sister-ship 1503, have been specially fitted with SLAR canoes on either side of the fuselage to aid the crews in tracking small aircraft flying at low level. As with all USCG Hercules, this aircraft has the large observation window fitted to the forward fuselage immediately below the 'Guard' crest




OAST GU

Above The promise of fair weather, and Cuban and Soviet submarines in abundance, often lures allied maritime patrol aircraft across 'the pond' to Key West for concentrated periods of exercising with elements of the US Navy. The Orion's equivalent in the RAF is this sinister looking beast, the Nimrod MR.2. Flown by three frontline units, and a single training squadron, the 'Mighty Hunter' has filled the ASW function since the late 1960s. The Nimrod's appearance in Florida skies often coincides with a Royal Navy *WestLant* exercise where an Invincible class carrier, and supporting vessels, cruise on the eastern seaboard operating closely with American and Canadian forces

Right Miami bound, a sleek Dassault-Breguet HU-25C Guardian climbs away from Key West. A total of 41 Guardians are currently in USCG service performing a variety of tasks. The specialized Charlie models (nine in total) are fitted with a Hughes AN/APG-66 radar in the nose, plus a Forward Looking Infrared (FLIR) turret in a belly hatch. Split between Miami and the Coast Guard Aviation Training Center at Mobile, Alabama, the HU-25Cs, with their F-16 radar, have proven vital in the anti-drug smuggling war over the past five years


USCG

At home in Key West

Right As with everything in Florida, Key West is covered in vegetation and usually blessed with a pale blue ceiling for most of the year. The two large 'golf ball' structures in the background house the computer receiving stations for the TACTS system

Below Cruising through the palms at low-level, this veteran F-4N Phantom II has only recently been put on display as a memorial to both the aircraft, and the crews who were trained to fly it, by VF-101's Key West Detachment. Once the Marine Corps finally get around to retiring their F-4Ss from reserve service, this 'stuffed' Phantom II will be the only one of its breed remaining in the Keys


U. S. NAVAL AIR STATION
KEY WEST, FLORIDA
STOP
PASS&ID

Above Although of the same vintage as the F-4, there is no talk of retiring these Sikorsky SH-3D Sea Kings for some time yet. Part of the base Search and Rescue (SAR) flight, the veteran helicopters are kept on standby 24 hours a day in support of the fast jet operations out over the Keys. Predominantly used nowadays for SAR work, the old Deltas still retain their secondary ASW capability, although the majority of the specialized equipment has been deleted to lighten the overall weight of the helicopter, and thus reduce the strain placed on the twin General Electric T58-GE-10 turboshafts

Right Capable of speeds over 50 knots, and armed to the teeth with a rapid firing 76 mm fully automatic gun forward and eight Harpoon surface-to-surface missiles aft, the diminutive *Aquila* packs a punch to be reckoned with. Highly manoeuvrable and difficult to attack, the hydrofoil is the ideal training tool for strike aircraft crews practising their anti-shipping techniques while on det. A total of six SCB 602 type boats are based at Key West with Patrol Hydrofoil Missile Squadron (PHIMRON) Two

Overleaf As the sun sets on yet another perfect day, and the beautiful people sip their cocktails down at Mallory Dock, the crew aboard the fast hydrofoil patrol boat USS *Aquila* (PH4) head out to work with aircraft from Key West during a night surface strike training sortie

Being so close to Cuba, the Duck Key aerostat blimp is constantly airborne providing radar coverage for the Florida coast. One of a string of 'high tech' dirigibles strategically placed along the coastline from Florida to California, the aerostats provide a relatively cheap, but effective, airborne early warning net for the armed forces

At the end of another tiring day in the sun, the men and women of Key West head down to Mallory Dock to relax with a few beers after work

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