

THE AVIATION MAGAZINE

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- **Goodbye Saab 105OE, Austria**
- **Flashback – Decimomannu 1985**
- **Royal Danish Air Force**
- **Exercise Royal Blackhawk**
- **And so much more ...**

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Content

- 6 **Goodbye Saab 1050E, Austria**
- 32 **Exercise Swift Response 2021, Hungary**
- 42 **Belgian Rescue Divers, Belgium**
- 48 **Flashback – Decimomannu 1985, Italy**
- 74 **RNLAF's New Chinook, The Netherlands**
- 78 **Exercise Astral Knight, Italy**
- 88 **Royal Danish Air Force**
- 140 **Canadians In The Netherlands**
- 144 **Exercise Royal Blackhawk, France**
- 154 **Spotted At Wittmund AB, Germany**
- 180 **Dutch Helocasting, The Netherlands**
- 188 **Exercise Arizona Dream, Belgium**
- 196 **Passionate People – Ryan Rankin**

Cover: Austrian Bundesheer Saab 1050E over the Austrian Alps © Bundesheer/Katsuhiko Tokunaga
This page: Austrian Bundesheer Saab 1050E with two SA-10 gun pods on air patrol © Bundesheer/Katsuhiko Tokunaga



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THE AVIATION MAGAZINE

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THE AVIATION MAGAZINE is published six times a year by a team of volunteers interested in aviation. We are devoted to cover a wide range of aviation events ranging from air shows, air base visits, military exercises, civilian spotting, and pilot and veteran interviews – accentuated with exceptional photography. THE AVIATION MAGAZINE is a leader in the e-magazine format since 2009, bringing exclusive and fascinating reports to our global aviation enthusiasts digitally.

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NEWS FROM THE EDITOR

Dear Readers,

Welcome to the latest edition of THE AVIATION MAGAZINE. This issue is again packed with informative reports and great pictures of current events as well as from the past. In the report "Flashback – Decimoannu 1985", we go back to the Cold War era, when the F-104 *Starfighter* was a common sight and the U. S. Air Force's F-5 Agressors were based in England. The Danish Air Force is celebrating its 70th anniversary this year, which we have taken as an opportunity to show you a wide selection of pictures from now and then. It is probably the trend of the times that the variety of aircraft types in the air forces is steadily decreasing. At the end of 2020, for example, the Austrian Armed Forces took their Saab 105OE out of service after 50 years. You can read more about this in the report "Goodbye Saab 105OE".

For now, we wish you much pleasure in reading this new issue. Download your free copy of the 74th issue of THE AVIATION MAGAZINE [here!](https://issuu.com/theaviationmagazine)

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Ralf Peter WALTER
Publisher & Editor

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GOODBYE SAAB 1050E



REPORT BY RALF PETER WALTER AND IMAGES AS STATED



Photo: Bundesheer / Katsuhiko Tokunaga



Photographed at the Tiger Meet in 2014, this Saab 105OE carries an FPR (Flight Profile Recorder) pod under the right wing, provided by the German Air Force for the exercise. The external load under the left wing serves as a counterweight to the FPR pod. **Photo:** Wolfgang Jarisch

Saab originally planned to develop the Saab Sk60/105 as a business jet for up to five passengers. When the Swedish Air Force announced the need for a new jet trainer aircraft, Saab entered the race with a modified version of the business jet and, in December 1961, finally was awarded the contract to build a prototype. The first flight of the Saab Sk60/105 was on 29 June 1963. The Swedish Air Force received the first of its 150 Sk60 in 1966.

With the variant Saab 105XT, an improved version of the Saab Sk60 for export, Saab tried to market the aircraft internationally. However, the only export

customer became Austria. As a replacement for their aging Saab J-29F "Tunnen", Austria ordered 20 examples of the 105OE in 1968 and another 20 in 1969. The "OE version" is a slightly modified version of the "XT". Compared to the Swedish Air Force aircraft, it had more powerful engines, additional fuel tanks in the wing adding 500 liters, reinforced structures, and improved avionics.

The first three Saab 105OE's of the Österreichisches Bundesheer (Austrian Armed Forces) landed at the Linz-Hörsching air base on 2 July 1970. Six more followed in 1970, another 18 were added in 1971 and

the last 13 Saab 105OE's were delivered in 1972. At the same time, on 21 June 1972, the J-29F and on 30 April 1972, the DH Vampire were officially decommissioned.

Jagdbombergeschwader 1 (JaboG – Fighter-Bomber Wing) received 30 aircraft which were distributed among the 1. Staffel (Squadron) and 3. Staffel at Hörsching air base and 2. Staffel at Graz-Thalerhof AB. The remaining ten aircraft went to the 1. Staffel of the Überwachungsgeschwader (ÜbwGschw – Surveillance Wing) at the Zeltweg AB. In 1976 with the restructuring of the Bundesheer (Heeresgliederung '75) the JaboG and its 1. Staffel and 3. Staffel became

a subordinate unit of the new Fliegerregiment III and the 3. Staffel was redesignated 2. Staffel, also known as "Tiger Staffel" because of squadron's tiger logo. The JaboG's original 2. Staffel was assigned to the ÜbwGschw as part of the Fliegerregiment II operating out of Zeltweg AB. As a result of the Heeresgliederung '75, there were:

Fliegerregiment II			
ÜbwGschw	1. Staffel	Zeltweg	
	2. Staffel	Graz-Thalerhof	
Fliegerregiment III			
JaboG 1	1. Staffel	Linz-Hörsching	
	2. Staffel	Linz-Hörsching	



With the conversion of the ÜbwGschw to the Saab Draken, the 105sOE' were transferred to the JaboG in Linz-Hörsching. With the next major reorganization of the Bundesheer in 1995, the Fliegerregiment III at Linz-Hörsching took over all remaining 29 Saab 105OE's. In the new structure, there was no more JaboG. Regardless of the new organizational assignment, however, the ÜbwGschw continued to use the Saab 105 for air patrol / air policing. Some of the Saab 105OE's were assigned to the newly-established Düsentrainerstaffel (DüTrainSta), tasked with air combat training and additional pilot training. In 2013, the "Tiger Staffel" became a full member of the NATO Tiger Association.

service. With nearly 254,000 missions, the fleet accumulated some 156,500 flying hours, and 14 pilots and technicians lost their lives in 12 accidents.



Saab 105OE's at the flight line at their home base Linz-Hörsching. For the international airshow "Airpower 2016", one of the Saab 105OE's was painted in a stunning "tiger" color scheme. **All Photos:** Wolfgang Jarisch





The Saab 105OE's Missions

Air Patrol / Air Policing

The Saab 105OE bridges the capability-gap between the PC-7 turboprop aircraft and the EF200 fighter jet by operating at airspeeds between 150 kts and about 300 kts and up to an altitude of about 25,000 ft. It is capable of carrying two SA-10 gun pods housing a 30 mm Aden Mk.4 cannon with 150 rounds each. Alternatively, up to four hardpoints are loaded with one unguided 7.5 cm Bofors missile each.

Close Air Support

For close air support of ground forces, the Saab 105OE can carry a up to two gun pods and a maximum of 12 unguided 7.5 cm rockets at a total of six hardpoints. The maximum weapon load is 750 kg.

Tactical Reconnaissance

For aerial reconnaissance, a Vinten camera pod is mounted, equipped with up to one front camera and two side and two vertical cameras.

Target simulation for air combat training, interception exercises and ground troops.

Pilot training

The Saab 105OE also played an important role in pilot training. It was used to train pilots in operational flight in all required skills such as air combat, air surveillance, air reconnaissance, and close air support. It also provided operational pilots the possibility to gather flight hours at a very low price per flight hour compared to the Eurofighter.

Measurement of air contamination/pollution

A number of Saab 105OE's could be fitted with up to four Radiak-pods. These were used to take in-flight air samples for analysis of radioactivity or other contaminants/pollution such volcanic ashes.

VIP Transport

The 105OE can be converted for VIP transport. The two ejection seats are replaced by normal pilot seats, and two additional seats for passengers can be installed behind the pilots within only one hour.



- 1 For air policing the aircraft is fitted with two gun pods. **Photo:** Bundesheer / K. Tokunaga
- 2 Saab 105OE with a Vinten camera pod for tactical reconnaissance. **Photo:** W. Hainzl
- 3 Saab 105OE with an inert unguided 6.3 cm rocket. **Photo:** W. Hainzl
- 4 This aircraft is loaded with a Radiak-pod and an SA-10 gun pod. **Photo:** W. Jarisch



Photo: Bundesheer / Katsuhiko Tokunaga



Technical Data (basic Saab 105XT)

External dimensions
 Wing span: 31 ft 2 in (9.50 m)
 Length overall: 35 ft 51/4 in (10.8 m)
 Height overall: 8ft 10 in (2.7 m)

Powerplant:
 Two GE J85-17B turbojet engines, each rated
 2,850 lbs (1,293 kg)

Weights
 Weight empty: 5,665 lb (2,565 kg)
 Max t/o weight, trainer: 9,987 lb (4,530 kg)
 Max t/o weight, with armament: 14,330 lb (6,500 kg)
 Max weapons load: 4,110 lb (2,000 kg)

Performance at max takeoff weight
 Max speed at sea level: 524 kts (907 km/h)
 Max speed at 33,00 ft (10,000 m): 472 kts (875 km/h)

Range
 At 43,000 ft (13,100 m) at 378 kts
 (700 km/h) and 20 min reserves: 1,295 nm (2,400 km)
 At 36,000 ft (11,000 m) at 378 kts
 (700 km/h) and 30 min reserves
 and two external tanks: 1,629 nm (3,020 km)



All photos: Wolfgang Jarrisch



Photo: Bundesheer / Katsuhiko Tokunaga



These Saab 105OE's are training at their home base Linz-Hörsching for an airshow. In 2010, one of the aircraft carries a "40 Years Saab 105" marking and was painted with a "tiger" color scheme, representing the Tiger Squadron. **All photos:** Wolfgang Jarisch



Photo: Bundesheer / Katsuhiko Tokunaga



Photo: Gerhard Lang



Photo: BMLV Group



In 1975, the Saab 105OE was flown by the Austrian aerobatic team "Silverbirds" (pictures **below** and **bottom right**). In 1975, another aerobatic team, "Karo As" (pictures **above** and **top right** and **middle right**) with four Saab 105OE, was set up. In July 1975, their first public display took place. In 1984, after more than 150 performances, about 50 of them abroad, the team was disbanded. The fact that the team performed at the highest level was demonstrated by the fact that in 1977 and 1979 "Karo As" took second place in the category "Shell Oil Trophy for best overall flying demonstration" at the biennial Royal International Air Tattoo in England.



Photo: Gerhard Lang



Photo: GFL



Photo: Wolfgang Hainzl



All photos: Wolfgang Jarisch



Main Image: This beautifully painted aircraft marked the end of the Saab 105OE after 50 years of service within the Bundesheer. **Photo:** Bundesheer / Katsuhiko Tokunaga

Inset: In June 2000, the Bundesheer celebrated 30 years of flight operations with the Saab 105OE with a specially painted aircraft. **Photo:** Wolfgang Hainzl



Photo: Bundesheer / Katsuhiko Tokunaga

SWIFT RESPONSE 21

REPORT AND IMAGES BY ISTVÁN KELECSÉNYI



The Boeing C-17 *Globemaster III* carries up to 103 fully geared up paratroopers. The aircraft flew 2,800 km from Pápa AFB (MH 86 Papa Base Airport) to Bezmer AFB, Bulgaria. The average speed is about 700 km/h for the C-17 and about 500 km/h for the Lockheed C-130 *Hercules*.



The Swift Response exercises are exercises in which US paratroopers are deployed and mobilized with NATO member states. This year, it is part of the Defender-Europe 21 exercise series. In the 2021 exercises, the Alliance conducts simulated operations involving 28,000 troops in cooperation with 26 member countries at training and firing ranges in 12 countries. The exercises were scheduled to take place between March and July. In May, five exercises ran in parallel. Swift Response is a cooperation between 11 member countries to deploy 7,000 paratroopers to various military sites, airfields, and training areas in Estonia, Bulgaria, and Romania. On the Northern flank, units of the 82nd Airborne Division (3rd Brigade Combat Team) stationed at Fort Bragg were dropped in the Nurmsi area of Estonia. The unit was transported to the target area by Boeing C-17A *Globemaster III* aircraft. A combat group of the 6th Polish Parachute Brigade, NATO's southern flank, landed at Boboc airfield in Romania. The only European paratroop higher unit of the Americans, the 173rd Brigade, deployed some 3,000 troops to

targets in Bulgaria. The brigade is part of the U.S. IV Corps, the core European unit of the U.S. Army. The 173rd Brigade has a strength of about 3,300 soldiers. Most of the unit – the brigade headquarters and four parachute companies – are stationed in the Vicenza area of Italy. In Germany, the brigade's artillery, engineers and scouts are stationed in the Grafenwöhr training area. Three battalions of the brigade are part of the 503rd Infantry Regiment, nicknamed "The Rock". During World War II, The 503rd fought as a separate parachute regiment in the Pacific theatre of operations. They also deployed to Vietnam after World War II, followed by Afghanistan and Operation Iraqi Freedom. The brigade's artillery is organized as part of the 319 Artillery Regiment, but its companies are scattered among the airborne forces. Companies 1 through 3 reinforce the 82nd "All American" Parachute Division's combat groups, while Company 4 is assigned to Brigade Combat Group 173. The history of artillerymen dates back to the First World War, when they were formed in 1917 as bouncers for land forces. By World War II, the 319th Glider Field

Artillery Battalion was the first to arrive with airborne troops "from the skies to the battle", their first deployment being in Italy at Anzio in 1943. In 1944, they took part in pre-landing parachute operations in Normandy as artillery of the 82nd Airborne at St. Mere Eglise. In Operation Market-Garden, they fought in the Nijmegen area, among other places. The 91st Reconnaissance Squadron of the Airborne Brigade is part of the 1st Cavalry Division. Reconnaissance has been a cavalry unit in the United States since World War II. During World War II, they participated in six campaigns in North Africa, Sicily, and Italy. On 26 March 2003, a combat team of around 1,000 paratroopers, reinforced by 160 special operations (Ranger) troops, descended from 17 Boeing C-17A *Globemaster III* heavy transport aircraft on Bashur airfield in the Mosul district of northern Iraq. The entire assault force was concentrated in an area of 1,500 x 4,500 meters (Landing Zone – LZ). After the dawn parachute assault, 12 Boeing C-17A *Globemaster III* transport aircraft delivered heavy combat equipment (some Abrams M1 tanks and several Stryker M1128

MGS (Mobile Guns System – MGS)) to the captured airfield. Over another five days, a further 2,200 paratroopers and 400 vehicles were delivered to the airfield. The operation in northern Iraq, which was supported by the Kurds, allowed the allied coalition forces to overrun the Iraqi regime's forces from two sides. In February 2015, during the Warlords Rock exercise, 750 of their troops jumped over the Papai Base Airport from Boeing C-17A *Globemaster III* and Lockheed C-130 *Hercules* transport aircraft, together with soldiers from the 25/88 Light Mixed Battalion and the 34th László Bercsényi Special Operations Battalion (currently the two battalions form the majority of the 2nd Special Operations Brigade in Szolnok). One month later, a similar brigade combat team jumped over the Yavoriv training centre near Lvov in Ukraine. In 2017, the 503rd Battalion 2nd Battalion Fighter Group jumped from Lockheed C-130 *Hercules* during a joint exercise with Serbian airborne troops near Belgrade. The 173rd troops – around 3,000 – deployed to the Papa Base Airport, were placed in a virtual tent camp and quarantined, so COVID-19 did



not even allow them to make a round trip to the city. PCR tests were also mandatory during the exercise. Nicknamed the "Sky Soldiers", the unit was deployed by U.S. Air Force and Air National Guard Boeing C-17A *Globemaster III* and Lockheed C-130H and J *Hercules* transport aircraft to targets in Bulgaria. These targets were Bezmeri Air Base and Letisei Air Base in the vicinity of the joint U.S.-Bulgarian training area at Novo Selo. The Americans were supported by two Boeing C-17A *Globemaster III*s from the international SAC (Strategic Airlift Regiment) deployed at the Papa Base Airport. In one wave, some 1,100 paratroopers and their support equipment (M119A3 105mm towed tanks and HMMWW light utility vehicles, along with ammunition, food, beverages, and other consumables) were

deployed. Each wave consisted of six Lockheed C130 *Hercules* and three to five Boeing C-17A *Globemaster III*s. As everything for the Russian airborne troops is delivered from the sky, everything except the live ammunition was delivered to the airfields by pallet-mounted cargo drops. The preparations for the transport of the paratroopers, the loading, and the launch of the first wave were the subject of a media invitation. The paratroopers nowadays descend mainly during the night and early morning hours, when the air defense of the adversary is relatively weaker close to the target due to the reduction of the visible range of detection. It is easy to see that even a few live forces with automatic rifles can cause serious casualties among the soldiers descending on the

parachute. The deployment of large numbers of paratroopers can nowadays be expected only in times of asymmetric warfare, when there is total air superiority, and such units are a "gentleman's game" for a country like Hungary, so parachute brigades and higher units are a "toy" of the middle and great powers. Mass paratroop deployments require a large transport force, and to intercept enemy air defenses, a large number of combat aircraft.

The Boeing C-17A *Globemaster III* is capable to load seven HMMWW light utility vehicles in two rows.





DEFENDER-Europe

DEFENDER-Europe is an annual large-scale U.S. Army-led, multinational, joint exercise designed to build readiness and interoperability between U.S., NATO and partner militaries. This year's exercise:

- Focuses on building operational readiness and interoperability with a greater number of NATO allies and partners over a wider area of operations.
- Is defensive in nature and focused on responding to crisis if necessary
- Demonstrates that the U.S. commitment to NATO is iron clad.
- Integrates approximately 28,000 multinational forces from 26 nations to conduct nearly simultaneous operations across more than 30 training areas in 12 countries.
- Exercises new high-end capabilities such the new U.S. Army Security Force Assistance Brigades, air and missile defense assets and the recently reactivated V Corps.
- Demonstrates the U.S.'s ability to serve as a strategic security partner in the western Balkans and Black Sea regions while sustaining their abilities in northern Europe, the Caucasus, Ukraine and Africa.



Top and right: U.S. Air Force Boeing C-17A *Globemaster III* assigned to the 62th Airlift Wing at McChord AFB.
Above: Boeing C-17A *Globemaster III* assigned to the Strategic Airlift Capability (SAC) - a multinational initiative - and registered to Hungary.



▲▼ Lockheed C-130J Hercules of the first wave on Monday night taxiing to the runway for take-off .



U.S. Air National Guard Lockheed C-130H Hercules assigned to 109th AS. Other than the C-17A, ▲ the C-130 is capable to deliver its cargo by dropping it in flight with the help of a parachute system. ▼



BELGIAN



RESCUE DIVERS

REPORT AND PHOTOS BY KRIS CHRISTAENS AND GERT TRACHEZ

Two new rescue divers for the 40th Squadron

In December 2020, after two years of training, two new candidate rescue divers from the 40th Squadron SAR of the Belgian Air Force have taken their final exams. The 40th Squadron is a helicopter squadron based at Koksijde Air Base. It is dedicated to search and rescue (SAR), anti-submarine warfare, and troop transportation. The squadron operates four NH90 NFH helicopters, which have replaced the Westland

The NH90 is hovering over the accident site and the rescue diver is winched to the water.

Sea King Mk.48 helicopters. On average, the NH90 helicopters of the Belgian Air Force and its crews carry out around 90 life-saving missions annually.

The final exam of this intensive rescue diver training includes a sports test, an exercise on board a ship, and a life-saving diving exercise. During the live-saving diving exercise, the two new divers were tasked with rescuing a recreational diver who was trapped in a narrow passage at a lake. This exercise took place in the old Carrière de Barges quarry in Tournai (Belgium),



which today is a lake filled with clear spring water. The lake is up to 50 meters deep and is a well-known diving site for recreational divers. Under the supervision of the base commander of Koksijde AB, the squadron commander of the 40th Squadron, and some journalists, the NH90 NFH arrived at the Carrière de Barges on 8 December 2020 around 2 p.m. for this special 'scramble'. After the NH90 NFH made a reconnaissance flight over the lake, the candidate rescue diver was released into the cold water so that he could help the recreational diver in distress as quickly as possible. The recreational diver was located by the rescue diver at a depth of 30 meters and was brought to the surface of the water. He then

was winched in the helicopter so that he could be taken to a decompression chamber as quickly as possible. No more than 15 minutes passed since the rescue diver jumped into the water and the recreational diver was flown to a treatment center. This is the reason why a SAR diver must always be in excellent physical condition. Today, the 40th Squadron has nine divers, and during every SAR mission, there is one diver on board the NH90 helicopter. While the main task of the rescue diver is to rescue drowning people in the water, he is also responsible for the evacuation of patients on board a ship or on land. In addition, the rescue diver is also responsible for the education and training of the survival skills of the

own crews and crews of the Air Force concerning SWET (Shallow Water Egress Training) as HUET (Helicopter Underwater Escape Training).

Above: The NH90 from the rescue diver's perspective while being lowered into the water.

Top right: The orange smoke signals the location of the accident site to the helicopter crew and provides the pilots with information on the wind situation.

Right: The injured diver and the rescue diver are being winched to the helicopter.





DECIMOMANNU 1985

PHOTO-REPORT
BY RALF JAHNKE



Decimoannu AB (commonly known as Deci) is an airbase located on the Italian island of Sardinia. It was established in June 1940 and was used by the Italian Air Force. During the first six months of 1943 in WWII, it was used by the German Air Force. In September 1943, after the armistice of Cassibile between the Italian Kingdom and the Allies, the United States of America took over the airfield. Until September 1944, the U.S. deployed Curtiss P-40 Warhawk fighter and ground attack aircraft and Martin B-26 Marauder medium bombers. At the end of 1954, Deci was set up as an Air

Weapons Training Installation (AWTI) according to NATO standards. In March 1957, the Italian Air Force established the training center "Centro Training al Tiro", followed by an air weapons training unit of the Royal Canadian Air Force (RCAF). In December 1969, a tri-national agreement between Italy, Canada, and Germany was signed on the use of Deci and the nearby air to ground shooting ranges. In September 1960, the first German Air Force F-84F Thunderstreak, assigned to Jagdbombergeschwader 32, deployed to Deci, and the permanent detachment "Deutsches Luftwaffenübungsplatzkommando Italien" was

established. In 1983, it was renamed to "Taktisches Ausbildungskommando der Luftwaffe Italien". Deci was also used by other NATO countries, in particular the U.S. Air Force Europe. After the RCAF left Deci in July 1970, the Royal Air Force (RAF) moved in as RAF Support Unit Decimomannu. In 1979, with the help of the U.S. Air Force, an Air Combat Maneuvering Instrumentation (ACMI) was set up. This, then was replaced in 2002 with a German-Italian-Israeli-built Autonomous Air Combat Maneuvering Instrumentation (A-ACMI). To further improve air-to-air combat training and to add more realism to it, the U.S. Air

Force had an average of six aggressor aircraft – F-5E Tiger and from 1989 on, the F-16C Fighting Falcon – permanently deployed to Deci until 1990. In 1998, the RAF left Deci, leaving Italy and Germany as the only two countries with a permanent presence at Decimomannu. Finally, by the end of 2016, the German Air Force "Taktisches Ausbildungskommando der Luftwaffe Italien" was disbanded. Deci was one of the most active air bases of the NATO. In times of the "Cold War", there were as many as 60,000 sorties per year with up to 450 movements in a single day.

French Air Force Mirage IIIC assigned to EC 2/10 "Seine" at Creil AB, France taxiing out for the next mission.

FRENCH AIR FORCE



▲ French Air Force Mirage IIIBE assigned to
▼ ECR 2/2 "Côte d'Or" at Dijon AB, France.

French Air Force Mirage IIIC assigned to EC 2/10 "Seine" at Creil AB,
France in front of the ATC-Tower at Decimomannu AB. ▼





French Air Force Mirage III C assigned to EC 2/10 "Seine" at Creil AB, France with two external high speed fuel tanks and a Sidewinder sensor (1, 2, 3,) and with two large, standard fuel tanks (4).

ITALIAN AIR FORCE



Italian Air Force Lockheed F-104S-ASA *Starfighter* assigned to 18° Gruppo/37° Stormo. Note the SUU-21 bomb dispenser for BDU48 and Mk75 bombs in addition to the fuel tip-tanks (right).



Italian Air Force Lockheed F-104S-ASA *Starfighter* assigned to 23° Gruppo/5° Stormo at Rimini AB, Italy without any external loads (clean configuration).



Italian Air Force Fiat G.91Y assigned to 101° Gruppo/8° Stormo at Cervia AB, Italy carrying a rocket launcher pod.



Italian Air Force Aermacchi MB326E assigned to CSSTA (Centro Sperimentazione E Standardizzazione Tiro Aereo) Decimomannu, Italy.



1



2



3



4



5

- 1, 2, 5 German Air Force McDonnell Douglas F-4F *Phantom II* assigned to Jagdbombergeschwader 35 at Pferdsfeld AB, Germany.
- 3 German Air Force Dassault-Breguet/Dornier Alpha Jet assigned to Jagdbombergeschwader 49 at Fürstenfeldbruck AB, Germany.
- 4, 6 German Air Force McDonnell Douglas F-4F *Phantom II* assigned to Jagdgeschwader 74 "Mölders" at Neuburg AB, Germany.



6





This German Air Force F-104G *Starfighter* made a stopover at Decimomannu on its ferry flight to the Turkish Air Force as part of NATO's assistance to the Turkish military. The F-104G is ex Jagdbombergeschwader 33.



German Air Force Lockheed F-104G *Starfighter* assigned to Jagdbombergeschwader 34 at Memmingerberg AB, Germany.



German Air Force Lockheed F-104G *Starfighter* (**below**) assigned to Jagdbombergeschwader 33 at Büchel AB, Germany.

German Air Force Lockheed TF-104G *Starfighter* (**above**) and T-104G (**below**) assigned to Jagdbombergeschwader 34 at Memmingerberg AB, Germany.





1 Royal Air Force McDonnell Douglas FRG.2 *Phantom II* assigned to 64 Sqn/228 OCU at RAF Coningsby, UK taxiing back after a training sortie,
2 and on the flightline in clean configuration.
3 Royal Air Force Lockheed Hercules C.3 assigned to Lyneham Transport Wing, UK.



U.S. Air Force Northrop F-5E Tiger II assigned to 527th Tactical Fighter Training Aggressor Squadron at Alconbury AB, England.



F-5 E 01-553

SUITABLE FOR USE IN AERATO PACE
SCHEDULE THIS AIRCRAFT WITH GRADE
SPEC FUEL IF NOT AVAILABLE
TO XO 4221-1-14. WILL BE
CONSULTED FOR EMERGENCY ACTION



WARNING
THIS AIRCRAFT CONTAINS CANOPY DEPLOYERS
SUSTAINING EXPLOSIVE CHARGES. SEE APPLICABLE
-2 T.O. FOR COMPLETE INSTRUCTIONS

WARNING

AIR SCISSOR
DO NOT OBSTRUCT

CAUTION

HYDRA HOISTING AIRCRAFT
SEE APPLICABLE - 2 T.O.

1. PUSH LATCH TO OPEN DOOR
2. PULL D HANDLE OUT 6 FT
TO JETTISON CANOPY

RESCUE



STATO PORTS



U.S. AIR FORCE



U.S. Air Force McDonnell Douglas F-4E *Phantom II* assigned to 86th Tactical Fighter Wing at Ramstein AB, Germany.

RNLAF'S NEW CHINOOK

PHOTO-REPORT BY
JORIS VAN BOVEN
AND ALEX VAN NOIJE



On Wednesday, 14 April 2021, the first of the new CH-47F MYII CAAS *Chinooks* of the Royal Netherlands Air Force (Koninklijke Luchtmacht) was delivered to the Dutch Defense Helicopter Command (Defensie Helikopter Commando) at Gilze-Rijen AB.

One week later, on Thursday afternoon, 22 April 2021, the first official mission of the new helicopter was conducted when the Chinook CH-47F with registration D-427 flew in the GLV5 low-flying area, close to Eindhoven AB (GLV5="Gebied voor LaagVliegen" #5).

BACKGROUND

In 2015, the Royal Netherlands Air Force decided to buy 14 new CH-47F helicopters, as the CH-47D models were reaching their end-of-life after 25 years in service. The six existing CH-47F helicopters will be upgraded to the same CH-47F MYII CAAS version.

CH-47F is officially known as "CH-47F MYII CAAS" (MYII= Multi-Year batch, CAAS=Common Avionics Architecture System)) and this helicopter is more or

less the same as the U.S. Army models. With only some minor Dutch modifications, compatibility with future U.S. Army upgrade packages remains possible.

15 CH-47Fs will be flown operationally from Gilze-Rijen AB and five CH-47Fs will be used in the USA at Fort Hood Army Base for training and instruction purposes.

The Royal Netherlands Air Force's first CH-47F MYII CAAS *Chinook* approaches the training area on its first official mission.



CH-47F MYII CAAS *Chinook* on its first low-level training mission in the low-flying area GLV 5 close to Eindhoven AB.

ASTRAL KNIGHT 2021

REPORT AND PHOTOGRAPHY BY SALVATORE ROCCELLA AND SIMONE GAZZOLA UNLESS NOTED

On 13 May 2021, at Aviano Air Base in Italy, airmen from the 31st Fighter Wing kicked-off ASTRAL KNIGHT 2021 (AK21), a joint, multinational exercise operating out of multiple locations throughout Europe.

AK21 is a U.S. Air Forces in Europe-Air Forces Africa (USAFE-AFAFRICA)-led event involving U.S. airmen, soldiers and sailors working with service members from Albania, Croatia, Greece, Italy and Slovenia.

"[ASTRAL KNIGHT 2021] is USAFE'S exercise for integrated missile defense", said U.S. Air Force Maj. Richard Greer, 31st Fighter Wing AK21 exercise planner. "The [exercise participants] are linking all of their command and control nodes together to be able to show a combined radar picture."

This integrated air and missile defense exercise focuses on defending key terrain, and scheduled training involves a combination of flight operations and computer-assisted scenarios.

There were approximately 1,200 airmen from the U.S. Air Force, 250 soldiers from the U.S. Army, 300 sailors from the U.S. Navy, 150 airmen from the Italian Air Force, and 30 service members from Croatian Air Force participating in this exercise. Participating aircraft included the U.S. Air Force F-15E Strike Eagle, F-16 Fighting Falcon, HH-60 Pave Hawk and C-130J Super Hercules aircraft, Italian Air Force F-35 Lightning II's, Hellenic Air Force F-16 Fighting Falcon and EMB-145 Eerie aircraft, and Croatian Air Force MiG-21 BisD/UMD's.



This exercise aims to enhance the command and control integration, coordination and interoperability of air, land and sea capabilities, and overlapping operations into the integrated air and missile defense enterprise.

ASTRAL KNIGHT strengthens U.S. deterrence efforts and adapts through improving readiness and responsiveness while working to build a capacity to better effectiveness and interoperability.

The Aviation Magazine thanks the USAFE-AFAFRICA command, the 31FW and the Italian Air Force for making this report possible.

An U.S. Air Force KC-135 *Stratotanker* assigned to the 100th Air Refueling Wing refuels an Italian Air Force F-35 *Lightning II* during exercise Astral Knight 21 over the Adriatic Sea.

Photo: U.S. Air Force by Staff Sgt. Izabella Workman



F-35A *Lightning II*'s assigned to 32° Stormo (32nd Wing), 13° Gruppo (13th Squadron) returning to Aviano AB after having completed their mission.





F-16C FIGHTING FALCON ASSIGNED TO 31ST FIGHTER WING





An U.S. Air Force KC-135 *Stratotanker* assigned to the 100th Air Refueling Wing refuels a U.S. Air Force F-16C *Fighting Falcon* of the 31st Fighter Wing over the Adriatic Sea.

Photo: U.S. Air Force by Staff Sgt. Izabella Workman



Main image: C-130J Super Hercules assigned to the 37th Airlift Squadron at Ramstein AFB, Germany.

Insets: HH-60 Pave Hawk assigned to the 56th Rescue Squadron at Aviano AB, Italy.

ROYAL DANISH AIR FORCE

TEXT BY RALF PETER WALTER AND
PHOTOGRAPHY BY RALF JAHNKE
UNLESS STATED



The Royal Danish Air Force was created on 1 October 1950 as an independent branch of the armed forces. It was formed by merging the Marinens Flyvevæsen (Naval Air Service), founded in 1911, and the Hæren Flyvertropper (Army Aviation Troops), founded in 1912.

The Royal Danish Air Force (RDAF) is a founding member of the North Atlantic Treaty Organization (NATO), an alliance established in April 1949.

However, despite being one of the smallest of the current 30 member states, Denmark is one of the most active members. In the recent past, the Danish Air Force has been involved in almost every major NATO operation:

- ◇ In 1999, they took part in the Operation Allied Force, a military operation against the Federal Republic of Yugoslavia during the Kosovo War.

Danish F-16s were based at Grazzanise AB in Italy. The RDAF flew missions over the Kosovo and for the first time in their history, they were bombing hostile targets.

- ◇ From October 2002 to October 2003, in support of Operation Enduring Freedom, Danish F-16s flew about 900 missions over Afghanistan out of Ganci AB in Kyrgyzstan. Operation Enduring Freedom

was a joint and combined war against al Qaeda and the Taliban in Afghanistan as a reaction to the terrorist attack against the United States of America on 11 September 2001.

- ◇ In 2005, the RDAF operated three, and in 2007, four AS550 C2 Fennec light helicopters in Iraq. The Fennec's missions included light transportation, ground force protection, patrols, and in-flight

In connection with Valdemarsdag 2019, the 800th anniversary of the Dannebrog, the Danish Armed Forces and Air Force have painted an F-16 fighter aircraft in the colours of the Dannebrog. Here it is on its first flight over Denmark.
Photo: Royal Danish Air Force / Lars Richter

THE PRESENT



Above: The "Dannebrog" F-16 was scrambled to intercept a Russian Air Force IL-20M flying at the edge of Danish airspace. The aircraft, known in NATO as a COOT-A, did not enter Danish airspace. **Photo:** Royal Danish Air Force



Above: The "Dannebrog" F-16 escorts an U.S. Air Force B-1B *Lancer* strategic bomber through Danish airspace. **Photo:** Royal Danish Air Force



As part of the F-35 *Lightning II* Integrated Test Force, Denmark has contributed with an F-16BM *Fighting Falcon*, flying as a chase plane out of 461st FLTS Edwards Air Force Base, California from 2008-2016. During this period it has performed more than 1,100 missions in support of the F-35 flight tests. The F-16 was used as safety chase, photo chase and test support aircraft.

command and observation duties.

- ◇ In 2008, four AS550 C2 Fennec were deployed to the former British airbase Camp Bastion in the Afghanistan province Helmand. In mid-2014, in support of NATO's Operation Resolute Support, Denmark based three EH101s at a helicopter base near Mazar-e Sharif in northern Afghanistan.
- ◇ From March to October 2011, the RDAF participated with six F-16s from the Italian airbase Sigonella AB and one C-130 in Operation Odyssey Dawn / Unified Protector to establish a no-fly zone to protect civilians in Libya, and to support insurgents against government forces. A total of 599 missions were flown, and 923 precision bombs were dropped.
- ◇ From October 2014 until September 2015 Denmark, had seven – four active and three reserve – F-16s deployed to Ahmed Al Jaber Air Base in Kuwait to operate in Iraq against Islamic State militants.

From the end of 2019 to the end of 2020, the RDAF supported the French-led Operation Barkhane with two EH101 Merlin transport helicopters. The operation

is part of the international effort against terrorism in the Sahel region. The Sahel region includes Burkina Faso, Chad, Mali, Mauritania, and Niger. The EH101's primary mission was the transport of troops and equipment deployed in Operation Barkhane as well as forces supported by Operation Barkhane, including soldiers from the so-called G5 Sahel Joint Force, which includes soldiers from Burkina Faso, Mali, Mauritania, Niger, and Chad. The helicopters were also used for aerial reconnaissance.

Since 2004, the RDAF takes part in the Baltic Air Policing to support safeguarding the airspace over the three Baltic NATO members Lithuania, Latvia, and Estonia. Since these countries do not have sufficient capabilities of their own, Allies deploy fighter jets and personnel to air bases at Šiauliai, Lithuania, and Ämari, Estonia, on a rotational basis. The aircraft are patrolling the air space and stand ready 24x7 to be launched by NATO's northern Combined Air Operations Centre at Uedem, Germany, in case an aircraft inside or approaching NATO airspace fails to properly identify itself. Until now, the RDAF deployed their F-16 for seven turns to the Baltics.

Danish CL-604s are patrolling the Baltic Sea as part

of NATO's efforts to assure the Alliance's eastern members of the Alliance's solidarity – the so-called assurance measures. The crew monitors the waters and reports their findings to NATO. The assurance measures have been implemented since 2014 when the crisis in Ukraine began.

Since 2015, Denmark has made several different contributions to Frontex. The Air Force participates in the surveillance of Europe's external borders by patrolling the Mediterranean Sea with the CL-604 Challenger aircraft. The tasks of the aircraft and its crew include monitoring the Mediterranean Sea for illegal migrants, smugglers, and other illegal activities and, if necessary, participating in search and rescue operations.

Today, the Royal Danish Air Force consists of three wings and three major airbases:

Fighter Wing Skrydstrup

- ◇ Squadron 727 with F-16 Fighting Falcon.
- ◇ Squadron 730 with F-16 Fighting Falcon.

Air Transport Wing Aalborg

- ◇ Squadron 721 with Hercules C130J transport aircraft and Challenger CL-604 utility aircraft

Helicopter Wing Karup

- ◇ Squadron 722 with EH-101 Merlin search & rescue helicopters/tactical troop transport helicopters.
- ◇ Squadron 723 with MH-60R Seahawks primarily operating from naval vessels in the North Atlantic Sea around Greenland and the Faroe Islands.
- ◇ Squadron 724 with Fennec AS550 C2 Fennec light observation and transport helicopters.
- ◇ Flying School with T-17 Supporter.

In the 70th year of its existence, two F-16s are flying with a special livery. The E-191 "Danneborg 800 Years" commemorates the first appearance of the Danish national flag at the Battle of Lyndanisse (present-day Tallinn) in June 1219. On the occasion of the upcoming introduction of the Lockheed F35A Lightning II, the E-005 was painted with the color scheme of the F-35A. For this purpose, the original paint was used to gain experience with the new paint, which has radar-absorbing properties and requires a special painting technique, before the arrival of the first F-35A.



Top left: F-16AM deploying flares as a countermeasure to inbound heat seeking anti-aircraft missiles.

Top right: The vapour trails of this F-16AM indicate a high air humidity

Above: Four-ship formation with three F-16BM two-seaters and one F-16AM single-seater.



Insets: Danish F-16 Fighting Falcon during a NATO Baltic Air Policing deployment to Siauliai Air Base in Lithuania. **Photos:** Royal Danish Air Force / Jacek Siminski

Photo: Ralf Jahneke



The F-16AM with serial E-005 is painted with the original F-35 paint and has an F-35-like color scheme.
Photo top: Royal Danish Air Force



▲ F-16AM with a single center line fuel tank and four air-to-air missiles.
▼ Low pass of a clean F-16AM.

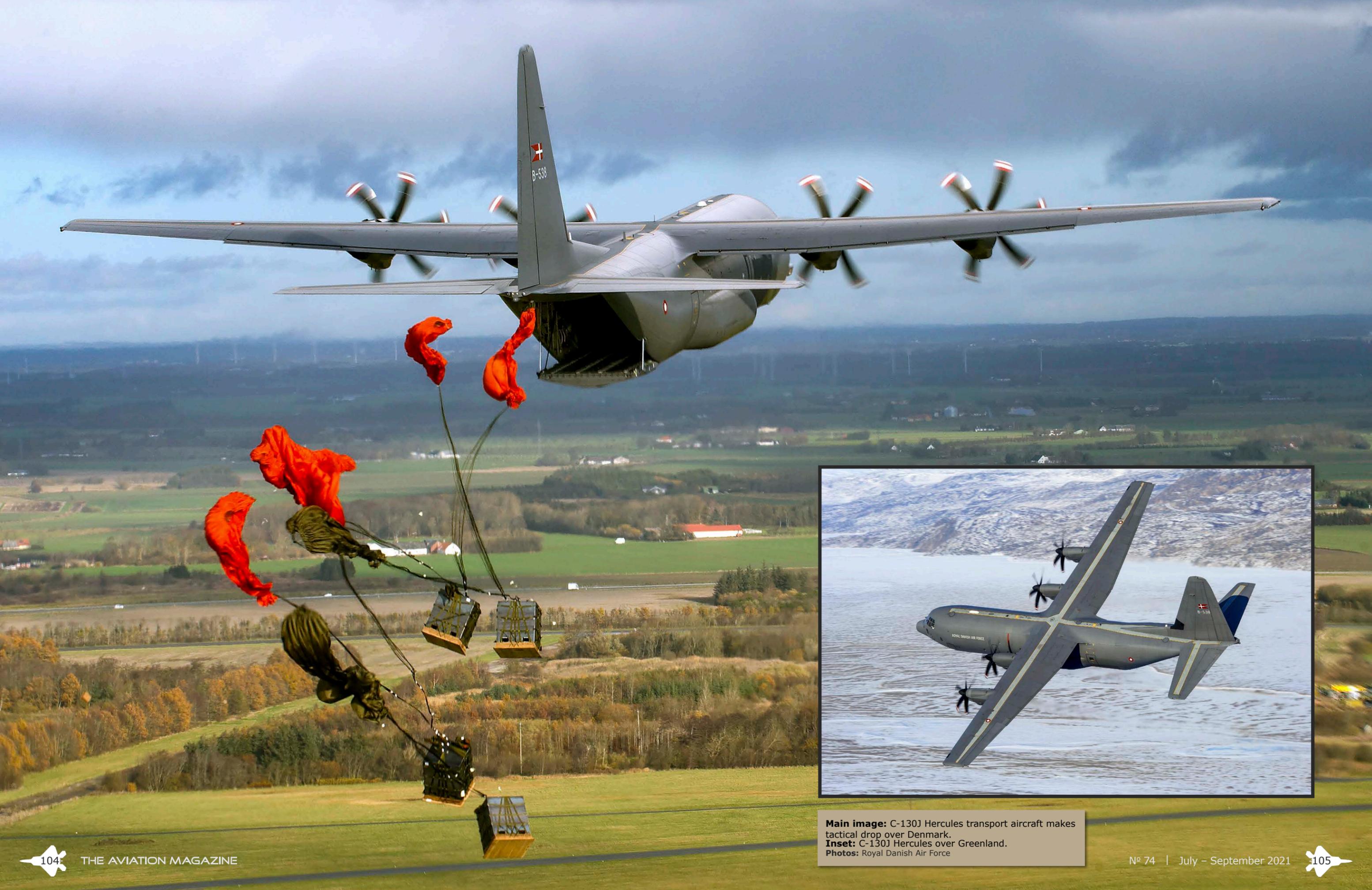


Heavily loaded F-16BM on final approach for landing at Skrydstrup AB. ▲▼





Photo: Royal Danish Air Force / Jacek Siminski



Main image: C-130J Hercules transport aircraft makes tactical drop over Denmark.
Inset: C-130J Hercules over Greenland.
Photos: Royal Danish Air Force



Main image: C-130J Hercules during beach landing exercise at Rømø, Denmark.
Insets: T-17 Supporter on the beach.



▲ CL-604 on a marine environmental flight on oil pollution. **Photo:** Royal Danish Air Force
 ▼ CL-604 at the Royal International Air Tattoo 2007. **Photo:** Ralf Peter Walter



CL-604 takeoff at Stuttgart Airport, Germany. **Photo:** Ralf Peter Walter
 CL-604 over Greenland. **Photo:** Royal Danish Air Force





The crews of the Danish EH101s in the role of Tactical Troop Transport have been in Snowdonia National Park in Wales to train low-level formation flying in mountains and landing in difficult terrain - ledges and mountain tops. The wind and weather in a mountainous area is obviously very different to Denmark, so the helicopter crews need to train in such environments at regular intervals so they are ready to deploy to conflict zones outside the country's borders.
Photo: Royal Danish Air Force / Rune Dyrholm



Some of the EH101 *Merlins* are configured for SAR (search and rescue) missions.
Photo: Royal Danish Air Force



EH101 *Merlin* approaching the landing platform on HDMS Absalon (F341).
Photo: Royal Danish Air Force / Thomas Blanke



1 to 4: In 2014/15 Denmark deployed three EH-101 *Merlins* to northern Afghanistan. The helicopters flew primarily for the German troops in the area.

5 & 6: In December 2019, Denmark sent two EH101 helicopters with 70 support personnel to Mali to support French forces engaged in Operation Barkhane in the Sahel region.

All photos: Royal Danish Air Force



In October 2016, the MH-60R *Seahawk* maritime helicopter was tested in severe weather in the North Atlantic. The landing took place on the inspection ship *Vædderen*. The test is called the SHOL test.
Photo: Royal Danish Air Force / Rene Rasmussen



1



3



2



4



5

1 & 3: In June 2020, HDMS Niels Juel was in Greenland to operate under Arctic Command and contribute to sovereignty enforcement and surveillance of the waters. She conducted a helicopter exercise with an SH-60R from HDMS Hvidbjørnen. **Photo:** Royal Danish Air Force / Iben Valery

2: In early June 2016, the first of the new maritime SH-60R Seahawk helicopters lands on HDMS Iver Huitfeldt. **Photo:** Royal Danish Air Force / Iver Huitfeldt

4: MH-60R Seahawk near the Faroe Islands. **Photo:** Royal Danish Air Force / Rune Dyrholm

5: The crews of MH-60R Seahawks are training with the GAU-21 12.7 mm and M240D 7.62 mm machine gun. **Photo:** Royal Danish Air Force



▲ AS550 C2 Fenec with special color scheme to celebrate 80.000 flight hours of the AS550 fleet. **Photo:** Royal Danish Air Force
▼ AS550 C2 combat demonstration at the Dragon Barracks in Holstebro in 2019. **Photo:** Royal Danish Air Force / Lars Mikkelsen



AS550 C2 Fenec in Iraq in 2008. **Photo:** Royal Danish Air Force
AS550 C2 Fenec with sniper on board. **Photo:** Royal Danish Air Force / Lars Mikkelsen



THE PAST



From 1964 to 1986, the RDAF had a total of 51 *Starfighters* of the versions F-104G (**above**) / TF-104G and CF-104 / CF-104D as interceptors. Home base was Aalborg AB with Esk 723 and 726.



1 & 2: Lockheed F-104G Starfighter | 3 & 4: Lockheed CF-104 Starfighter
All Photos: Royal Danish Air Force



▲ The RDAF had 20 RF-35 *Draken* in reconnaissance configuration which were operated by Esk 729 at Karup AB.
▼ RF-35 *Draken* of Esk 729 during NATO exercise "TFM 87" at Örnland AB/ Norway.



Esk 725 flew the fighter version of the F-35 *Draken*. This one is landing at Karup AB during the NATO exercise "Best Focus 82". ▲
The RDAF had a total of 11 TF-35 *Draken* training aircraft. This TF-35 was used as a "referee aircraft" during "Best Focus 82". ▼





This Lynx Mk90B is inflight refueling from the support ship HDMS Esbern Snare (L17) in the Gulf of Aden during Operation Ocean Shield. Photo: Royal Danish Air Force



▲ Lynx Mk90B equipped with a 12.7mm TMG M3M FN Herstal machine gun over Rømø. **Photo:** Royal Danish Air Force
 ▼ Lynx Mk90B on board of HDMS Hvidbjørnen (F360) in the Prince Christian Sund. **Photo:** Royal Danish Air Force



The Sikorsky Sea Kings S-61A-5 were used for SAR and operated by Esk 722 from the Vaerlose AB. ▲
 Sikorsky Sea King S-61A-1 in the basic version taking off during the Open Dagen 1985 in Aalborg AB. ▼





▲ One of a total of three C-130H belonged to the transport fleet of the Esk 721 from Værløse AB. This Hercules supported the NATO exercise "Best Focus 82" in Karup AB.
 ▼ The Douglas C-47A Skytrain was in RDAF service from 1953 to 1982 with Esk 721 at Værløse AB.



Lockheed C-130H *Hercules* assigned to Esk 721 at Værløse AB. Photo: Royal Danish Air Force ▲
 The Douglas C-47A *Skytrain* is the military version of the DC-3. Photo: Royal Danish Air Force ▼





Thirty Hawker Hunter F. Mk.51 and two two-seater T. Mk.53 were initially used in Karup AB and finally in Aalborg AB with the Esk 724. They were in service until 1974. **Photo below:** Royal Danish Air Force



The RDAF received 59 ex-USAF F-86Ds as "military aid" in 1958-1960. The aircraft were assigned to Esk 723, 726 and 728. **Photos bottom:** Royal Danish Air Force





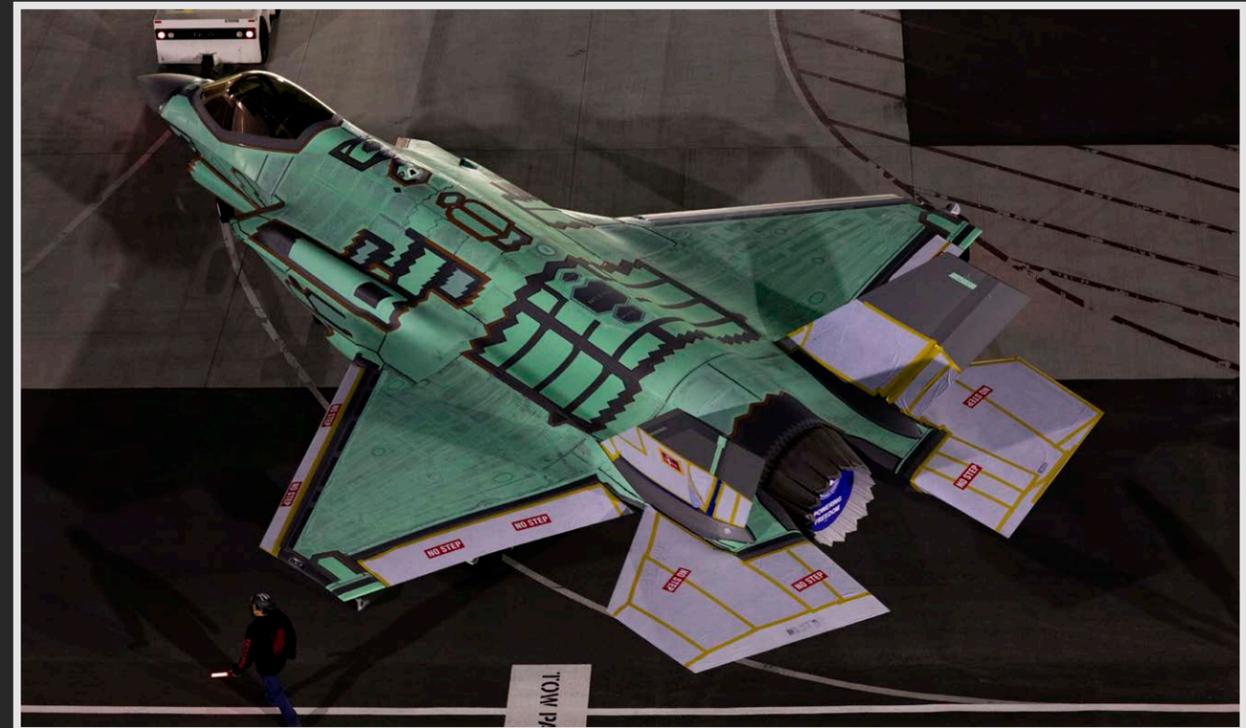
Super Sabre single-seater version North American F-100D (above) and two-seater F-100F (right).
Photos: Royal Danish Air Force



The RDAF operated a total of 72 Super Sabre F-100D (above & right) and F-100F (below). Eskadrille 725, 727, 730 used this supersonic fighter from 1959-1982 at Karup AB before moving to Skrydstrup AB.



THE FUTURE



Top: On 6 April 2021, Denmark's first F-35 fighter aircraft was handed over to the Danish Armed Forces at a ceremony at manufacturer Lockheed Martin.
Above left and right: The F-35 in the final stage of its completion at the Lockheed Martin production site in Texas
Photos: Royal Danish Air Force / Lockheed Martin

CANADIANS IN THE NETHERLANDS

REPORT AND IMAGES BY JORIS VAN BOVEN AND ALEX VAN NOIJE



Mid April 2021, the Halifax Class frigate HMCS *Halifax* underwent two weeks of maintenance in the military port of Den Helder in the Netherlands.

The onboard helicopter CH-148 *Cyclone* (a military variant of the Sikorsky S-92) flew to the nearby Dutch Naval Air Station De Kooy (MarineVliegkamp De Kooy). While at De Kooy, the Canadian crew flew several local missions with their CH-148 helicopter. During this maintenance period, some crew changes were performed. Spare parts for the HMCS Halifax

were flown in from Canada to Eindhoven AB by two CC-150 *Polaris* (Airbus A310) and one CC-177 *Globemaster III* (Boeing C-17 *Globemaster III*). This was the second "invasion" of the Royal Canadian Air Force (RCAF) to the Netherlands. In 1944/45, Royal Canadian Air Force fighter aircraft were based

at Eindhoven AB (then named airbase B73) after Eindhoven was liberated during the operation Market Garden in September 1944.

The Royal Canadian Air Force CC-177 *Globemaster III* assigned to 429 Transport Squadron is taxiing to the ramp after landing to join a RCAF CC-150 *Polaris* assigned to 437 Transport Squadron. This CC-150 is also used by the Canadian Prime Minister as "Canada One".



▲ CC-177 *Globemaster III* of 429 Transport Squadron.
▼ CH-148 *Cyclone* of 423 Maritime Helicopter Squadron.



CC-150 *Globemaster III* of 437 Transport Squadron. ▲
CH-148 *Cyclone* of 423 Maritime Helicopter Squadron. ▼



ROYAL BLACKHAWK

REPORT AND IMAGES BY ROELOF-JAN GORT



The eight edition of the exercise ROYAL BLACKHAWK took place in October 2020. Since 2013, Royal Blackhawk has been organized annually by the French 1st Regiment of Artillery at Belfort. For about two weeks, aircraft and teams of air and ground support specialists, which enable the regiment's units to maintain their operational capabilities, are brought together. This time, more than 400 French, Belgian and British soldiers, engineers, artillery,

infantry and also combat helicopters of the French and United States Army participated in the exercise. The helicopters of the French Army 1st Combat Helicopter Regiment were able to fly alongside the different helicopters of the U. S. Army 12th Combat Aviation Brigade.

The teams of observers and the maneuver troops participated in their specific roles: Air assault, MEDEVAC, Close Combat Attack, Close Air Support

via JTACs (Joint Terminal Attack Controllers), and Forward Air Traffic Controllers. For the French Army, it was also an opportunity to train with their allies according to standard NATO procedures used in operations. This exercise is well established in its region with training phases in the area between Belfort, Besancon and Valdahon.

The 1st Combat Helicopter Regiment participated with two NH90 *Caïman* and two EC665 *Tiger* helicopters.

Besides the helicopters of the French Army, also the French Air Force participated in this exercise with Dassault Mirage 2000Ds from BA133 Nancy and Dassault Rafales from BA113 Saint-Dizier. The French Navy sent an ATL2 from the 21F Flotille based at BAN Lorient/Lann-Bihoué to Royal Blackhawk. The U. S. Army in Europe participated with four AH-64D *Apaches*, two UH-60M *Blackhawks* and two CH-47F *Chinooks* of its 12th Combat Aviation Brigade. The

U.S. Army CH-47F *Chinook* of the 12th Combat Aviation Brigade, based at Ansbach in Germany.



Other than the French NH90 *Caiman*, the CH-47 *Chinook* is able to transport a 120 mm mortar including 15 soldiers and protective elements. Just off-loaded from the *Chinook*, the mortar fires its first round.



Apaches and *Chinooks* are based at Ansbach Army Airfield in Germany, and the *Blackhawks* are based at Wiesbaden Army Airfield, also in Germany. On Wednesday, 14 October, the Citadel of Belfort was taken by soldiers, although this was an exercise in a civilian setting with ground troops and helicopters. However, it was a challenge to integrate the objectives of the strategic visions of the Chief of the French Army (CEMAT) on high intensity warfare. The capture of a village on the 21st of October was, moreover, carried out with a favorable ratio of 3 to 1 in terms of manpower, but it is the trend that counts: edition after edition, realism increases. This is the interest of the 1st RA, whose major equipment is the rocket launcher unit (LRU). The LRU with its capability of striking at a

distance of 80 km regardless of weather conditions, is one of the key elements for excellence in high-intensity operations. The U.S. Army's helicopters are more self-protected than the French helicopters and have a much better passenger carrying capacity with the CH-47 *Chinook* than the French with the NH90 *Caiman*. During the exercise, one of the CH-47s also demonstrated its capability to transport a 120 mm mortar including 15 soldiers and protective elements. The *Caiman* still cannot do this as its floor is too weak. A study is carried out on how to reinforce the structure. The artillerymen of the 1st RA know that their LRU will take its time, even if, as a remnant of the Cold War, there were few operational uses: in the Sahel, with only about ten rockets fired. Nevertheless, the regiment keeps





personnel in the Sahel for the protection of the Forward Operating Bases, and in Lebanon, for the counter-battery radar Cobra.

Major Antonides, U. S. Army, flies the AH-64D Apache with the 12th CAB and has about 1,600 flight hours on the AH-64D Apache, which has been in service within the U.S. Army since 2008. Major Antonides explained that the main task was to support the NATO allies and help them to facilitate some of their training. "We did that through interoperability training, speaking with the JTACs from the UK, Belgium and France. It's really great for us to talk to someone on the ground and just work on those skills especially with our NATO allies", he adds.

The AH-64D Apaches brought the third dimension to this exercise. The Artillery Regiment normally works on the ground only, and they know that they are good at working together with the other ground forces. Now, they had a third element in the air. Major Antonides: "Of course they can fire their artillery, but with the Apaches in the air, we can add extra firepower to the scenario, and we can also add some complexity in their training. And, they have to think about

another assets out there." Capt. Guillaume of the 1st RA talked about the future plans of the exercise: "For next year, I would like to improve a little bit. For me, the improvement would be the participation of the French Reaper UAV drone. This year, they were not able to participate in Royal Blackhawk, but I really hope that they will be available in 2021."

The author would like to thank Press Officer Gabriel, Major Antonides, Capt. Guillaume and the crews of the 12th Combat Aviation Brigade and the 1er RHC for their hospitality and all their help for making this report possible.

NH90 *Caiman* of the 1st Combat Helicopter Regiment (1er Régiment d'Hélicoptères de Combat - 1er RHC), based at Quartier La Horie (Phalsbourg).





Top and above right: U.S. Army AH-64D Apache of the 12th Combat Aviation Brigade, based at Ansbach Airfield in Germany, and **above left** an UH-60M Blackhawk, based at Wiesbaden Airfield in Germany.



U.S. Army CH-47F *Chinook* of the 12th Combat Aviation Brigade, based at Ansbach in Germany.



SPOTTED AT WITTMUND AB



TEXT BY RALF PETR WALTER AND PHOTOS BY
RALF JAHNKE AND PETER THIVESSEN



Wittmund Air Base is a military air base of the Deutsche Luftwaffe (German Air Force – GAF). It is located in the state of Niedersachsen in the northern part of Germany (53° 32' 52" N, 7° 40' 2" E).

Wittmund AB is home to the Taktisches Luftwaffengeschwader 71 "Richthofen" (TaktLwG 71 "R") which flies the EF2000 Eurofighter and to Top

Aces, a Canadian Company that provides air combat training with their Douglas A-4N Skyhawks and Dornier Alpha Jets.

The TaktLwG 71 "R" operates about 28 EF2000 and is tasked with 24/7 air policing (QRA – Quick Reaction Alert) to secure the airspace over northern Germany.





Two Eurofighter single-seaters just about to enter the runway.



These two Eurofighters are sitting on the runway waiting for their takeoff clearance.





EF2000 "Baron Spirit"

To celebrate the 60th anniversary of the Taktisches Luftwaffengeschwader 71 "Richthofen" (TaktLwG 71), the Eurofighter 30+25 received this "Baron Spirit" special livery in June 2019.



The four colors used in this design can be found in the Fokker Dr. I triplane of German WW I flying ace Manfred Freiherr von Richthofen, who also gave his name to the TaktLwG 71. On the fuselage, wing root and external tanks there are the silhouettes of the aircraft types that the unit has been having in service during its 60-year history: F-86 Sabre, F-104 Starfighter, F-4F Phantom II and EF2000. The portrait of Manfred Freiherr von Richthofen and his triplane are depicted on both sides of the vertical stabilizer. The slogan "The Spirit of Richthofen", also on the vertical stabilizer, is intended to emphasize the team spirit and commitment of the men and women of the wing. From this, together with the nickname "Red Baron" of the English for von Richthofen, the name "Baron Spirit" was created for this amazing color scheme.





TOP ACES



Top Aces A-4N Skyhawk with target tow pod installed under the uselage. This A-4N is an ex Israeli Defense Force Air Force 350.



Top Aces is a privately owned Canadian company, providing air combat training. Its pilots and aircraft have flown more than 90,000 hours of operational training in support of their customers all over the world.

The company has more than 280 employees with 40+ pilots. They are highly experienced, mostly former American, Canadian, and German armed forces fighter pilots. About 80% of them are graduates of the Top Gun Fighter Weapons School or experienced U.S. Air Force aggressor pilots.

Top Aces operates the Bombardier Learjet 35A, Douglas A-4N, Dornier Alpha Jet, and brand new, the Lockheed Martin F-16A.

Typical missions for the A-4N Skyhawk are:

- Day and night Joint Tactical Air Controller (JTAC) training; Weapons Delivery;
- Adversary Support and Anti-Shipping Attack Training for Naval Forces;
- "Red Air" Adversary Support for Fighter Forces, including large-scale coalition air exercises;
- Air-to-Air Gunnery Target Tow; both circular and combat dart missions for Fighter Forces;
- Electronic Warfare Training;
- Missile Simulation;
- (Radar) Profile Simulations;
- Night / NVG OPs;

Typical missions for the Alpha Jet are:

- Day and night Joint Tactical Air Controller (JTAC) training;
- Adversary Support and Anti-Shipping Attack Training for Naval Forces;
- "Red Air" Adversary Support for Fighter Forces, including large-scale coalition air exercises;
- Air-to-Air Gunnery Target Tow; both circular and combat dart missions for Fighter Forces;
- Electronic Warfare Training for Naval and Fighter Forces

Top Aces is the exclusive adversary air provider to the German armed forces. In Germany, they are based at

Wittmund AB and fly with the A-4N and the Alpha Jet.

In April 2021, they have been awarded the fast speed adversary air training services contract by the German Armed Forces effective 1.1.2022. Top Aces developed a proprietary Advanced Aggressor Mission System (AAMS) that allows for the use of state-of-the-art Active Electronically Scanned Array (AESA) radar and Infrared Search-and-Track (IRST) systems on a variety of aircraft types including Top Aces' A-4N and F-16. The AAMS allows its aircraft to simulate the most advanced capabilities of modern-day opponents in air-to-air combat. Flight testing and certification of the AAMS on Top Aces' A-4N Skyhawk have been completed, enabling the Company to begin delivering AAMS missions to Germany.



Top Aces A-4N Skyhawk

TOP ACES



Top Aces Alpha Jet A, ex German Air Force 40+69, returning to Wittmund AB.





▲ German Air Force Transall C-160D assigned to LTG 63.
▼ Learjet 35A of GFD GmbH.



German Air Force Transall C-160D assigned to LTG 63. ▲
German Air Force Tornado IDS(T) assigned to TaktLwG 51 "I". ▼





▲ German Navy NH90-NFH assigned to MFG 5.
▼ German Army NH90-TTH.



German Navy Super Lynx Mk88A assigned to MFG 5. ▲
German Army EC135T1 assigned to IntHubschrAusbZ. ▼



DUTCH HELOCASTING

REPORT AND IMAGES BY
DENNIS VAN DER WIEL
UNLESS STATED



Helocasting is a technique that is mainly practiced by Special Forces, such as the Dutch Corps Commando Troops (KCT), U.S. Army, and U.S. Marine Corps. A small commando unit is flown by helicopter to a maritime landing zone in or close to enemy territory. Upon arrival, the helicopter flies just above the water surface at an altitude of no more than 10 ft and an airspeed not exceeding 10 knots (19 km/h). The Special

Forces in swimming gear then jump into the water from the helicopter. Depending on the mission, a rigid hull inflatable boat (RHIB), commonly known as Zodiac or combat rubber raiding craft (CRRC), is dropped, too. These boats can be deployed fully inflated (hard duck) and ready to go, partially inflated (soft duck) and pumped up by the soldier as soon as they are in the water, or dropped not inflated at all (rolled duck).

When using CRRCs, these are dropped first and then, the Special Forces follow. Helocasting does not require any additional equipment such as parachutes or ropes. Once dropped into the water, the Special Forces soldier continues his infiltration via rubber boat or surface swim to shore – and then, conducts his mission.

Two members of the Dutch Corps Commando Troops (KCT) in swimming gear just jumped off a CH-47D *Chinook*.



Top & above left: A CH-47D *Chinook* just dropped a RHIB (rigid hull inflatable boat).
Top right: The Special Forces soldiers gather on the shore after jumping from the helicopter into the water.
Above right: The CH-47D *Chinook* is leaving the drop zone.



The Royal Netherlands Air Force's new CH-47F MYII CAAS was the first time used for helocast training on 7 June 2021.

HELOCASTING THE "AMERICAN WAY"



▲ U.S. Marines with 1st Force Reconnaissance Company, 1st Marine Expeditionary Force conduct a helocast exercise out of an UH-1Y *Venom* at Ferguson Lake, near Yuma, Arizona. **Photo:** USMC / SSgt. Artur Shvartsberg, MAWTS-1

▼ U.S. Navy SEALs conduct helocasting operations from a CH-47 *Chinook* helicopter assigned to the 25th Combat Aviation Brigade at Pearl Harbor, Hawaii. **Photo:** U.S. Army / 1st Lt. Ryan DeBooy



Green Berets of the 1st Special Forces Group (Airborne) jump into American Lake after the boat departs out the back of a CH-47 *Chinook* on JB Lewis-McChord, Washington. **Photo:** U.S. Army / Sgt. Codie Mendenhall

A member of USMC Force Reconnaissance Company, jumps from a CH-53E *Super Stallion* helicopter as part of helocast training during Exercise Iron Fist 2020 on MCB Camp Pendleton, California. **Photo:** U.S. Marine Corps / Cpl. David Luckey



EXERCISE ARIZONA DREAM

REPORT AND PHOTOGRAPHY BY JAN DE CLERCQ



Arizona Dream is an exercise to train personnel of the Belgian Air Force's 15th Transport Wing to transport equipment and people quickly and efficiently to any airfield or improvised landing zone where humanitarian aid or a military deployment is required.

However, originally planned as a multi-national exercise in Arizona, USA, the exercise was canceled

due to the COVID-19 pandemic. Given that the Belgian Air Force has only recently begun operating the A400M *Atlas*, it was decided that the 15th Wing would then conduct the exercise independently on a national scale. Still, the name "Arizona Dream" was kept.

The exercise took place from 22 March to 26 March. Koksijde AB, the home base of the Belgian NH90

NFH helicopters of the 40th Squadron, acted as DOB (Deployed Operating Base). On Friday, 19 March, the Luxembourg A400M *Atlas* with serial CT-01 arrived at Koksijde AB with all the equipment required to set up the DOB. On this day, there was also a press conference for the local media. Lieutenant Colonel Aviator Stéphane Roobroeck (Commander of Koksijde Air Base) welcomed everyone, and

Lieutenant Colonel Aviator Thomas Deberdt of the 15th Wing gave an introduction and briefing on the flight operations. Saturday was a non-flying day, used to set up, in particular, the IT network – the *Atlas* relies on a complex IT network with access to servers containing maintenance data – and communications infrastructure (voice, data) required for flight operations.

Luxembourg A400M *Atlas* with the registration CT-01 right after Landing at Koksijde AB, which is used as DOB (Deployed Operating Base) during the exercise.



Main image: The Luxembourg A400M *Atlas* CT-01 pulls up into a steep left turn after a low high-speed pass.
Inset top: CT-01 is returning to base.
Inset bottom: The Belgium Air Force A400M *Atlas* CT-02 right after takeoff.



On Monday, 22 March, the Atlas (serial CT-03) arrived at Koksijde AB for that day's missions and brought additional personnel. On its way to Koksijde AB, the crew made a couple of touch-and-go landings at Ostend airport as extra training. The mission ended in the late afternoon. The next day, CT-01 returned to Koksijde AB, bringing additional equipment. It was also used to test refueling with two twin hoses. On Wednesday, CT-03 left for a five-hour flight to Bordeaux, Marseille, Luxembourg, Cologne, and Liege. Thursday, there were two more flights: The first one was to Brussels and Ostend for several approaches, and the second flight was to present the aircraft's performance to the Belgian Air Component's Commander, General Major Dupont, and other Air Force officers.

such an exercise. "Arizona Dream 2021" was a complete success and provided numerous indications for improvements and optimization of procedures and processes for future A400M *Atlas* deployments. This was a valuable and important milestone for the men and women of the 15th Wing on their way to fully operational status with their new transporter, the A400M *Atlas*.

This was the first time that a Belgian/Luxembourg A400M *Atlas* participated in

The Luxembourg A400M *Atlas* CT-01 taxis after landing at Koksijde AB to its parking position.





Belgian Air Force A400M *Atlas* seconds from touching down on the runway at Koksijde AB.

PASSIONATE PEOPLE – RYAN RANKIN

From the Cockpit to the Workshop

By A. T. Roberts

Though it is a potentially overused aphorism to suggest that aviation is a lifestyle, passion, or any other axiom; certain people fortify this notion by exploring aviation in every outlet imaginable. For these possessed individuals, flying is not just a profession, hobby, or point of interest; it really is everything.

When examining the world of aviation fervor, a plethora of subcultures emerge: model makers, fence checkers, RC operators, air show attendees, kit builders, kite flyers, and the list goes on; there are even artists that specialize solely in aviation paintings. Then there are the professionals, those in the aviation trade; it's how they pay their bills. Airline pilots, mechanics, white-collar aerospace company employees, and aviation military personnel all bring home the bacon because of the modern world's need to put planes aloft.

One individual that has seamlessly managed to blur the lines of aviation as a profession and enthusiasm is Ryan Rankin. Though he has no ambition to make his name synonymous with flying, working aloft is in his blood (sorry, another cliché adage) and he has the professional bonafides to prove it: Naval Aviator, airline pilot, private aircraft owner, and now aviation businessman.



Ryan flying his biplane along the Gulf Coast

Though there's plenty of pilots that are more than happy to make a living doing what they love, certain individuals — in particular those with creative urges — have the need to employ their love of aviation beyond simply earning a paycheck. Ryan's way of injecting creativity into the world of aviation is, to say the least, rather high-brow.

The initial way in which he's accomplished this is through furniture making. Prior to flying combat flights off aircraft carriers, Ryan had a minor foray into the world of furniture dealing, specifically mid-century modern. Combining this keen eye for utilitarian style with his love for flying, Ryan started designing his own furniture; not just



Beautifully hand-crafted furniture salvaged from aviation boneyards

evoking aircraft, but made of them. Like all artists, the process of creating as well as the authenticity of the medium is equally as important as the finished product. Sourced 100% from aircraft

boneyard scavenging, the act of hunting for parts is one of Ryan's primary interests. "My excitement about what I do, and going to boneyards, is 90% about finding unique artifacts and aviation history, with the remaining 10% being looking for desktops and table legs", he says. This, as far as authenticity is concerned, is the most important aspect of Ryan's creative process. Sure, the end result needs to look good, but it goes beyond mere aesthetic. "To me", he adds, "the aircraft by design — as well as the physics behind them — is art in and of themselves. They are the inspiration". Ryan knows where these parts come from and, as he mentioned above, the history behind them... there's even a decent chance he's flown some of the types of aircraft he's salvaged parts from.

After years of flying in the Navy, flying his biplane around the Gulf Coast, and building unique pieces of aviation furniture; Ryan's aviation passion still wasn't fulfilled. That's why, in 2017, he embarked on an ambitious goal to fly 52 different aircraft in one year—one for each week. The project was called Ryan Flies and he flew "everything from seaplanes to helicopters". On the ambitions of the project, Ryan stated, "I filmed every flight, interviewed the aircraft owners, and really delved into the history of each individual aircraft". Though listing all 52 platforms would be too cumbersome, the project took him to Poland to fly Soviet-era aircraft, England where he piloted warbirds, and plenty more stateside; notably an OV-1 Mohawk, P-51 Mustang, and even a flying boat.

His latest venture is something more accessible to the average aviation enthusiast. "I want to share these physical pieces of aviation with those that love it as much as I do, but not everyone has the money, or room, for a wing desk or engine turbine coffee table". That's why he's launched Jet Eyes, an idea aimed at letting everyone take home a piece of their favorite aircraft. If Ryan discovers a segment of a beloved or truly unique plane —

something beyond restoration — he'll cut it up, beautifully stylize it, and make it available to anyone that wants to own a slice of that history.

"These parts are finite, so they're all limited runs", he emphasizes.



Jet-eyes keychains

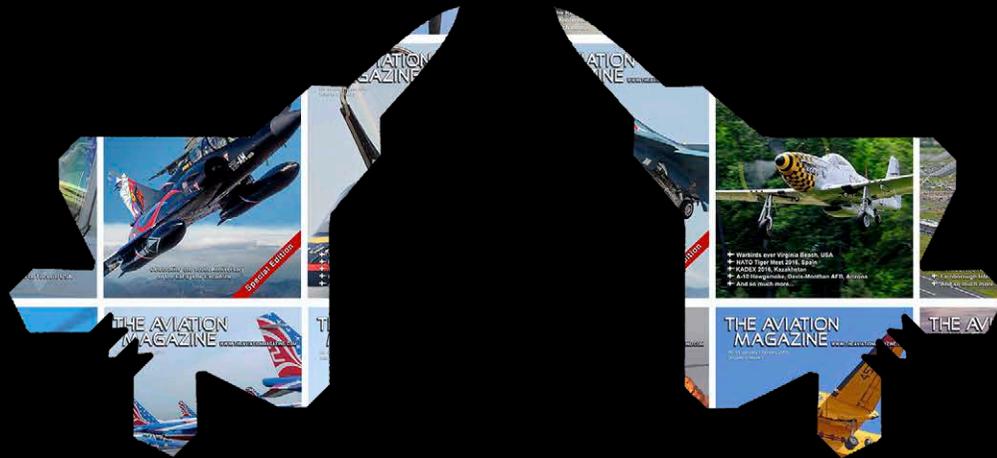
It's almost as if an entirely new subculture has been born; somehow combining the keen eye of an antique collector and picker, the knowledge of an historian, the technical skill of a craftsman, and creative process of an artist. "I sometimes refer to it as aviation archeology", jokes Ryan. Unfortunately, not every airframe hauled to a boneyard has the luxury of receiving a full restoration back to flying condition, museum piece, or roadside lawn ornament. Thankfully, projects like Ryan's manage to rescue truly fascinating pieces of aviation history from their dusty boneyard fates and share them with anyone who wants to own a piece of their favorite aircraft.

See Ryan's latest projects at:

www.jet-eyes.com

www.machmetal.com

www.facebook.com/jeteyes



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