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VOLKEL AB READINESS TEST

TEXT: JORIS VAN BOVEN AND ALEX VAN NOIYE | PHOTOS: JORIS VAN BOVEN



Photo by Royal Netherlands Air Force



On Friday, 8 December 2023, a mass take-off was held at Volkel AB with the last Netherlands Royal Air Force F-16 *Fighting Falcons*. There were sixteen F-16s on the flight line, of which 13 aircraft ultimately took off into the air. Two F-16s remained behind on the flight line and one aircraft ultimately did not participate in the flight. This was done to test the readiness and to demonstrate the operational strength.

"It is good to show how much air power we can generate in this transition phase," said the commander of 312 Squadron Lieutenant Colonel Patrick Vreeburg. "It is the last year of the F-16. Furthermore, it is

important to monitor the readiness of these devices. The employability is still very high. Not only for this transition phase, but I have never seen it this good in the last twenty years."

Before take-off, a so-called 'Elephant Walk' was organized, during which 14 F-16s slowly rolled down the entire runway, before 13 aircraft finally took off from Volkel AB.

The aircraft that took part in the Elephant Walk flew a 'standard mission' to training areas above the North Sea and Danish areas. To manage all this, a team effort was required from all 270 men and women who make up the 312 Squadron. The unit has been having

this size since the 313 Squadron and most of the 900 Maintenance Squadron were integrated into the 312 Squadron in 2021. Vreeburg: "That merger has really paid off in terms of the deployability of aircraft".

The very first LockheedMartin (General Dynamics) F-16 *Fighting Falcon* was delivered to the Royal Netherlands Air Force in 1979. The 312 Squadron at Volkel AB will fly the F-16 until approximately September 2024, after which the aircraft will be permanently taken out of service.

These days a very rare sight: 16 F-16 *Fighting Falcons* lined-up on the flight line.









EATC AEROMEDICAL EVACUATION DAY

TEXT: JORIS VAN BOVEN AND ALEX VAN NOIJE | PHOTOS: JORIS VAN BOVEN



On 7 November 2023, the first 'Aeromedical Evacuation' day was organized by the European Air Transport Command (EATC) at the Royal Netherlands Eindhoven AB. 'Aeromedical Evacuation' is the transport of injured people by air to a safer environment.

EATC is a partnership between seven European countries: Belgium, France, the Netherlands,

Germany, Italy, Luxembourg, and Spain.

About 80 experts in the field of medical transport by air gathered at Eindhoven AB. These were experts from the participating ETAC countries, but also from Denmark and the United States. The experts received a detailed introduction to the capabilities and expertise that ETAC can offer in this domain. The Aeromedical Evacuation procedures and challenges

of the participants were then discussed.

The Commander of the EATC, Major General Franck Mollard of the French Air Force, pointed out in his speech that Aeromedical Evacuation is one of the three core tasks of the EATC, in addition to air transport and air-to-air refueling. Aeromedical evacuation is a large jigsaw puzzle in

which different countries have unique resources and capabilities. And all the pieces of the puzzle are put together by EATC to make the right choice for the required help.

Various aircraft and helicopters were positioned on the western platform of Eindhoven AB. All aircraft were equipped for 'Aeromedical Evacuation'.

This Bombardier Challenger 605 ambulance jet is owned by Luxembourg Air Ambulance SA and operates under contract with Luxembourg.



Airplane type	Air Force / Owner	Configurations	Comments
A400M	German AF , LTG 62	6 x PTU, max 4 x ICU, 2 x IMC patients	
A330MRTT	French AF, ERVTS00.031	12 x PTU, 88 x ambulant patients	Standard tanker aircraft that can be converted in 24 hours
KC-130J	Italian AF, 2° Gruppo TM	3 x ATI, 20 x Stretcher N 36	
CL-605	Luxembourg, Luxembourg Air Ambulance SA	2 x PTU, 4 x ambulant (max. 1 x ICU, 1 x IMC, 4 x ambulant)	
A330MRTT	Multinational MRTT Unit	6 x PTU, 16 x Litter, 64 x ambulant patients	Permanently configured in the MEDEVAC version, based in Cologne (DE)
CH-53GS	German Air Force, HSG64	3 x PTU and 8 x Litter (i.e. 3 x ICU, 8 x IMC patients)	Helicopter used in war zones

- PTU – Patient Transport Unit
- ICU – Intensive Care Unit
- IMC – Intermediate Care
- ATI – Air Transportable Isolator (ATI). This system is used specifically by aeromedical isolation teams to initially transport and transfer infected patients safely to larger hospital isolation units.
- Stretcher N 36 – Stretcher for transporting the patient in high biocontainment with dimensions similar to the standards of a stretcher.



The Bombardier Challenger 605 long-haul ambulance jet has a range of up to 7,400 km (3,996 nm). The aircraft's cabin has room for two intensive care patients plus four accompanying persons. The cabin's height allows the medical personnel to care for the patients in an upright position.

Furthermore, an Infectious Disease Module can be installed that offers more space for the patient and the medical team.



EATC and MEDEVAC

A CENTER OF EXPERTISE IN AEROMEDICAL EVACUATION

It is of utmost importance to offer a high standard of medical care in operations and the assurance to bring a patient swiftly home when needed. The aeromedical evacuation (AE) of patients requires in-depth medical expertise combined with proficient knowledge of aviation related factors for the aeromedical transport. This is why EATC integrated a professional team of flight surgeons and flight nurses in the operational division: the Aeromedical Evacuation Control Centre (AECC).

Today AECC is widely recognised as a center of expertise for Aeromedical Evacuation, looking back

at a decade of experience. AECC is also striving for harmonization of concepts, alignment of medical equipment and cross airworthiness certification. This offers increasing possibilities in a multilateral approach for the transportation of patients, and thereby the best use of EATC on a daily basis.

AEROMEDICAL EVACUATION PAR EXCELLENCE.

EATC and AECC strive to offer efficient AE missions. Any decision by AECC is closely matched with the requesting nation's "National Patient Evacuation Coordination Centre". These centers are EATC's single national points of contact, responsible for the medical evacuation of the personnel within the national military systems.

EATC has developed a specific process to execute AE missions. Through this process the AECC team evaluates the medical condition of the patient and chooses the best suited transportation asset from EATC's portfolio. Together with EATC's tasking experts, AECC plans the complete evacuation mission and supervises all the processes, in cooperation with EATC's Mission Control Centre, until the successful completion.

THE AEROMEDICAL EVACUATION PORTFOLIO

EATC's nations transfer the operational authority of their assets to the EATC for air mobility missions. When it comes to AE missions, they also provide AE crew and the adapted AE equipment. This entails that

EATC has access to a large portfolio of strategic and tactical assets to plan and execute AE missions.

The portfolio includes dedicated AE assets ready within hours, such as Luxembourg's contracted civilian assets (2h on alert), German A400M (12h on alert) and MMU's A330 MRTT (24h on alert). Moreover, EATC's nations offer air mobility assets that can also be used for AE missions. For example, Italy provides assets that may be equipped, if needed, with special air transport isolators for the safe transport of contagious patients. Others, for instance the Dutch C-130H, can also operate as "flying intensive care units" and offer a maximum of medical treatment for patients.

Source: EATC

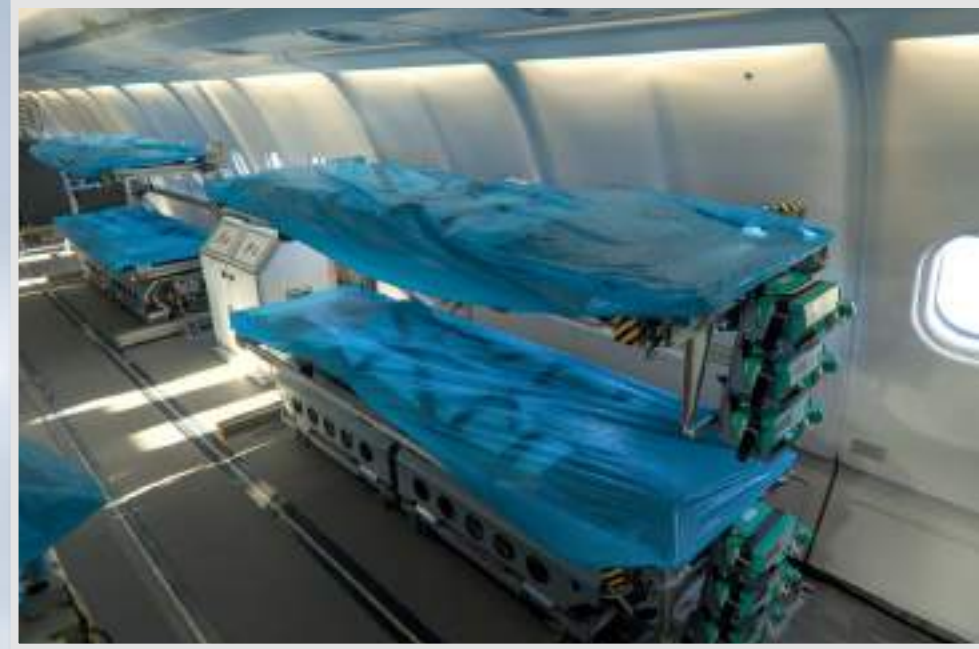


The French MRTT can be configured with the MoRPHEE intensive care module . It provides 'stretcher transportation' for up to 12 patients.

MoRPHEE (Module de Ré-animation pour Patient à Haute Elongation d'Evacuation) system transforms the plane into an ICU for the long-distance transport of critically ill patients. MoRPHEE is based on mission-tailored "plug and play" modules, easily and quickly installable aboard a nondedicated aircraft.

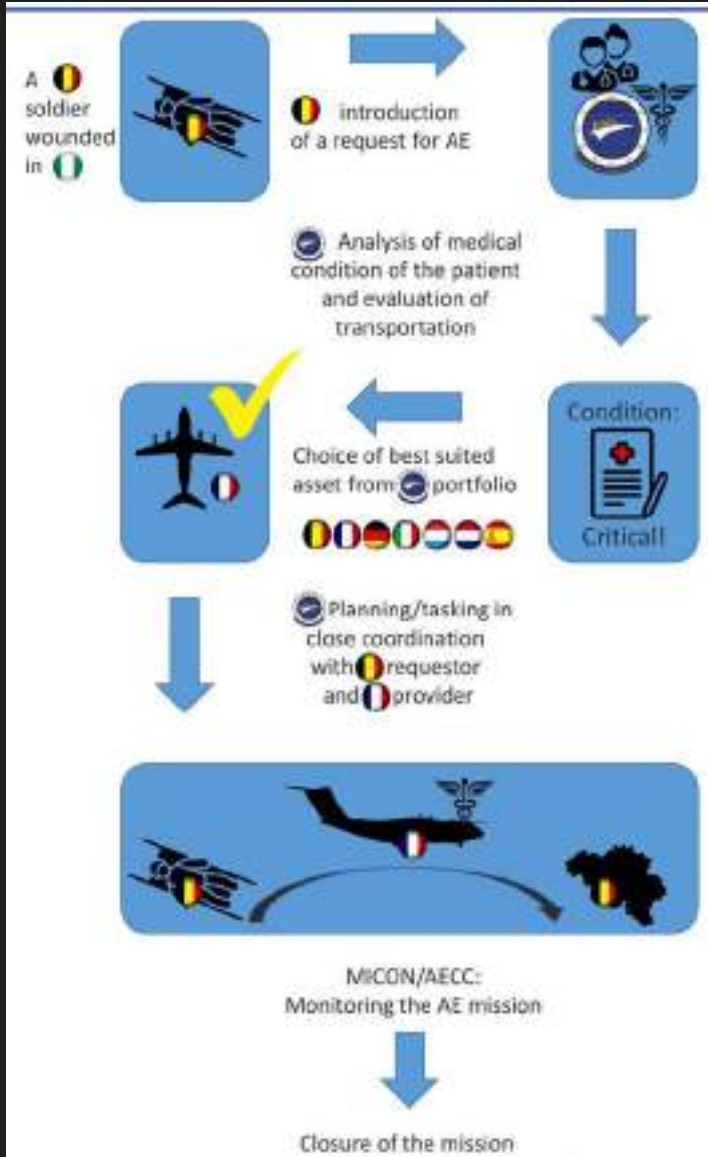
Patient transport units are used for monitoring and ventilating intensive care patients. For every two patients, there is an intensive care team consisting of an anesthesiologist and an anesthetic or intensive care nurse who provide care before, during, and after the flight. The medical team also includes a medical director, a medical crew chief, a medical technician specially trained for such aircraft, and at least four paramedics.





Top left: The Patient Transport Unit (PTU) has everything required for the treatment of an intensive care patient such as monitoring of vital data, continuous and controlled application of drugs, and artificial respiration involving the application of oxygen.

Top middle and right: Litters for the transport of medium care patients.



EATC is a partnership of seven European countries: Belgium, France, the Netherlands, Germany, Italy, Luxembourg and Spain. These countries combine and optimize air transport in Europe. Where EATC acts as a broker between cargo that needs to be transported and transport aircraft that still have space on board.

With the help of ETAC, the participating countries try to use air capacity as efficiently as possible.

For example, that

- the A330 MRTT (MMU unit) carries out an air-to-air refueling mission for Spanish fighter jets on behalf of the Netherlands
- a French C130J performs a parachute drop mission for Germany
- while a Belgian helicopter is transported by a Spanish A400M
- a Luxembourgish Learjet performs an aeromedical evacuation for an Italian soldier injured in a crisis area

- an Italian C27J transporting French freight
- a Belgian A400M transports Dutch soldiers
- a German A400M performs an aeromedical evacuation mission off Luxembourg.

EATC provides support to participating countries in three areas.

- Air transport
- Air-air refueling
- Aeromedical Evacuation

The headquarters of EATC is based at Eindhoven air base.

The participating countries use the ATARES system for settlement. The "Air Transport & Air-to-Air Refueling and other Exchanges of Services" (ATARES) is a cashless exchange system for air transportation.

Several European and NATO countries are part of the multinational ATARES agreement.

The exchange of services is based on the "Equivalent Flying Hour" (EFH): this reference is the cost of one (1) C-130 flight hour. All other aircraft types offered under the ATARES scheme are calculated based on this C-130 reference.

This arrangement facilitates mutual support through the exchange of services and is the currency used by the EATC Member States. This cashless service allows countries to save on outsourcing costs and optimize aircraft utilization (less empty space). It can also provide countries with additional training opportunities.

ATARES is not based on purely bilateral reciprocity, but must be seen in the global multinational framework.



Above left: A330 MRTT, registered to the Royal Netherlands Air Force, assigned to the Multinational MRTT Unit (MMU).

Above: Inside the MedEvac configured A330 MRTT.



This Air Transportable Isolator (ATI) system is used specifically by aeromedical isolation teams to initially transport and transfer infected patients safely to larger hospital isolation units. The envelope holds a stretcher and therapeutic equipment which allows medics to care for the patient throughout the transportation phase of their treatment.



The CH-53GS is configured with medical equipment to make it possible to transport injured persons from unsafe areas under qualified medical care to the nearest safe medical treatment location.



For MedEvac flights the A400M's "cargo compartment will be adapted and equipped in such a way that intensive medical care can be provided for up to six people.(...)

The mobile intensive care modules raise medical standards in the aircraft to the same level of intensive care units found in hospitals, containing nearly all the supplies that are typically required to provide immediate care to patients. In addition, large quantities of equipment and medication are stored in supply boxes stowed in the cargo compartment. (...)

The medical equipment that must be retrofitted into the aircraft comprises 2.8 tons of material. The drawers of the mobile intensive care modules are filled with medical instrumentation and medication, and a further 18 transport boxes will be added to this. (...)

It takes three to four people about four hours to retrofit the aircraft with all the required equipment, after which time the A400M is mission ready. (...)

During medevac flights, the minimum crew comprises a medical director, whose responsibilities are similar to those

of a chief physician in a hospital; the director's 'right and left hand' the medical crew chief, who is responsible for organisational matters, including food and accommodation for the crew; and the medical equipment technician, another key crew member who checks the function of all the equipment before the flight and is also responsible for monitoring it during the flight. (...)

There is also an anaesthetist and an anaesthesia nurse on board who permanently care for the patients' conditions and monitor their state of anesthesia. The final members

that make up the minimum crew are two paramedics and independent medics who treat emergency patients autonomously and assist the physicians in performing their tasks."

Source: www.airmedrescue.com, German Air Force A400M modification by Mandy Langfield

WITH CVW-8 ON BOARD OF CVN 78 USS GERALD R. FORD

TEXT: JORIS VAN BOVEN AND ALEX VAN NOIJE | PHOTOS: JORIS VAN BOVEN UNLESS STATED



The USS Gerald R. Ford is the aircraft carrier of the United States Navy with number 78 and the nickname is WARSHIP78, which can be found on social media as #WARSHIP78 or @WARSHIP_78.

As all U.S. Navy carriers have their own callsign, the USS Ford uses the callsign 'WOLVERINE'.

The motto of the ship is "Integrity at the Helm", which means "taking care of, and looking out for, our shipmates." The USS Gerald R. Ford adopted the 38th President's name along with the words of the Ford Foundation's motto, "Integrity at the Helm".

After the delivery to the U.S. Navy in 2017, the USS Ford suffered for some serious 'teething problems' with the armament elevators and the electric launching system (Electromagnetic Aircraft Launch System, EMALS). Using state-of-the-art new technologies meant that only rigorous testing in real-life environments would prove that the proposed solution could work and could be repaired.

This caused some delays until the ship was fully operational in September 2022. In order to weed-out the last details, a small shake-down cruise was held in October and November 2022, which brought the USS Ford to the Atlantic Ocean and European seas.

The first full-blown maiden cruise of the USS Ford started in May 2023 followed by a transfer to the U.S. Navy 6th Fleet with headquarters in Napoli, Italy. The 6th Fleet has an Area of Responsibility (AOR) of the European and African continents, servicing the U.S. European Command (USEUCOM) and U.S. Africa Command (USAFRICOM).

During the maiden cruise, the ports of Oslo (Norway) and Split (Croatia) were visited for some Rest and Recreation of the crew onboard.

USS Gerald R. Ford (CVN 78) is the U.S. Navy's newest aircraft carrier. As the first-in-class ship for the next generation of aircraft carriers, Ford introduces 23 technologies to deliver greater lethality, survivability and joint interoperability while reducing operating and maintenance costs. CVN 78 is the first new carrier designed in over 40 years, and it was designed to have the flexibility to operate with future generations of aircraft. The ship's systems and configuration are optimized to maximize the sortie generation rate (SGR) of embarked strike aircraft, resulting in a 33 percent increase in SGR over the Nimitz-class.

- Keel Laid: November 2009
- Christening: November 9, 2013
- Propulsion: Two nuclear reactors, four shafts
- Length: 1,092 feet (332 meters)
- Beam: 134 feet
- Flight Deck Width: 256 feet (78 meters)



Photo U.S. Navy

- Displacement: Approximately 100,000 long tons full load (101,604 metric tons)
- Speed: 30+ knots (34.5+ miles per hour, 55+ kilometers/hour)
- Crew: 4,539 (ship, air wing and staff); 2,700 (ship's company)
- Armament: Evolved Sea Sparrow Missile, Rolling Airframe Missile, Close-in Weapons System (CIWS)
- Aircraft: 75+

Flight Deck

The USS Ford has the largest and most advanced flight deck in the fleet.

- EMALS – Upgraded from steam catapults, EMALS on Ford-class uses stored kinetic energy and solid-state electrical power conversion to launch aircraft, permitting a high degree of computer control, monitoring and automation. EMALS improves takeoff speed while reducing wear on aircraft. Reduces cost for maintenance and support. Reduces personnel required to operate by one third. Allows for quieter and cooler work and living spaces for Sailors. Can launch aircraft every 30 seconds (60 seconds on average to include reload time).
- AAG – Recovers a greater range of aircraft and limits the impact load on aircraft.
- Electromechanical Actuators (EMA) – For jet blast deflectors and barricade stanchions.
- Length – 1,092 feet, 332 meters (more than 3.5 football fields)
- Width – 256 feet, 78 meters.
- Island Placement – 140 feet, 42 meters further aft from Nimitz-class carriers, increasing efficacy, creating more "real estate" on the flight deck to launch and recover aircraft.
- In-Deck Fueling – Ford-class has the ability to refuel jets from the center of the flight deck, improving the ship's ability to reload and relaunch aircraft.
- Advanced Weapons Elevators (AWE) – A W E moves more ordnance faster and requires less maintenance and personnel to operate. Ford has 11 weapons elevators with four upper stage elevators and seven lower stages, enhancing the ship's ability to move 24,000 pounds, 10886 kg per load at a speed greater than Nimitz-class carriers.
- Dual Band Radar (DBR) – DBR is the primary radar for contacting aircraft. Its two functions are multifunction radar and volume search radar, which together provides a complete 360-degree air picture around the ship.

Carrier Air Wing EIGHT

A carrier air wing (the U.S. Navy acronym is 'CVW') is an operational naval aviation organization composed of several aircraft squadrons and detachments of various types of fixed-wing and rotary-wing aircraft. Organized, equipped and trained to conduct modern U.S. Navy carrier air operations while embarked aboard the aircraft carriers. The various squadrons in an air wing have different but complementary, and sometimes overlapping, missions and provide most of the striking power and electronic warfare capabilities of a Carrier Strike Group (CSG). Today's air wing composition is designed to allow for broad striking power hundreds of miles from the carrier's position, while providing defense in depth of the strike group through early warning and detection of airborne, surface and subsurface targets. The Carrier Air Wing onboard USS Gerald R. Ford is Carrier Air Wing Eight (CVW-8). The wing is normally based at Naval Air Station Oceana, Virginia. In the U.S. Navy every CVW has its own letter code which is visible on the aircraft. The letter code is built up from two letters. The first letter is always the letter "A" or "N". The "A" stands here for assignment to the Atlantic Fleet and the "N" for assignment to the Pacific Fleet. The second letter in the letter code will identify the CVW. For CVW-8, the second letter is the letter "J" and therefore, CVW-8 has the letter code "AJ".

CVW-8 is composed of a total of four fighter strike squadrons which are designated in the U.S. Navy as VFA (Vessel, Fighter, Attack) squadrons. All squadrons onboard of the USS Gerald R. Ford are equipped with the Boeing F/A-18E/F *Super Hornet*. CVW-8 does not have F-35C *Lightning II* aircraft in its inventory. The first three squadrons are all equipped with the F/A-18E. These units are all assigned in the role of air interdiction, close air support and reconnaissance. and The first unit is VFA-31 and is one of the ex-F-14 *Tomcat* units aboard of the USS Ford. This unit is recognizable on the emblem of 'Felix the cat' on its tail. The famous nickname of this squadron is *Tomcatters*. The second VFA of CVW-8 is VFA-37 also known as the *Ragin' Bulls*. This unit has a badge with a bull on the tails of the *Hornets*. VFA-37 flew in the past with the A-7 *Corsair II* and the F/A-18C *Hornet*. Finally, the third unit flying the *Hornet* is VFA-87 which are known as the *Golden Warriors*. This unit is recognizable on the red badge with a golden warrior on a horse inside crest. The unit flew just like VFA-37 in the past with aircraft like the A-7 *Corsair II* and the F/A-18A/C *Hornet*. The fourth unit of the VFA

squadron aboard the USS Ford, is VFA-213. Compared to the other three units, this one is equipped with the Boeing F/A-18F *Super Hornet*. There is one big difference between the F/A-18E and F variants. The most notable is the presence of the second seat for a weapons systems operator or second pilot. The F/A-18F is used for both training and high-workload missions where the second crewmember can help to split the workload during a mission. The F/A-18F version replaced the F-14 *Tomcat* and performs on top of the task which are assigned to the F/A-18E also air intercept, Combat Air Patrols (CAP) and tanker missions. VFA-213 is like VFA-31 an ex-F-14 *Tomcat* squadron. The unit is known as the *Blacklions*. The insignia of the unit consists of a black lion in a blue Navy crest.

Airborne Command & Control Squadron 124 (VAW-124) is known as the *Bear Aces* and is the U.S. Navy airborne early warning and control squadron at the USS Gerald R. Ford. VAW-124 is based at Naval Air Station Norfolk, Virginia. The unit flies the Northrop Grumman E-2D *Advanced Hawkeye*, with the refueling probe mounted on the nose of the aircraft. The unit is nicknamed *Bullseye Hummers* and has the bullseye clearly visible in the squadron insignia. The unit operates during an average carrier cruise with four to five aircraft onboard the USS Ford. For electronic warfare CVW-8 has a dedicated unit to this. The electronic warfare unit onboard the USS Ford is Electromagnetic Attack Squadron (VAQ) 142 (VAQ-142). The unit is equipped with the EA-18G *Growler*. This aircraft is derived from the F/A-18F and is fully dedicated to the electronic warfare role. The Nickname is this unit is *Gray Wolves*. The unit has a total of five aircraft available. In the past VAQ-142 was equipped with the EA-6B *Prowler* for the same task. Helicopter Sea Combat Squadron 9 (HSC-9) *Tridents* is a U.S. Navy helicopter squadron based at Naval Air Station Norfolk, Norfolk, Virginia (United States). The squadron is equipped with the Sikorsky MH-60S *Sea Hawk*. The main tasks of this unit are Anti-Surface Warfare (ASUW), Combat Search and Rescue CSAR, Search and Rescue (SAR), Special Operations (SpecOps) and Vertical Replenishment (VERTREP). The second helicopter squadron onboard USS Ford is Helicopter Maritime Strike Squadron 70 (HSM-70) *Spartans*. This unit is a U.S. Navy helicopter squadron based at NAS Jacksonville, Jacksonville, Florida, United States. The squadron is equipped with the Sikorsky MH-60R *Sea Hawk*. This unit is tasked with



VFA-31 *Tomcatters* (top) and VFA-87 *Golden Warriors* (bottom) 'CAG birds'.

the anti-submarine role. The helicopters of this unit are recognizable on the radar dome at the bottom of the helicopter. In the past this unit was equipped with the S-3 *Viking*. The final squadron which belongs to CVW-8 is Fleet Logistics Support Squadron 40 (VRC-40), also known as the *Rawhides*. This unit operates the Grumman C-2 *Greyhound* in the logistics role. The C-2 is currently the only transport plane available to land on a carrier like the USS Ford. The type will be replaced soon by a specific version of the V-22 *Osprey* for the logistics task.



Squadron name	Squadron Designation	Nickname	Aircraft	Code
Helicopter Sea Combat Squadron 9	HSC-9	Tridents	MH-60S Seahawk	AJ-6xx
Helicopter Maritime Strike Squadron 70	HSM-70	Spartans	MH-60R Seahawk	AJ-7xx
Electronic Attack Squadron 142	VAQ-142	Gray Wolves	EA-18G Growler	AJ-xx
Carrier Airborne Early Warning Squadron 124	VAW-124	Bear Aces	E-2D Advanced Hawkeye (with refueling probe)	AJ-6xx
Strike Fighter Squadron 31	VFA-31	Tomcatters	F/A-18E Super Hornet	AJ-3xx
Strike Fighter Squadron 37	VFA-37	Ragin' Bulls	F/A-18E Super Hornet	AJ-1xx
Strike Fighter Squadron 87	VFA-87	Golden Warriors	F/A-18E Super Hornet	AJ-4xx
Strike Fighter Squadron 213	VFA-213	Black Lions	F/A-18F Super Hornet	AJ-2xx
Fleet Logistics Support Squadron 40 Det. 2	VRC-40	Rawhides	C-2A Greyhound	

Squadrons of Carrier Air Wing EIGHT (CVW 8)



The flight deck is larger than the USS Nimitz-class decks, giving more opportunities to locate helicopters and aircraft. On the Nimitz-class carriers, the helicopters, the C-2s, and the E-2s are normally parked before or around the island. On the USS Ford these are parked on other locations on the flight deck.



Maintenance personnel are working on the flight deck and below the flight deck – in the 'hangar deck' – around the clock to keep the aircraft "fit for flight".



The crew of USS Langley (CV 1), the U.S. Navy's first aircraft carrier, created a host of innovations, including the use of various colored jerseys for the flight deck teams. Their initiative in the early 1920s established a lasting system. In today's U.S. Navy, sailors still use color-coded jerseys to ensure order and safety are maintained on the flight deck.

BLUE jersey	PURPLE jersey	RED jersey	BROWN jersey	WHITE jersey
- Plane handlers - Aircraft elevator operators - Tractor drivers - Phone talkers	Aviation fuels	- Ordnancemen - Crash and salvage crews - Explosive ordnance disposal	Air Wing plane captains	- Quality control - Landing signal officers - Air transfer officers - Liquid oxygen crew - Safety - Medical administrative personnel
Blue shirts are the most predominant crew on the flight deck. They operate motorized gear such as tractors and forklifts, chock and chain aircraft to the flight deck, and operate aircraft elevators.	Affectionately referred to as "Grapes," or "fuelies," purple shirts refuel all aircraft and monitor all fuel on-board.	Ordnancemen load aircraft with all bombs, missiles, mines and ammunition. They also make up the crash and salvage teams responsible for aircraft fire-fighting, rescue, and salvage operations.	Responsible for the safety and integrity of aircraft, including the pre- and post-flight preparation, Plane Captains wear brown shirts. Also known as "brake riders," they man the cockpit during repositioning on the flight deck and hangar deck.	White shirts consist of safety and medical personnel, catapult final checkers and catapult and arresting gear quality assurance inspectors, and administrative personnel.



Main image: VFA-87's F-18E *Super Hornet* 'CAG bird' is taxiing towards one of the two waist catapults (#3 and #4) while an F-18E *Super Hornet* of VFA-31 is being prepared for launch with catapult #4.

Inset left: Pilots on their way to their aircraft.

Inset right: F-18F *Super Hornet* of VFA-213 *Black Lions* on the way to the waist catapults.



F/A-18Fs of VFA-213 (main image and left inset) and an F/A-18E of VFA-37 (inset right) heading to the right waist catapult (#3).



YELLOW jersey

- Aircraft directors
- Catapult and arresting gear officers
- Air Boss
- Mini-Boss

Aircraft directors are known as yellow shirts and responsible for the safe movement of aircraft on the flight deck and in the hangar bay.

The aircraft director signals the pilot of this F/A-18E to follow his directions.



GREEN jersey

- Catapult and arresting gear personnel
- Air Wing maintenance
- Ground support equipment
- Mass communication specialists
- Helicopter landing signals enlisted sailors

Mostly maintenance personnel, green shirts operate and maintain all aircraft launch and recovery equipment and perform all support equipment and aircraft-related maintenance.



Catapult hook up of an aircraft is accomplished by placing the aircraft launch bar, which is attached to the front of the aircraft's nose landing gear, into the catapult shuttle (which is attached to the catapult gear below the flight deck). The nose gear of the airplane is held back by a holdback bar, which is behind the nose gear. This is a device used to hold the plane back when the shuttle is under tension and the plane's engines are into full mil-power or afterburner. The holdback bar has a bolt designed to break at a specific amount of tension for that type of aircraft. When the catapult fires, the strength is exceeded, the bolt breaks and the aircraft is "shot" into the air.

Above: The plane handler is waiting for the catapult shuttle, while the holdback bar is already in place.

Top row: The launchbar is being placed into the catapult shuttle.





The catapult shuttle accelerates an F/A-18 to 150 - 160 kts within about three seconds.



No steam. All previous U.S. Navy aircraft carriers used steam catapults to launch their aircraft, resulting in clouds of steam crossing the deck during these launches. With the electric launch system (EMALS), there is no more steam on the deck.





An E/A-18G Growler of the Gray Wolves of Electronic Attack Squadron (VAQ) 142, launches from the flight deck of USS Gerald R. Ford. Photo U.S. Navy





The carrier has three arresting cables installed and the pilots aim to catch the middle one with the tailhook. The arresting cable decelerates the aircraft from about 140 kts to 0 kts in only 2 seconds over a distance of less than 300 ft.



There are only two arresting cables in use, with one spare arresting installation. On most Nimitz-class carriers, there are four wires across the deck (pilots are aiming for the third wire during landing). The last carrier of the Nimitz-class, the USS Bush, only had three arresting cables across the deck.







Top row: MH-60S SeHawk of Helicopter Sea Combat Squadron 9 (HSC-9) *Tridents*.
 Bottom left: E-2D Hawkeye of Carrier Airborne Early Warning Squadron 124 (VAW-124) *Bear Aces*.
 Bottom right: C-2A Greyhound of Fleet Logistics Support Squadron 40 Det. 2 (VRC-40) *Rawhides*.





A C-2A *Greyhound*, attached to the *Rawhides* of VRC-40, taxis to one of the two waist catapults. Photo U.S. Navy



E-2D Hawkeye of VAW-124 taxis towards a catapult.



NATO ships train alongside world's largest warship, the USS Gerald R. Ford, in Mediterranean Sea

Central Mediterranean Sea – A NATO task group engaged in a series of dynamic maritime training exercises with the U.S. Navy's most advanced warship during Exercise Sage Wolverine in the central Mediterranean Sea, 2-11 August 23.

The exercise was the perfect opportunity for Standing NATO Maritime Group 2 (SNMG2) and the U.S. Navy's Gerald R. Ford Carrier Strike Group to hone their advanced warfighting skills and interoperability. Reaffirming their shared commitment to collective defense and security in the region, several NATO nations contributed forces to the exercise, including Greece, Italy, Türkiye, the United Kingdom and the United States.

NATO's greatest strengths are its warfighting competence and interoperability. However, these do not just occur automatically. They require constant, dedicated hard work and exercises of this nature to endlessly practice and refine a myriad of common tactics, techniques and procedures, and thus maintain readiness

Three of SNMG2's ships participated: Turkish frigate

TCG Gokceada (F-494), Hellenic Navy frigate HS Elli (F450), and British Royal Navy destroyer HMS Duncan (D37). The ships were joined by an Italian submarine, a U.S. cruiser and a destroyer, Hellenic Air Force F-16 jets, U.S. maritime patrol aircraft and a variety of maritime helicopters. At the heart of the exercise was the world's largest and newest aircraft carrier, USS Gerald R. Ford, with its air wing of F/A-18 jets and airborne early warning aircraft. She demonstrated her formidable capability by launching up to 20 aircraft at a time at the height of the exercise.

All ships and aircraft went through rigorous testing via a diverse range of complex, multilayered tactical scenarios, proving the two different NATO task groups could operate seamlessly together. These included air defense, long-range maritime offensive strike, anti-submarine warfare, electronic warfare, communications, replenishment at sea and medical response scenarios.

Commander SNMG2, Royal Navy Commodore Paul Stroude, said, "NATO's greatest strengths are its warfighting competence and interoperability.

However, these do not just occur automatically. They require constant, dedicated hard work and exercises of this nature to endlessly practice and refine a myriad of common tactics, techniques and procedures, and thus maintain readiness".

"Thanks to Exercise Sage Wolverine," he added, "and the superb co-operation with the Gerald R. Ford Carrier Strike Group, we remain very well placed to perform our core mission of reassurance, deterrence and, if necessary, the defense of NATO."

SNMG2 is one of four Standing Naval Forces that operate under NATO Allied Maritime Command,

headquartered in Northwood, United Kingdom. SNMG2 is a multinational integrated task group that projects a constant and visible reminder of the Alliance's solidarity and cohesion afloat. This continuous maritime capability performs a wide range of tasks, including exercises and real-world operations in periods of crisis and conflict.

Story by SNMG2 and Public Affairs Office at MARCOM



The world's largest aircraft carrier USS Gerald R. Ford (CVN 78) and the Turkish frigate TCG Tokceada (F494) steam in formation in the Mediterranean Sea, August 2023. Photos U.S. Navy

Interview with CAPT Rick Burgess, the CO of the USS Gerald R. Ford

Q: What are the new capabilities of this new FORD carrier class and what the new FORD class will bring to U.S. naval aviation power?

A: As the Navy's next generation aircraft carrier, Gerald R. Ford is defining the future of naval aviation during the present era of strategic competition where we can no longer assume that geography provides the protection and stand-off range it once did. Ford-class aircraft carriers upgrade Nimitz-class legacy systems to take advantage of automation and improvements to system design to reduce maintenance and improve warfighting effectiveness. Because of the

technologies on Gerald R. Ford, the crew can load and launch aircraft faster than ever before. With its electromagnetic aircraft launch system (EMALS) and advanced arresting gear (AAG), Gerald R. Ford is designed to offer an increased sortie generation rate over the Nimitz-class. Gerald R. Ford's in-deck refueling and island placement also opens up more "real estate" on the flight deck to move, stage and refuel aircraft. These technologies foster the interoperability and high-end skill sets required by today's strategic realities.

Q: How does the USS Ford compare to the Nimitz-class carriers?

A: USS Gerald R. Ford (CVN 78) is the U.S. Navy's newest aircraft carrier, and is the flagship of the Gerald R. Ford Carrier Strike Group. As the first-in-class ship for the next generation of aircraft carriers, Ford introduces 23 technologies to deliver greater lethality, survivability and joint interoperability while reducing operating and maintenance costs. The capital



ship CVN 78 is the first new carrier designed in over 40 years, and it was designed to have the flexibility to operate with future generations of aircraft.

New technologies introduced to Gerald R. Ford, compared to Nimitz-class, include electromagnetic aircraft launch system (EMALS), advanced arresting gear (AAG), advanced weapons elevators (AWE), plasma arc waste destruction system (PAWDS), dual band radar (DBR), and in-deck aircraft refueling stations.

Gerald R. Ford is the most adaptable and lethal combat platform in the world. Ford-class carriers are designed to generate a higher sortie rate with a 20 percent smaller crew than a Nimitz-class carrier. This translates into savings of approximately \$4 billion per ship in life-cycle operations and support costs, compared to the earlier Nimitz class.

Q: The missions the USS Ford is doing in this first big deployment (like BALTOPS, a CVW-8 detachment



Captain Richard G. Burgess



participating in AirDefender23 in Germany, Neptune Strike, etc.)

- **A:** Gerald R. Ford's operations since deploying from Norfolk, Virginia May 2 include:
 - ◇ Operating in the Arctic region and High North.
 - ◇ Neptune Strike: The U.S. Navy's Sixth Fleet and NATO's Naval Striking and Support Forces NATO (STRIKFORNATO) commenced Neptune Strike 2023-2 (NEST 23.2), the latest iteration of the Project Neptune series of enhanced vigilance activity, July 10, 2023. As in previous editions of Neptune Strike, including NEST 23.1 in February 2023, NEST 23.2 involved the transfer of authority (TOA) of assigned national forces, including USS Gerald R. Ford, to STRIKFORNATO and NATO command and control. Allied forces executed a variety of evolutions in support of enhanced vigilance activity objectives throughout European airspace, waterways, and territory.
 - ◇ Arctic Challenge: Ørland AB, Norway – U.S. Air Force B-1B Lancer supersonic strategic bombers executing Bomber Task Force 2023-3 joined NATO aircraft, June 5, during Arctic Challenge Exercise 2023 in a counter-maritime mission involving the USS Gerald R. Ford (CVN 78) Carrier Strike Group and embarked Carrier Air Wing (CVW) 8 in the High North. As a first during Arctic Challenge, the two bombers from Dyess Air Force Base's 9th Bomb Wing, were joined by U.S. Air Force and Royal Norwegian Air Force F-35A *Lightning* II fifth-generation fighters, U.S. Navy F/A-18 Super Hornet, EA-18 *Growler*, and P-8A *Poseidon* aircraft, and Allied naval assets throughout the North Sea.
 - ◇ BALTOPS/Air Defender 23, supported Carrier Air Wing (CVW) 8: NATO, Portugal – The 52nd iteration of Baltic Operations 2023 (BALTOPS 23), NATO's premier maritime-focused exercise in the Baltic Region, is set to begin from Tallinn, Estonia, June 4-16. Nineteen NATO nations, one NATO partner nations, 50 ships, more than 45 aircraft, and 6,000 personnel will participate in BALTOPS 23.
 - ◇ Sage Wolverine series of multi-lateral, high-end maritime training events
 - ◇ Numerous multi-domain interoperability training events and exercises with Allies and partners, to include Standing NATO Maritime Groups 1 and 2.

Q: The shakedown cruise of last year, when the USS Ford was at sea for a few months in preparation for



the current cruise; what was discovered during the shakedown cruise, what was improved before the current cruise?

A: Last year, the Gerald R. Ford Carrier Strike Group was underway for two months, integrating with Allies and partners to conduct a range of maritime operations interchangeably, demonstrating the shared commitment to a peaceful, stable and conflict-free Atlantic region. Gerald R. Ford's operations during this time demonstrated Ford-class aircraft carriers as the most adaptable and lethal combat platform in the world. The underway also provided an opportunity for the carrier strike group to fully integrate on its flagship, Gerald R. Ford, prior to its 2023 deployment to the U.S. Sixth Fleet area of operations.

Q: The Enhanced Carrier Presence of Comptuex-Deploy-Deploy-Standdown. What will be the benefits and will the USS Ford participate in the ECP? And was the shakedown cruise of last year part of the first deployment in the new ECP cycle?

A: We defer questions regarding Enhanced Carrier Presence to Commander, Naval Air Force Atlantic, and Commander, U.S. Fleet Forces Command. Nuclear-powered aircraft carriers remain crucial to fielding a fleet that controls the high-end fight. The Carrier Strike Group remains the cornerstone of the Navy's forward presence through sea control and power projection capabilities. The U.S. and its NATO Allies and Partners are answering the call of today's maritime environment by increasing our naval presence across the theater and exercising the broad range of our capabilities to encourage responsible behavior by all. Deployments like GRFCSG's foster the interoperability and high-end skillsets required by today's strategic realities.

Q: His general opinion about the USS Ford and its newer/better/faster capacities?

A: USS Gerald R. Ford represents a generational leap in our Navy's capacity to project power on a global scale. The ship truly is the most sophisticated warship of this time. Because of the technologies on Ford, the crew can load and launch aircraft faster than ever before, improving our warfighting effectiveness and defining the future of naval aviation.

Q: Do you have anything else to tell about your cruise on the USS Ford? – Attribute to Capt. Rick Burgess, commanding officer of USS Gerald R. Ford (CVN 78)?

A: Gerald R. Ford is, in every way, bigger, faster, and more capable than any other warship in the world.

Top: USS Gerald R. Ford and the Ticonderoga-class guided-missile cruiser USS Normandy (CG 60) steam in formation in the Mediterranean Sea, August 2023.
Above: F/A-18E Super Hornets taxi on the flight deck. **Photos U.S. Navy**

Our Sailors have invested years of their service to make this dream come true for the American people, and I am so proud of them for their achievements. Like our ship's namesake, the crew is humble and hardworking, and rarely brags about their contributions to the future of the Navy.

It takes incredible teamwork between the ship's crew and Air Wing Sailors to conduct flight operations at a high level. In just 44 fly days, Gerald R. Ford Sailors safely launched and recovered 3,761 aircraft. After leaving the Arctic, Carrier Air Wing (CVW) 8 aircrew flew more than 400 Air Combat Training Curriculum (ACTC) sorties to hone the tactical skills and awareness needed to defend our country and allies when necessary.

Together, we've participated in several high-end military exercises and operations, ranging from the Arctic and High North down to and across the entirety of the Med, and we've supported ten allied and partner nations along the way. Our Air Wing is the most efficient and tactical in the Fleet, and the finest of the

six I've served with in my career. Our Air Wing has four Super Hornet squadrons: VFA-37 *Ragin' Bulls*, VFA-213 *Blacklions*, VFA-31 *Tomcatters*, and VFA-87 *Golden Warriors*. Our EA-18G *Growler* squadron, VAQ-142 *Gray Wolves*, flies the most technologically advanced aircraft in the world and our E-2D *Hawkeye* squadron, VAW-124 *Bear Aces*, is redefining carrier-borne command and control. Our two helicopter squadrons, HSC-9 *Tridents* and HSM-70 *Spartans* fly or stand alert around the clock. The Tridents move people, parts, cargo, and mail from ship to ship and ship to shore, and the Spartans defend our ship from encounters at sea by other ships and aircraft, and they comprise our primary defense against adversary submarines. VRC-40 *Rawhides* flies the C-2 or "COD" (Carrier Onboard Delivery), ferrying parts, people, and mail to and from regional shore bases. Operating from a FORD class carrier is drastically different from that of NIMITZ class ships, and together, CVW-8 and Gerald R. Ford are establishing the standard for maximizing the combat capabilities of our nation's capital ships.

Carrier Strike Group 12

Carrier Strike Group Twelve (CSG-12 or COMCARSTRKGRU 12) is one of four U.S. Navy carrier strike groups currently assigned to the United States Fleet Forces Command. Carrier strike groups gain and maintain sea control as well as project naval airpower ashore. USS Gerald R. Ford is the aircraft carrier assigned as the Carrier Strike Group Twelve flagship. Units currently assigned included Carrier Air Wing Eight; the Ticonderoga-class cruisers Vicksburg and Normandy; and Destroyer Squadron 2.

Carrier Strike Group Twelve is led by Rear Admiral Erik J. Eslich, who started his command on May 24th, 2023; while the USS Ford anchored outside of Oslo, Norway.



An Italian Navy NH90 NATO frigate helicopter takes off of USS Gerald R. Ford in the Adriatic Sea, June 2023. Photo U.S. Navy