

# THE AVIATION MAGAZINE

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Nº 85 July-August 2023  
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- ✈ **INIOCHOS 2023, Greece**
- ✈ **5th Army Aviation Regiment RIGEL, Italy**
- ✈ **Flashback - From NVA to Luftwaffe - Part 4, Germany**
- ✈ **Poland's Eastern Flank**
- ✈ **And so much more ...**



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Cover: NHIndustries UH-90A ETT of the Italian 5th Army Aviation Regiment 'RIGEL'. *Photo Salvatore Roccella*

This page: Italian Air Force Tornado ECR8 assigned to 155° Gruppo during exercise INIOCHOS 2023. *Photo Mathias Leischner*



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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.

Do you feel addressed and want to be part of our team? We would love to publish your work too, so feel free to shoot us an e-mail to [editor@TheAviationMagazine.com](mailto:editor@TheAviationMagazine.com). Please note that we do not accept any unsolicited articles or images for publication.

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## FROM THE EDITOR

Dear Readers,

Welcome to a new issue of THE AVIATION MAGAZINE. With the fourth part of our series, "From NVA to Luftwaffe", we conclude our look back at the German Democratic Republic's Air Force at the time of German reunification more than 30 years ago. One aircraft from this period, the MiG-29, is still in service with the Polish Air Force. The article "Poland's Eastern Flank" shows how Poland, together with modern aircraft from other Allies, is securing NATO's eastern flank. The report on the NATO Days at Ostrava provides an impressive overview of the variety of types of aircraft in service with NATO's air forces. The major, international exercise INIOCHOS in Greece, a visit to the 5° Reggimento AVES 'Rigel' of the Italian Army Aviation and events such as various anniversary celebrations complete this issue.

For the next issue, we have planned a first major report on Air Defender 23, Baltic Air Policing with F-16s of the Romanian and Portuguese air forces, the exercise ORION in France, and much more.

For now, download our new issue **HERE**, and we hope you enjoy reading it.

Ralf Peter WALTER  
Publisher & Editor

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# NATO DAYS OSTRAVA 2022

REPORT BY WOLFGANG JARISCH AND PETER THIVESSEN



This flying display became even more spectacular when the German Army Aviation NH-90 TTHr released a salvo of flares.





In 2022, the weather gods did not mean well again and shrouded the biggest security show in Europe under a dense blanket of clouds. But despite the weather situation, 110,000 visitors attended the show, perfectly organized as every year by the Jagello 2000 Association. The Jagello 2000 Association is the main Czech subject of public diplomacy in the field of

security policy and membership of the Czech Republic in the North Atlantic Treaty Organization, but it also participates in projects focused on the European Union. The main goal of the association is to raise awareness among the general and professional public about security policy and transatlantic relations. The motto of last year's event was: "Our security

*cannot be taken for granted and there is no prosperity without security.* Therefore, the event aims to present the wide spectrum of the resources and capabilities of the Czech Republic and its allies in the field of security provisioning to the general public", said Zbyněk Pavlačík, chairman of the Jagello 2000 Association. Given the security situation on NATO's eastern flank,

this was certainly the right motto, and above all, it is intended to convey confidence and security in the European area to the population.

Nineteen nations participated in the event under the NATO partnership, and just like every year, the





▲▼ Czech Air Force PZL W-3A Sokół assigned to 243.vrl.



Lithuanian Air Force Eurocopter AS365N3+ assigned to Sraigtasparniu Esk. ▲



last event also offered some highlights. One highlight was undoubtedly, from the clouds came no rain and so the visitors were able to see the vast majority of the planned dynamic demonstrations.

With Sweden and Finland promoting NATO accession, it was not surprising that both countries participated in the event. Saab showed the performance portfolio of the new JAS-39 *Gripen E*, and the Finnish Air Force demonstrated the McDonnell Douglas F/A-18C *Hornet* in a powerful flying display. There was also a very special NATO formation flypast, consisting of a Czech Air Force JAS-39 *Gripen C*, the Swedish JAS-39 *Gripen E*, the Belgian F-16MLU *Fighting Falcon*, and the Finnish F/A-18C *Hornet*. Again, the ambitions of the two non-NATO countries and NATO were evident.

Full jet power could also be marveled from the Austrian Eurofighter *Typhoon* and the Belgian General Dynamics F-16MLU *Fighting Falcon*. The Austrian Air Force brought the specially painted *Tiger* and the Belgian Air Component the specially painted *Dream Viper* to Ostrava.

Jet power was also demonstrated by the Czech and Hungarian Air Force. Both air forces conjured up a fantastic display in the sky with their JAS-39 *Gripen* Cs. Furthermore, Aero Vodochody presented the new L-39NG trainer.

Announced as a highlight was the flypast of the Dutch Air Force's 5th generation fighter, the Lockheed Martin F-35A *Lightning II*. Highlight, well, it was, for now, a slow fly-past that ended in a rocket-like climb, where the spectators could get an impression of the massive power of the engine.

Of course, an aerobatic team could not be missing, so the Patrouille Suisse gave its premiere in Ostrava and provided a great spectacle during its premiere performance, which was limited due to the weather conditions.

There was also no shortage of spectacular flying demonstrations by the helicopters. Besides the well-known flying displays of the Czech Air Force with their Mil Mi-24/35 *Hinds* and the incredibly agile W-3A *Sokol*, this year, also the Sikorsky UH-60M *Black Hawk* of the Slovak Air Force took part in the flying display. However, the German Army Aviation stole the show in the helicopter displays. The team "Heideflieger" with the NH-90 showed an indescribable display with many flares, which looked even more spectacular in the cloudy sky.

Also, an Airbus A400M *Atlas* of the German Air Force could be watched in the flying display, and the NATO was represented by an Airbus A330MRTT tanker in Saturday's opening flight.



On the ground, there was an extensive static display of aircraft and helicopters, in addition to dynamic ground displays from the host nation and partner nations such as Poland, Germany, and Jordan, only to name a few. The "big fishes" were brought to NATO Days by the U.S. Air Force. With a C-5M *Super Galaxy*, a C-17 *Globemaster III*, a KC-135R *Stratotanker* and a B-52H *Stratofortress* was plenty of "heavy metal" there. The C-5M brought to Ostrava an AH-1Z *Viper* and a UH-1Y *Venom* of the U.S. Marines, while an AH-64D *Apache* of the U.S. Army came from Germany for the static display.

Also, the German branches of the armed forces, such as Army Aviation, Air Force, and the German Navy, brought a lot of stuff to Ostrava. The German Navy brought a Westland *Sea Lynx* helicopter and a P-3C *Orion*, and the Army Aviation was there with three types of helicopters. The German contingent was rounded off with a Tornado and an A-400M *Atlas*.

South America premiered with the C-390 *Millennium* transport aircraft of the Brazilian company Embraer. Some orders from European air forces for this tactical transport aircraft have already been made.

And finally, we should take a look at some rarities. The Turkish Air Force sent two specially painted McDonnell Douglas F-4E 2020 *Terminators*, and the French Air

Force also sent a specially painted Dassault *Rafale* to Ostrava. The Royal Canadian Air Force was there with a CF-188 *Hornet*. The Baltic States were also represented. Lithuania sent an AS365N3+ *Dauphin* helicopter in SAR configuration and Latvia sent a modified Antonov AN-2 in pixel camouflage to the static display. This wonderful An-2 was the highlight for many photographers. In addition to an extensive static exhibition of the host nation, with many state institutions, we can look back on a successful event in 2022.

The author has to say thank you to Eliška Radváková and her team for the great support in 2022.

German Army Aviation Eurocopter EC135T1 of he Internationales Hubschrauberausbildungszentrum. ▶  
German Navy Super Lynx Mk88A of MFG 5. ▲  
U.S. Army AH-64D of the 1st Battalion, 3rd Aviation Regiment (Attack Battalion). ▼







▲ Slovak Air Force Syskorsky UH-60M *Black Hawk* assigned to 51. Kridlo Presov.  
▼ Czech Air Force Mi-171Sh *Hip* assigned to 222.vrl.



Czech Air Force Mi-35 *Hind* assigned to 221.vrl. ▲  
Hungarian Air Force Mi-24P *Hind* assigned to MH.86 HE. ▼







This EF2000 *Eurofighter* assigned to the Überwachungsgeschwader is ex-German Air Force 98+42. The special "Austrian Tigers" paint scheme was first seen in the public in early July 2022.

















Finnish Air Force F/A-18C of HäLLv31 engaging full afterburner after a low speed low-pass.





With the JAS39E, the Swedish aircraft manufacturer SAAB presented its latest variant of the *Gripen*.



Hungarian Air Force SAAB JAS39C *Gripen* of the MH 59. Sz.D. REB. (59th Tactical Fighter Wing).









The roll-out of the Belgian Air Force General Dynamics F-16AM *Fighting Falcon* Solo Display aircraft 'Dream Viper' was on 9 June 2022. The F-16AM with the standard gray color scheme serves as a backup in case the 'Dream Viper' is grounded due to technical problems.





French Air Force Dassault Rafale C with a stunning livery to commemorate the 80th anniversary of the Escadron de Chasse 2/30 Normandie-Niemen (Fighter Squadron 2/30 Normandie-Niemen).





**Main image and right inset:** Czech Air Force Aero L-159A *Albatros* of 212.tl.  
**Inset left:** Aero Vodochody's L-39NG is the latest version of the L-39 *Albatros*. In 2014, it was presented to the public for the first time at the Farnborough Airshow.





















U.S. Air Force Boeing C-5M *Super Galaxy* assigned to 68th AS (front) and Boeing C-17A *Globemaster III* assigned to 137th AS.





Above: Brazilian Air Force KC-390 of aircraft manufacturer EMBRAER.  
 Top left: U.S. Air Force Boeing KC-135R *Stratotanker* assigned to 173 AS.  
 Top right: Royal Netherlands Air Force Airbus 330-243MRTT assigned to MMU.





**Top:** L410 NG, a twin-engine 19-seat aircraft manufactured by Czech company Aircraft Industries (formerly Let Kunovice). It is an upgraded version of the Let L410 UVP-E20. The first flight was on 29 July 2015.  
**Above:** German Navy Lockheed PC-3 Orion of Marinefliegergeschwader 3.





▲▼ Czech Air Force Airbus A319-115X of 241.dlt.



German Air Force Global 6000 of FBS BMVg. ▲▼







1



2



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4



5

- 1 Fairchild-Swearingen SA.227BC Metro III operated by flightline.
- 2 Latvia Air Force Antonov An-2P of Transporta Posms.
- 3 Swiss Air Force Bombardier Challenger CL-604 of LTDB.
- 4 U.S. Air Force Beechcraft C-12D *Huron* of the U.S. Embassy Flight Budapest.
- 5 Polish Navy Antonov An-28TD of 43.BLotM.





▲ Czech Air Force CASA C295M assigned to 242.tsl.  
▼ Finnish Air Force CASA C295M assigned to TukiLLv.



Turkish Air Force C-130E *Hercules* assigned to 222 filo. ▲  
Boeing 767-281(BDSF) of cargo charter 'Sky Taxi'. ▼





# INIOCHOS 2023

TEXT: ISTVÁN KELECSÉNYI | PHOTOS: ISTVÁN KELECSÉNYI UNLESS STATED



The war between Russia and Ukraine has taken Europe back to the Cold War. In response to Russian aggression, NATO has deployed joint international combat units on the Alliance's eastern borders from the Baltic States to Bulgaria, increasing the combat capabilities of the countries on the eastern border. In addition, NATO countries have moved small and large air force units to bases in countries on the eastern border and used their airspace to improve their combat capabilities. US military heavy bombers and

NATO reconnaissance aircraft and drones are also conducting more patrols than before the war.

The capabilities of ground and air forces are being strengthened through joint exercises of international forces, which both raise the level of planning and execution of joint missions and operations and serve to practice various combat procedures against facilities of NATO countries with former Soviet and Russian assets.

One of the 2023 exercises is INIOCHOS 23 in Greece.

INIOCHOS is a two-week international exercise for air forces deployed at Andravida Air Base in Greece, using a large part of the Athens FIR (i.e. airspace suitable for live firing).

INIOCHOS was first organized in the late 1980s as a small-scale combat exercise adapted to the need for contemporary training for COMAO combined air operations, in accordance with the Greek Air Force doctrine. The success of the exercise in the following years led to the decision to hold it annually.

The objective of the exercise was to train technical and aircrew in the planning and execution of Combined Air Operations (COMAO) in a realistic environment in accordance with Greek Air Force doctrine and to test and evaluate the operational concepts and combat elements.

For the exercise, the Greek Air Force Fighter Squadron School was sent to Larissa to develop the planning in the facilities of the National Air Operations Centre. The participating aircraft were transferred to Larissa

Indian Air Force Su-30 MKI-3 assigned to 222 Squadron taxis to the runway.





AB, from where they took off for their missions. In 2005, the exercise was reorganised from the participating aircraft's own bases and planning was carried out at the Flying Training Centre and Fighter Flying School facilities at Andravida AB. From 2013, the exercise has been expanded and the locations changed to create a more realistic environment with an intense and prolonged 24-hour

combat rhythm and to significantly improve the quality of the training. INIOCHOS was first held as an INVITEX (Invitational Training Exercise) in April 2015, with the participation of the Israeli Air Force and U.S. Air Force (USAF) Special Operations Forces (SOF) forward air controllers (J-TAC). In the following years, the list of participating

countries was expanded to include the U.S. Air Force, U.S. Navy and U.S. Marine Corps air forces in addition to Italian, British, Spanish, French and Croatian air forces. Of non-NATO countries, Cyprus, Israel, the United Arab Emirates, Saudi Arabia and India were among the participants.

#### **Main objectives of INIOCHOS**

The objective of this exercise is to provide **realistic**

training, which is achieved by creating a realistic combat environment. The INIOCHOS exercises are conducted in an intense combat rhythm with daily engagements of up to 3-4 live firing exercises every day for two weeks. The evaluation is carried out using tracking and evaluation systems, sensors and special software installed on board the aircraft, as well as ground and sea-based tracking and evaluation systems, with the assistance of experienced









instructors from the Greek Fighter School. INIOCHOS 2023 was held from 18 April to 7 May. The participants moved to Andravida AB between 18 and 23 April. The exercise was conducted from 24 April to 4 May. Following the exercise, from 5 to 7 May, the participants flew back to their home airfields and the foreign air forces flew back to their home bases between 5 and 7 May.

The planning, execution and debriefing of all missions is overseen by the Hellenic Air Force Fighter Weapons School (HAF FWS) to ensure the highest standards. The missions cover the full range of air operations conducted by the HAF, such as:

- Offensive Counter Air Operations (OCA)
- Defensive Counter Air Operations (DCA)
- Strategic Air Operations

- Air Power Contribution to Counter-Land Operations (APCLO)
- Air Power Contribution to Maritime Operations (APCMO)
- RECCE
- Combat Search and Rescue (CSAR)
- Time Sensitive Target (TST)

- High Value Airborne Asset (HVAA)

During Iniochos 2023, the F-16 Tactical Simulators of the newly established HAF's Synthetic Training Squadron will be used for a number of missions, expanding Iniochos to the virtual world. Iniochos 2023 will involve a large number of HAF assets, such as fighters, including the recently





Italian Air Force Tornado ECR MLU RET8 assigned to 155° Gruppo ETS, loaded with an AGM 88 HARM (High-Speed Anti-Radiation Missile) used for Suppression of Enemy Air Defenses (SEAD) against enemy radars.



acquired RAFALE, Air Defence Systems, helicopters, transport and training aircraft.

Additionally, Hellenic Army, Navy and Special Operations assets and personnel will contribute significantly to the creation of complex and realistic scenarios across the exercise areas which spread over the Greek mainland and seas.

Furthermore, in Iniochos 2023 will participate with air assets:

- Cyprus with an AW139 Helicopter
- France with Rafales
- India with Su-30
- Italy with Tornados
- Jordan with F-16s
- Saudi Arabia with F-15s
- Slovenia with PC-9s
- Spain with EF-18s
- USA with F-16s and MQ-9s

Additionally, Austria participated with INTEL personnel and Canada with Air Battle Managers.

The significant regional impact of INIOCHOS 2023 has prompted the interest of a number of Nations which have declared the intention to participate with observers, such as Bahrain, Germany, Montenegro, Morocco, Slovakia and Tunisia.

The ones everyone was waiting for were the Indian Air Force's Sukhoi aircraft. In the Russian-Ukrainian war, the relative underperformance of the Russian Air Force or not, the Su-30MKI aircraft were the stars of the exercise. Four of the two-seat fighter-bombers flew over to Greece, escorted by two C-17 transport



have about 900 of these available.

There is also no technical obstacle to integrating longer-range R-37 missiles, although the Russians might not be able to deliver them in the current war situation.

The Indian Air Force has 261 Su-30MKI aircraft in service, some of which are domestically produced under licence, but many of which contain imported Russian components.

The F-15SA fighter-bombers of the 92nd Squadron of the Royal Saudi Air Force have a similar mission to the Russian Su-30MKIs. The desert kingdom deployed six U.S.-built F-15 Strike Eagle fighter jets of the 92nd Squadron at King Abdulaziz AB in the Al-Dhahran for the exercise

The two-seat Saudi aircraft are modified and modernized F-15E Strike Eagles. The Saudi Air Force has a total of 207 F-15SAs in service, some of which are conversions of older „S“ versions.

The Royal Jordanian Air Force's (Arabic: Al Quwwat al Jawwiya al Malakiya al Urduniya) F-16AMs and F-16BMs came from Muwaffaq Salti AB, where three squadrons operate this type of aircraft, some of which are former Dutch, Belgian or American fighter-bombers. Today, the 1st Squadron has 26, the 2nd Squadron 15, and the 6th Squadron has ten of these F-16s, which are the Block20 variant after the MLU modernization.

The Italian Air Force participated with Tornado A-200 IDS and ECR aircraft assigned to 6° Stormo. The Italians carry AGM-88 HARM anti-radar missiles on their A-200 ECR aircraft. These are not factory variants, but Italy originally did not order Tornados



aircraft. The Sukhoi were of the 222nd Tigershark Squadron. The squadron has naval strike capability and is based in southern India, the first unit to be equipped with the air-launched Russian-Indian BrahMos cruise missile.

The Indian Air Force maintains the Su-30MKI aircraft in service as primary air superiority fighters with secondary strike capability. This is interesting in the light of the fact that they also have Dassault Mirage 2000I/TI 50 aircraft and 36 Rafale DH/EH aircraft coming into the country.

The Su-30MKIs are aerodynamically excellent aircraft, but they lack low-sensing capability, which is a serious drawback, adding that their R-77 missiles do not have the range of the AIM-120B missiles. They



Italian Air Force Tornado ECRs with afterburners engaged and wings fully swept forward for take-off.





specifically for electronic warfare, but later converted about 18 for this role, with the type designation ECR EA-200. The F-35A *Lightning II* aircraft have already been added to the 6th Stormo's inventory, so the Tornado fighters are expected to be decommissioned in a few years.

The C.15 fighter-bombers (Spanish designation for the F/A-18+ types) of the Spanish Air and Space Force (Ejército del Aire y del Espacio is the new name of the Spanish Air Force) belong to the 46th Wing. The 46th is based at Gando AB on the Canary Islands. Interestingly, the 462nd Squadron has 20 ex-U.S. Navy Hornets, which have not received the bulk of the modernization that the other Spanish F-18A+s based on the mainland have received. The Tenerife Hornets are primarily fighters, with the usual AIM-9 Sidewinder and AIM-120 combination. The Hornets on the Spanish peninsula are equipped with IRIST-T missiles. The Hornets flew with a 1,250 liter fuel pod. This is the only type of fuel tank that has been systematically installed on the type. Between and below the two engines, is the tail hook, which would allow it to be used on U.S. and French carriers, but Spanish carriers are too small for this; they have AV-8 Matador II aircraft as a regular, but there are

also plans for the F-35B as a replacement. As of 2021, according to some sources, only 72 EF-18/F/A-18Cs and 12 EF-18BM two-seaters are in service. The two-seat aircraft was given the designation CE.15 in Spain.

The French Air and Space Forces EC02.30 and EC03.30 based at BA118 Mont-De-Marsan participated in INIOCHOS 23 with Rafale C fighter-bombers. The first unit bears the name of the French Normandy-Niemen fighter regiment formed at the Eastern Front during the Second World War, the second is the Free French unit formed in Lorraine in 1944.

The Slovenian Air Force PC-9M propeller-driven aircraft took also part in the exercise. This aircraft, manufactured by the Swiss company Pilatus, is capable of both strike and reconnaissance missions. Although the PC-9 can use the AIM-9 Sidewinder air-to-air missiles, these were not procured by Slovenia.

The Slovenian PC-9M aircraft have been named "Hudournik" in their country. Since their entry into service, five of the them were lost, leaving nine PC-9Ms currently in service. The air policing tasks, requiring supersonic aircraft, are carried out in peacetime by the Hungarian and Italian Air Forces from bases in Kecskemét and Istrana respectively.

The host Greek Air Force flew mostly with 335, 337, 340, 341, and 347 Mira (Squadron) F-16C and D aircraft, Squadrons flying the F-16 fighter-bomber: 116 Wing, 335 Mira and 336 Mira at Araxos AB – 110 Wing, 337 Mira at Larissa AB – 115 Wing, 340 Mira and 343 Mira at Souda Bay AB – 111 Wing, 330 Mira, 341. Mira and 347 Mira at Nea Aghilaos AB.

The 332 Mira also flew four Dassault Rafale EG (R3F) aircraft from Tanagra AB and the 338 Mira reinforced

the exercise with four F-4E Phantom II fighter-bombers from Andravida AB (registration numbers 01503, 01522, 01530, 71756)

On the 26 April spotter day, a Beech Texan II training aircraft made a few circles over Andravida AB in the morning hours, and at the end of the day, a Soccata TBM-700 light transport aircraft of the French Air and Space Forces landed at the base.

For the preparation of this report, thanks to the Military Attaché of the Hungarian Embassy in Athens. Mr. Attasé has already assisted our work in Greece on several occasions.





Photo Udo Leischner

**Inset left:** Italian Air Force Tornado IDS MLU assigned to GEA 6° Stormo.  
**Inset right:** Italian Air Force Tornado IDS MLU RET8 assigned to GEA 6° Stormo.  
**Main image:** Italian Air Force Tornado ECR MLU RET8 assigned to 155° Gruppo. ETS.





Saudi Arabian Air Force F-15SA *Eagle* assigned to 92 Squadron.





Saudi Arabian Air Force F-15SA *Eagle* assigned to 92 Squadron carrying a center line mounted LANTIRN navigation pod and a left wing mounted SNIPER targeting pod.





Saudi Arabian Air Force F-15SA *Eagle* assigned to 92 Squadron engages its speed brake to decelerate the aircraft after landing on the runway.



Saudi Arabian Air Force F-15SA *Eagle* assigned to 92 Squadron on the taxiway heading to the End of Runway for take-off.





Saudi Arabian Air Force F-15SA *Eagle* assigned to 92 Squadron.





Royal Jordanian Air Force F-16AM assigned to 2 Squadron painted with a color scheme similar to "Have Glass V". This aircraft is ex-Royal Netherlands Air Force J-510.





Royal Jordanian Air Force F-16BM.



Hellenic Air Force F-16D Block 52 *Fighting Falcon* assigned to 337 Mira.

Photo Mathias Leischner





Photo Udo Leischner



Top: Hellenic Air Force F-16C Block 52 assigned to 340 Mira.  
 Above left: Hellenic Air Force F-16C Block 52 assigned to 337 Mira.  
 Above right: Hellenic Air Force F-16C Block 52 assigned to 335 Mira.





Top left: Hellenic Air Force F-16C Block 52T assigned to 341 Mira.  
 Top right: Hellenic Air Force F-16C Block 52U assigned to 347 Mira.  
 Above: Hellenic Air Force F-16C Block 52R assigned to 341 Mira.









A Spanish Air Force F/A-18A+ *Hornet* assigned to Ala 48, 462 Esc is taking off while an Italian Air Force Tornado taxis to the runway.





Spanish Air Force F/A-18A+ *Hornets* assigned to Ala 48, 462 Esc. Good to see is the false cockpit canopy painted on the underside of the *Hornet* so a pilot might be confused in the heat of combat and mistake the bottom of the aircraft for its top.





Spanish Air Force F/A-18A+ *Hornet* assigned to Ala 48, 462 Esc.









French Air Force Rafale C assigned to Escadron de Chasse 02.030 *Normandie-Niemen*.

Photo Udo Leischner



French Air Force  
Rafale C assigned  
to Escadron de  
Chasse 03.030  
Lorraine.



Photo Udo Leischner



The Hellenic Air  
Force received the  
first of six second  
hand Rafale EGs  
in January 2022.  
The aircraft are  
assigned to the  
114 Combat Wing's  
332 MPK (All-  
Weather Squadron)  
at Tanagra AB.





The Hellenic Air Force acquired a mix of second hand, ex-French Air Force and newly built Rafales. This Rafale flew with the French Air Force, registered as 111. Its serial number is 075.





Hellenic Air Force Rafales. These aircraft are newly built and assigned to 332 MPK.





The Indian Air Force Sukhoi Su-30MKI *Flanker-H* is the export version of the Russian Sukhoi Su-30, jointly developed with the Indian aircraft manufacturer HAL (Hindustan Aeronautics India) for the Indian Air Force. 'MKI' stands for 'Modernizirovannyi Kommercheskiy Indiski - Modernized Commercial Indian'. Its multinational avionics suite is sourced from France, India, Israel and Russia. The Su-30MKI also features canards and thrust vector control (up to 15° in both lateral and vertical direction).









The Sukhoi Su-30MKI *Flanker-H* is a all-weather, long-range multirole air superiority fighter aircraft. It is used in the air-to-air role with guided air-to-air missiles as well as in the air-to-ground role with a wide range of guided and unguided ammunitions to attack targets on the ground.







Top left: Hellenic Air Force T-6A *Texan II* assigned to 361 MEA.  
 Top right: Slovenian Air Force PC-9M assigned to 152. LEESK.  
 Above: French Air Force TBM-700A assigned to ET00.041.



# 5<sup>TH</sup> ARMY AVIATION REGIMENT *RIGEL*

ARTICLE BY SALVATORE ROCCELLA  
AND ALESSANDRO GANEO



This NHIndustries UH-90A ETT is equipped with the TM-197B 20 mm three-barreled electric Gatling-type rotary cannon.





On 1 January 1976, the 5° Reggimento Aviazione dell'Esercito 'Rigel' (5° Reggimento AVES 'Rigel') was established at Casarsa della Delizia AB from the merger of the V REUG (5th Reparto Elicotteri ad Uso Generale) operating the AB-204B and AB-205 helicopters at Casarsa della Delizia AB, and the V RAL (5th Reparto Aviazione Leggera) with Cessna L-19 fixed-wing aircraft and AB-206 helicopters at Vittorio Veneto AB. The command structure was:

- Group Command at Casarsa della Delizia AB;
- Command and Services Squadron at the Casarsa della Delizia AB headquarters;
- 25th ALE "CIGNO" Squadron Group based in Vittorio Veneto AB;
- 55th Multirole Helicopter Squadron Group *Dragone* the headquarters of Casarsa della Delizia AB.

In the same year, it received the 'War Flag' and in 1978, the heraldic coat of arms was granted. Between 1991 and 1993, the original name was changed to 5th Light Aviation Regiment of the Army *Rigel* and, later, to 5th AVES Regiment *Rigel*. Since 1998, *Rigel* is based at Casarsa della Delizia AB. Before, they were based at Gabelli AB in Campofornido and G. Vassura AB in Rimini.

In 1997, the regiment was transferred from the V Army Corps to the Army Aviation Inspectorate and on 5 May 2000 to the newly created *Friuli* Aviation Brigade.

#### Why *Rigel*?

In 1976, the Italian Army underwent a major reorganization, in which the Light Army Aviation was also involved, as part of a reorganization and strengthening. At the same time, it was decided to

name the aviation regiments after a star of the first magnitude and the subordinate aviation groups after a constellation or a planet. For the 5th Light Aviation Regiment, the star 'Rigel' was chosen, a star in the constellation of Orion, a mythological hero who fights against Taurus. It is made up of a large number of stars that are easily visible and identifiable by the alignment of three of these stars that form the belt. 'Rigel' is the left foot of this mythological figure and is considered a giant blue star, the brightest of the whole constellation (50,000 times brighter than our Sun). The motto chosen is "Il Mio Spirit Atôr Tî Svole" (My Spirit Floats Around You), a phrase from "Stelutis Alpinis", written and composed by Arturo Zardini during WWI. It is the only motto of an Italian Army unit in Friulian and expresses its affiliation to Army Aviation, its passion for flying, and its attachment to the land where it is based.

On 25 January, the authors had the opportunity to experience a Personnel Recovery mission together with the 5th *Rigel* as part of the "Rudis Trium" preparation exercise. Two UH-90A ETT and two AH-129D helicopters took off from the "Francesco Baracca". These two assets, mutually belonging to the 27° Gruppo Squadroni *Mercurio* and 49° Gruppo Squadroni *Capricorno*, constitute the present and the future of the Regiment.

#### AH-129D *Mangusta* EES (Exploration and Escort Helicopter)

In 2014, Task Force 'Phoenix' of the 5th *Rigel* began testing the AH-129D to replace the AW-129CBT (combat configuration). The "Delta" variant is equipped with Rafael Spike-ER missiles, which replaced the wire-guided TOW, and also features integration between the TOPLITE OTSWS (Observation, Targeting, and



Spike Weapon System) and the 20mm cannon, giving it significantly better target acquisition capabilities than the previous AH-129CBT version. The AH-129D has the Saab HeliTOW unit replaced by the Israeli Rafael TOPLITE III optronic turret. The new optical system has an operational range of 20 km, while the Spike-ER missiles have a range of 8 km.

The main missions of the 'Mangusta' are:

- Air Interdiction (also in SEAD role through the use of Spike ER missiles);
- CAS (Close Air Support) and CCA (Close Combat Attack) for close support to ground troops;
- Recce (Reconnaissance);
- Tactical Security (security at the sides of a unit deployed on the ground);
- Escort (air or ground armed escort).

The AH-129D is also part of the 'package' involved in other tactical tasks such as Air Assault. The latter is the main task of the 'Brigata Aeromobile Friuli' and consists of the collaboration between the various air and ground assets to engage in combat from the air and then, continue by land.

#### **UH-90 ETT MR1 (Tactical Transport Helicopter)**

On 24 June 2017, the 5th AVES Regiment Rigel received the first UH-90A to gradually replace the UH-205A.

The TTH (Tactical Transport Helicopter) variant of the Italian Army, updated to the HOGE MR1 version with avionics and software upgrades, is designed to ensure high maneuverability and survivability in low altitude operations.

The UH-90A has a speed of 140 knots and an endurance of 3 hours and 30 minutes. It can be easily and quickly set up according to the missions. It is optimized for multiple missions, including

- Tactical transport – it can carry up to 20 equipped soldiers;
- Material transport for a maximum take-off weight of 10,600 kg;
- Special operations;
- SAR and CSAR;
- MEDEVAC – with up to 12 NATO-style stretchers;
- Counter-terrorism;
- Command and control (C2);
- VIP transport;
- And natural disaster relief.

The TTH version guarantees low acoustic, radar and infrared traceability, and is equipped with a night vision system – Forward Looking Infrared (FLIR), night vision goggles (NVG), and displays integrated







The *Mangusta* was developed as an anti-tank helicopter armed with TOW wire-guide missiles, 81mm rockets and 12.7 mm machine guns mounted under the stub wings. The current version, as flown by the AVES units of the 5th 'RIGEL' Regiment in Casarsa della Delizia and the 7th 'VEGA' Regiment in Rimini, is equipped with TOP LITE Observation and Targeting System (OTS) in conjunction the third-generation missile system SPIKE.



into the helmet. Other equipment includes weather radar, digital maps, collision avoidance systems, armored pilot seats, and countermeasures. The helicopter can also count on advanced navigation systems (thanks to a Weather Radar WXR), self-protection systems (EWS system), and an emergency locator system. It also has a very good ballistic protection thanks to the armor present on the floor, among the various pieces of equipment it can be armed with an M-34 Dillon system consisting of two swinging machine guns.

In summary, the Regiment's mission is to support, with its assets, AH129D and UH-90, airborne and aero-mechanized operations both in Italy and in operating theaters abroad and to give continuity to its operational roles through training activities. It contributes to the PIAN National Air Emergency Service for the fulfillment of missions of an operational nature and public utility on the national territory such as the search for missing persons in the plains or in the mountains, aerial firefighting, transport of organs, emergency medical transport, aid for the traumatized, and intervention for natural disasters.

#### INTERNATIONAL MISSIONS

The Italian Army operates with the awareness that



military operations contribute to and stimulate the growth of the country but, above all, promote awareness of the importance for Italy of assuming roles of ever greater responsibility also in the international arena. The precious skills of the Regiment and the professionalism of its crews have always been required when the Armed Forces crossed national borders, and this since the UNIFIL mission in Lebanon opened in 1979 and is still ongoing.

In recent years, *Rigel* has always supported all the international commitments to which it has been called: men, machines, and materials have been employed in all the nations where the country has decided to bring its own help with its military.

The missions that saw the presence of the 5th *Rigel* are the following:

- 1979 Lebanon "UNIFIL" (in progress)
- 1989 Namibia UNTAG "HELITALY"
- 1991 Kurdistan "HERON"
- 1991 Ex-Yugoslavia "MONITOR MISSION" (shooting down of an AB-205 by a MIG-21)
- 1992 Somalia "IBIS 2" (Baptism of fire for









Mangusta during Check Point Pasta)

- 1993 Mozambique ONUMOZ "ALBATROS"
- 1995 Somalia "IBIS 3"
- 1998 Bosnia "CONSTANT FORCE"
- 1998 Macedonia "JOINT GUARANTOR"
- 1999-2010 Albania-Kosovo "JOINT GUARDIAN" and "JOINT ENTERPRISE"
- 2006 Iraq "ANCIENT BABYLON"
- 2007-2014 Afghanistan ISAF "International Security Assistance Force"
- 2015 Afghanistan RS "Resolute Support"
- 2016 Iraq Operation "PRIMA PARTHICA" (in progress)
- The latter, which began as a Personnel Recovery mission (UH90 and AH-129, aircraft infantry platoon), then continued as Air Mobility (UH90 only) in favor of the coalition.

#### TOWARDS THE FUTURE WITH THE AH-249

Rigel, and specifically the 49° Gruppo Squadroni *Capricorno*, will be the first Regiment to receive the new Leonardo AW249 attack and reconnaissance helicopter which is currently in the testing phase. It

made its first flight on 12 August 2022 at Leonardo's Vergiate plant.

The new helicopter, with which AVES will be equipped, exploits the technologies developed for the AW149 medium helicopter and will be characterized by

cutting-edge technological systems and will benefit from Leonardo's design leadership. The software of the AW249 will take advantage of an open architecture that will guarantee the integration of new equipment during its operational life; new and more efficient communication systems will ensure interoperability with other army platforms.

The new attack and reconnaissance helicopter will use next-generation mission systems that will significantly increase external situational awareness while reducing the workload of the two pilots for the benefit of safety. The helicopter will comply with the strictest certification requirements and will guarantee remarkable survivability thanks to the new ballistic materials that will protect the cockpit; moreover, it will be equipped with an advanced protection system and low radar and IR detectability.

The aircraft will have a maximum take-off weight of



approximately 8 tons and will be able to carry out close air support and escort missions while ensuring high levels of safety for the crew during missions in hostile environments. The use of two powerful state-of-the-art engines will allow it to operate in all environmental and climatic conditions. The AW249 will be armed with a 20 mm machine gun with rotating barrels derived from the one supplied with the AW129 *Mangusta* and will be equipped with a wide range of Econ rockets and the reliable Israeli-designed SPIKE anti-tank missiles.

Some features of the new helicopter are:

- Mission systems to allow control of UAVs in flight;
- High speed and range for escorting multi-purpose helicopters;
- Lower operating costs than previous generation helicopters;
- High tolerance to damage (eg redundancy of systems, crashworthiness, the ability of the transmission to continue operating after the loss of lubricating oil, etc.);
- Six wing stations for air-to-ground, air-to-air SPIKE missiles, unguided/guided rockets, and supplemental fuel tanks.

- Armament:
  - One TM-197B 20mm three-barreled cannon;
  - Ballistic and laser-guided rockets with the possibility of locking on the target both before and after launch (of the APKWS - Advanced Precision Kill Weapon System type);
  - Air-to-Ground missiles (Spike ER, LR I, LR II mounted on four pylons for a total of 16 missiles);
  - Air-to-Air missiles (Stinger Block I and Block II and Sidewinder);

The Italian attack helicopter designed by Leonardo is the replacement of the AW129 *Mangusta*, in the past identified with the acronym AH-249 which derives from "Attack Helicopter"; currently it is identified with the acronym AW from Agusta Westland, the previous name of Leonardo's Helicopter Division.

The end of the development program is scheduled for 2025, with the delivery of 45 helicopters by 2035.







Two UH-90As parked inside an inflatable hangar that the Italian army uses in operational theaters such as Afghanistan.





**Main image:** In the warm evening light of a beautiful sunset, four UH-90As stand on the flight line at Casarsa della Delizia.  
**Insets:** UH-90A taking off into the sunset for a night training mission.









**Main image:** A door-gunner's view at an UH-90As and an A-129D during a sunset sortie.  
**Inset:** UH-90A waiting for its take-off clearance.



# FROM NVA TO LUFTWAFFE

## PART 4 MIG-23 | AERO L-39 AND L-29 | LIM-5

TEXT: RALF PETER WALTER | PHOTOS: RALF JAHNKE UNLESS STATED



### MiG-23 Flogger

The NVA operated 78 MiG-23 *Floggers* between 1978 and 1990 of which a total of 63 *Floggers* in four different versions were transferred to The Luftwaffe (German Air Force).

MiG-23 variants in Luftwaffe's assets were:

- 9 x MiG-23MF All-weather interceptor fighter
- 8 x MiG-23UB Two-seat conversion-/ fighter trainer
- 28 x MiG-23ML Multi-role all-weather tactical fighter and interceptor
- 18 x MiG-23BN Close air support and counterair fighter

The MiG-23 *Flogger* never entered active service in the Luftwaffe.

Three 'BN' (697, 702, 712) were transferred to the Wehrtechnische Dienststelle für Luftfahrzeuge und Luftfahrtgerät der Bundeswehr WTD 61 (Bundeswehr Technical Center for Aircraft and Aeronautical Equipment, two (692, 715) to the USA, and one (697) from WTD 61 to the RAE Farnborough, UK.

Eleven 'ML' (338, 339, 345, 350, 353, 471, 475, 551, 567, 576, 606) went to the USA and one (558) to the WTD 61.

### Aero L-39 Albatros

The NVA had a total of 52 L-39 *Albatros* in two variants between 1977 and 1990 in service:

- 52 L-39ZO trainer aircraft
- 2 L-39V used for target-towing.

Of these, 50 L-39ZO and the two L-39Vs were transferred to the Luftwaffe but never saw active service.

### Aero L-29 Delfin

From 1963 - 1980, the NVA operated about 50 of the Aero L-29 as trainer aircraft.

### MiG-17 Fresco / Lim-5

From 1957 - 1984 the NVA had about 213 MiG-17 *Fresco*s. Most of them were Polish-built (under licence) MiG-17 *Fresco*s and designated in the NVA as Lim-5 (F) and Lim-5P (PF).





The ground crew checks a MiG-23UB assigned to Jagdgeschwader 9 (Fighter Wing 9) at Peenemünde AB before leaving the ramp towards the runway. NVA registration 107 to become GAF 20+59.





GAF 20+19, ex-NVA 343 of JG 9 at Peenemünde AB in May 1994.





- 1 MiG-23MF all-weather interceptor fighter (to become GAF 20+03), assigned to JG-9.
- 2 MiG-23ML multi-role all-weather tactical fighter and interceptor (to become 20+17) of JG-9.
- 3 MiG-23MF all-weather interceptor fighter (to become GAF 20+09), assigned to JG-9.
- 4 MiG-23BN close air support and counterair fighter (to become GAF 20+51) of JBG-37.





▲ MiG-23BN close air support and counterair fighter (to become GAF 20+52) of JBG-37.  
▼ MiG-23MF all-weather interceptor fighter (to become GAF 20+08), assigned to JG-9.



▲ MiG-23MF all-weather interceptor fighter (to become GAF 20+03), assigned to JG-9.  
▼ MiG-23ML multi-role all-weather tactical fighter and interceptor.







Foto Gerhard Hartmann









MiG-23BM with serial 20+51 is ex-NVA 710 when it was assigned to JBG-31 and JBG-37.









This MiG-23UM, two-seat conversion-/fighter trainer flew with the JG-9 as NVA 109 at Peenemünde AB.







▲ MiG-23MF all-weather interceptor fighter (ex-NVA 585, assigned to JG-9).



MiG-23ML multi-role all-weather tactical fighter and interceptor (ex-NVA 343, assigned to JG-9). ▲



MiG-23BN close air support and counterair fighter (ex-NVA 690, assigned to JBG-31 and JBG-37).





MIG-23ML, ex-NVA 488 assigned to JG-9.





- 1 MiG-23MF 20+06, ex-NVA 586 of JG-9.
- 2 MiG-23ML 20+30 / 3 of the WTD-61 at Manching AB – ex-NVA 558 of JG-9.
- 3 MiG-23MF 20+03 / 6 of the WTD-61 at Manching AB – ex-NVA 582 of JG-9.
- 4 MiG-23BN 20+48 / 7 of the WTD-61 at Manching AB – ex-NVA 701 of JBG-31 and JBG-37.



# Aero -39V/ZO Albatros



Foto Gerhard Lang

1 28+33 | 2 28+35 | 3 28+51 | 4 ex-NVA 153 | 5 28+52 | 6 28+50





Inset L-39V used for target-towing (to become 28+48).  
Main Image L-39VO (to become 28+09).





This aircraft with the registration 28+49 (ex-NVA 171) is one of only two L-39Vs the NVA used for target-towing.



## Aero L-29 Delfin



The Aero L-29 Delfin flew with the NVA from 1963 until 1980. These aircraft never received a Luftwaffe serial.



# MiG-17 Fresco / Lim-5



▲ Lim-5P  
▼ Lim-5



Lim-5 ▲  
Lim-5 ▼



Foto Gerhard Lang



# POLAND'S EASTERN FLANK

ARTICLE BY RALF JAHNKE



Poland's Malbork AB (22nd Baza Lotnictwa Taktycznego) currently plays a special role. All Polish MiG-29s have been assembled here and are gradually being prepared for transfer to Ukraine. Due to its location, the base is also used to reinforce NATO's eastern flank.

Already in December 2022 the MiG-29s of 1.elt (Eskadra Lotnictwa Taktycznego) moved from Mińsk Mazowiecki AB to Malbork AB where they joined the

MiG-29s of 41.elt.

Mińsk Mazowiecki AB near Warsaw will be the new home base for the newly ordered FA-50 light attack aircraft from Korean Aerospace Industries (KAI), with the first aircraft expected to arrive in 2023.

The MiG-29s have been in service with the Polish Air Force for 33 years. The first twelve MiG-29s arrived in 1989 and were stationed at Mińsk Mazowiecki AB. In 1995 and 1996 the unit received ten MiG-29s from the former Czech Air Force. Another 22 arrived from

the German Air Force between September 2003 and August 2004. Out of a total of 44 MiG-29s, the Polish Air Force still operates 29 in four different variants: single-seat MiG-29A (5x), MiG-29G (7x) and MiG-29M (11x) as well as two-seat MiG-29GT (3x) and MiG-29UBM (3x).

In July, Poland ordered the KAI FA-50 light attack aircraft. The deal, part of a larger \$13.7 billion defense contract between Poland and South Korea, includes the latest FA-50 Block 20 configuration capable of carrying AIM-120 AMRAAM medium-range air-to-

air missiles. The first 12 aircraft will be delivered in 2023, with a further 36 to follow between 2025 and 2028.

There had been a long discussion within NATO about supplying fighter aircraft to Ukraine, but in March things suddenly moved very quickly. Slovakia and Poland jointly announced that they would transfer their MiG-29s to Ukraine. Slovakia handed over all 13 airworthy MiG-29s and Poland four in two tranches. Germany also agreed to the transfer of former NVA MiG-29s. The aircraft were technically

MiG-29UB #4105 comes in to land at the 22nd Baza Lotnictwa Taktycznego at Malbork Air Base after a training mission.



prepared at Malbork AB for the respective deliveries. In addition, the Polish Air Force maintains a QRA with MiG-29s to secure Baltic airspace. The MiGs are used almost daily and are usually equipped with two R-73 air-to-air missiles. As it looks now, the MiG-29 inventory could be reduced very quickly and leave the Polish skies completely soon.

Since 2004, fighter jets from various Allies have taken turns patrolling the skies over the three Baltic states of Estonia, Latvia and Lithuania, which have no significant air defense systems of their own.

NATO expanded this mission after Russia's annexation of Crimea in 2014: Fighter jets are on standby at Āmari AB in Latvia, Siauliai AB in Lithuania and Malbork AB in Poland to identify and, if necessary, intercept unknown aircraft over the Baltics and in international airspace over the Baltic Sea.

This has taken on added significance since the Russian attack on Ukraine on 24 February last year.

In February 2023, eight F-35s from the 322nd Sqn moved from Leeuwarden AB to Malbork AB for two months to reinforce NATO's eastern flank. In addition to flying missions over Poland, the F-35s flew daily missions with other NATO aircraft along the border with Russia. In total, they had to intervene four times to intercept Russian aircraft. "That was especially true at the beginning," says Commander Schols. "Then the activity decreased. I don't know why. I'll have to look into the crystal ball."

In addition to this specific task, the Dutch were given the opportunity to train specifically for the different mission profiles in Poland. There was a lot of training in the NATO context. For example, large exercises took place over the Baltic States, but also over Romania.

Unlike the Baltic airfields, where NATO has a permanent air base, Malbork AB only occasionally hosts additional NATO fighter aircraft. In the past, other nations have also deployed to Malbork AB to reinforce the eastern flank.

Last year, the Americans sent further reinforcements to Lask AB with F-16Cs from the 52nd FW from Spangdahlem AB, F-15C/Es from the 48th FW from Lakenheath AB and F-22As from the 90th FW from Elmendorf AB, Alaska. F-22As of



MiG-29GT (ex-GAF29+24) taxiing to the runway. The vertical tail shows the portrait of Stanisław Skalski, one of best Polish fighter pilots of WW II.





the 94th FS from Langley AB were moved to Powidz AB in April 2023.

The origins of Malbork AB date back to 1929, the airfield was taken over by the Luftwaffe in 1934 and in 1939 a Focke-Wulf production facility was established there. About half of the FW 190s built by Focke-Wulf were assembled at Malbork AB. After the war, the base became home to Soviet and Polish aviation units. In 1952, Malbork SB became the base of the 41st Fighter Regiment (41st Pułk Lotnictwa Myśliwskiego). The regiment first flew the MiG-15, later the MiG-17, and in 1964, it was converted to the MiG-21. The MiG-21s "survived" the end of the Warsaw Pact and in

the run-up to Poland's accession to NATO, the armed forces were reorganized and the 41st Regiment was disbanded in 2001. Now, the 22nd Baza Lotnictwa Taktycznego (22nd BLT) was established and the 41st Tactical Flying Squadron, 41st Eskadra Lotnictwa Taktycznego (41st elt) was subordinated to it. The last MiG-21s were decommissioned in 2003 and one year, later the squadron started flying ex-German Air Force MiG-29B/UB (G/GT), which already met NATO standards. Whether new fighters will be stationed at Malbork AB in the future is currently uncertain. A possible replacement could be some of the F-35As already ordered. Poland has ordered a total of 32 F-35A *Lightning II* aircraft.

#### NATO Deployments to Malbork AB

Date	Number and Type of Aircraft	Unit, Air Force
05.2014 - 06.2014	4 x Rafale C	118 EC, French AF
06.2014 - 08.2014	4 x Mirage 2000C	115 EC, 166 EC, French AF
09.2014 - 12.2014	5 x F-16AM	312 Sqn, 313 Sqn, RNLeth AF
01.2015 - 07.2015	4 x F-16AM	10.Wing, Belgium AF
03.2019 - 04.2019	4 x F-16AM	BA5, Portugal AF
09.2020 - 12.2020	4 x F-16AM	BA5, Portugal AF
07.2021 - 09.2021	4 x F-16C	162 Filo, Turkey AF
08.2022 -11.2022	4 x F-2000A	Italy AF, 4., 36., 37.,51. Stormo
02.2023 - 03.2023	8 x F-35A	322 Sqn, RNeth AF





**Main Image:** Overflight of the QRA pair and turning to the traffic pattern  
**Insets:** Landing approach of the MiG-29 *Fulcrum*-A #108 named "Ludwig Paszkiewicz" after the mission.













F-35A *Lightning II* with serial F-020 of 322 Sqn on the taxiway to the runway for take-off for the morning mission. A year ago, a first squadron with F-35A achieved its operational readiness (Initial Operational Capability – IOC) in the Netherlands.





**Main Image:** Recently, 332 Sqn squadron emblems were applied to the F-35As' vertical tail.

**Above left:** As a rule, the *Lightning IIs* flew two rounds a day, each with up to seven aircraft. Four *Lightning IIs* were on QRA duty.

**Above middle:** A pair of F-35As is ready to secure the eastern flank.

**Above right:** F-35A #F-012 taking off.





The stealth technology of the fifth generation becomes clear in the front view. The F-35 fleet of the Royal Netherlands Air Force will in future consist of a total of 46 aircraft, spread over three squadrons at Leeuwarden AB and Volkel AB.





**Main Image:** A 3-ship formation comes in to land .  
**Top Left:** The F-35A #F-012 taxis onto the "DRAMP" to the waiting position awaiting clearance for take-off.  
**Left middle:** Rolling up the runway at Malbork AB.  
**Row above:** F-35A #F-018 landing cycle after a mission on the Eastern Flank.





Landing of the trainer version MiG-29GT #4123 (ex. GAF 29+25) on the runway in Malbork and then deploying its braking parachute. The first four MiG-29s entered service at Malbork on 7 June 2005 and were initially used for crew conversion training.





Typical of the MiG-29 are the large flaps that close the air intake ducts on the ground to prevent foreign objects from being sucked in. The periscope on the cabin roof is extended during take-off and landing so that the flight instructor on the rear ejection seat has a good view ahead.





**Main image:** MiG-29GT #4120 (ex-GAF 29+18) on the taxiway.  
**Top left:** MiG-29GT #4123 in the then new standard livery after the overhaul at the Polish aircraft factory in Bydgoszcz.  
**Top right:** The MiG-29 #66 came from the 1st from Minsk-Mazowieki AB to Malbork AB.  
**Above left:** Final take-off preparation on the runway in Malbork before the training session begins.  
**Above Right:** Two R-60MK (NATO designation: *Aphid-C*) above and two R-73s (NATO designation: AA-11 *Archer*) on the bottom of the trolley.





MiG-29A *Fulcrum* #77 (ex-Czech AF #7702) on the runway. It is one of a total of ten *Fulcrums* delivered by the Czech AF to the Polish Air Force in December 1995.





The unit badge of the 41.elt adorns the silhouette of the *Fishbed* with the knight of Marienburg.



**Top:** Take-off with two B-8M1 80 mm rocket launcher for air to ground mission training.  
**Above left and right:** The Germans delivered 22 MiG-29G/GTs. MiG-29G #4121 is ex-GAF 29+20 and #4122 is ex- GAF 29+22. In 2003 and 2004, the most ex-GAF *Fulcrums* went to Malbrk AB to the 41.elt. A total of eight single-seater *Fulcrums* served as spare parts donors.





MiG-29UB *Fulcrum* B #42 takes off for the next training mission over Poland.





The 41.elt retired their MiG-21bis in December 2003. The MiG-21bis #9805 is parked on the apron of the maintenance hangar in a favorable photo position. Another version of the unit badge adorns the fuselage.





The MiG-29bis can be loaded with a wide range of armament as presented here:

- from front to back lying on the ground
  - o 250 shell cartridges AM-23 for GSch-23 cannon (caliber 23mm),
  - o High-explosive bombs FAB-250,
  - o S-5 unguided rockets for UB-16 and UB-32,
  - o UB-32 missile pod for 32 S-5 unguided missiles,
  - o UB-16 rocket pod for 16 S-5 unguided rockets.
- On the pylon carrier:
  - o bombs up to 100 kg in groups of four on the MBD-2-67 carrier and
  - o individually directly on the BD3-60-21 wing carrier.





**Main image:** Impressive line-up of a group of *Fishbeds* on Malbork's runway.  
**Above left:** MiG-21bis #9407 taxiing back after landing.  
**Above middle:** MiG-21bis #9345 taxiing onto the runway.  
**Above right:** MiG-21bis #9444 taxiing to the runway equipped with a larger external fuel tank.



# PORTUGUESE NAVY LYNX

ARTICLE BY  
RUI FERREIRA



The Portuguese Navy commemorated its 706th anniversary<sup>(\*)</sup> last 20th May in the city of Porto.

With all the activities centered by the river side of the city of Porto, but also in the neighboring Gaia, the activities of divulging the Portuguese Navy's mission

and capabilities took place in several locations in both cities, culminating in the weekend with a military parade and a naval and aerial demonstration, which took place on the 21st (Sunday).

On this day (and the previous two practice days),





it was possible to see the operation of two of the refurbished Westland Super Lynx Mk.95A of the Esquadilha de Helicópteros da Marinha (EHM), one operating from the NRP D. Francisco de Almeida (F334) anchored in the Douro river, and the other temporarily based at Aerodromo de Manobra, in Maceda (Ovar).

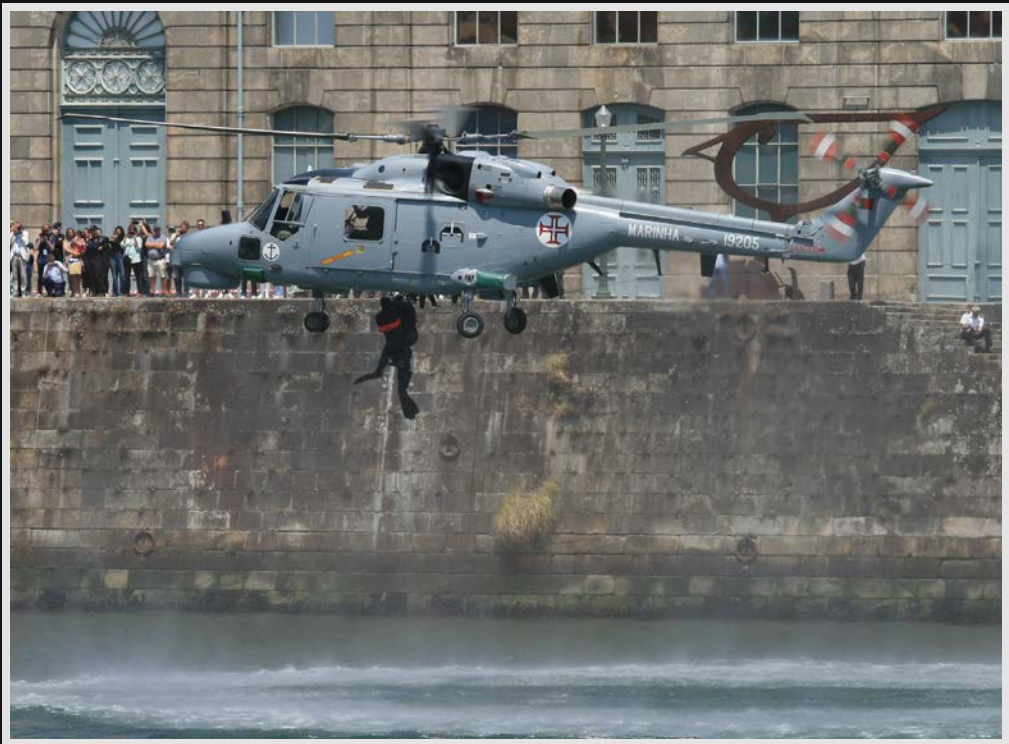
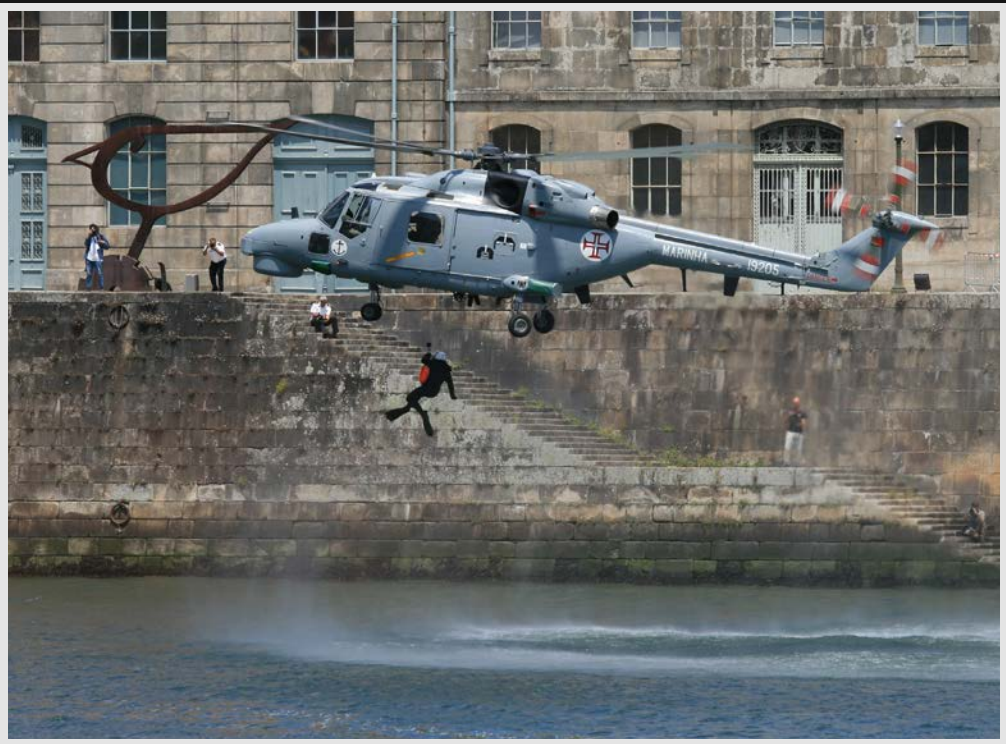
The Portuguese Navy has five Westland Super Lynx Mk.95 on charge, acquired in 2001, serialised 19201 to 19205. The fleet is undergoing a modification to the Mk.95A standard, which comprises new motorization, with the LHTEC CTS800-4N turbine, new winch, a glass cockpit with multi-function displays and new tactical processor (similar to the AW-159).

Currently, 19202, 19204, and 19205 are modified, being nos. 19201 and 19203 at Leonardo in Yeovil (UK) in different phases of the modification.

(\*) The official date of the creation of the Portuguese Navy is 1 February 1317, when the Portuguese King D. Dinis ruled towards the creation of a permanent force, the *Marinha Real* [Royal Navy]. The date of 20th May is celebrated as the Portuguese Navy Day, a date that marks the arrival of Vasco da Gama fleet to Calicut in the Indies, on the 20th May 1498. His initial voyage to India by way of Cape of Good Hope (1497-1499) was the first to link Europe and Asia by an ocean route, connecting the Atlantic and the Indian oceans.

This Lynx is fitted with a 20mm door-gun and a winch on the other side.















# 100 YEARS ANTWERP AIRPORT

ARTICLE BY KRIS CHRISTAENS



On Saturday, 20 May, and Sunday, 21 May 2023, the 29th Antwerp Stampe Fly-In was held at Antwerp International Airport. Since this weekend also marked the 100th anniversary of the airport, a special airshow was organized on Sunday. To celebrate this special anniversary, visitors could enjoy a lot of old, historic aircraft such as the Supermarine Spitfire warbird, Stampe-Vertongen SV.4 biplanes, North

American T-6 Harvard trainer aircraft, and a Douglas C-47 Dakota military transport aircraft. The Belgian Air Force was also present at this event with an Airbus A400M military transport aircraft and a display by the Belgian Air Force's formation team the Red Devils. One of the highlights during the airshow on Sunday was a formation flight with 15 Stampe-Vertongen SV.4 biplanes. This beautiful formation flight was a tribute

to the well-known Belgian aircraft manufacturer and flight school Stampe and Vertongen who have always had their home base at Antwerp Airport. Today, Antwerp Airport still houses the Stampe & Vertongen Museum where you can learn all about the history of aviation in Belgium and its pioneers. Another highlight during this airshow was a unique formation flight of four North American T-6 Texan/Harvard warbirds.

Demonstrations were also given by a Fouga CM.170 Magister jet trainer, a Rockwell OV-10 Bronco, and a beautiful Lockheed Model Electra. More than 20,000 people gathered at Antwerp Airport to celebrate the centenary of this airfield and its rich history.

Four North American T-6/AT-6/SNJ *Texan/Harvard*. The *Texan/Harvard* is a trainer aircraft based on the North American NA16 prototype which first flew on 1 April 1935. A total of 15,495 T-6s of all variants were built.





XS249 was built in 1943 as AT-16ND by Canada's Noorduyn. They built 2557 R-1340-AN-1-powered Harvard IIs under license as the AT-16, designated as Harvard II.B. This aircraft served from November 1943 until August 1946 with the Royal Air Force with serial number FT144. In August 1943 it was transferred to the Royal Netherlands Air Force as B-59, and then to the Royal Netherlands Navy with serial number L-5. From April 1949 to 1974 it flew again with the Royal Netherlands Air Force with s/n B-59. The aircraft has Royal Canadian Air Force markings and colors of RCAF Station Moose Jaw based AT-16s.

LC 23 is a 1944 built North American SNJ-5 Texan, construction number 88-15356.





Top left: Four North American T-6/AT-6/SNJ *Texan/Harvard* trainer aircraft.  
 Top right: North American AT-6D Texan 'Safety Jogger' (construction number 44-81506).  
 Above: North American AT-16 Harvard IIB (c/n 14A-1494), registered as OO-DAF.





**Main Image & right inset:** Fly-by of Stampe-Vertongen SV.4 biplanes.  
**Insets left:** Stampe-Vertongen SNCAN/SV4A OO-GWC painted as French Air Force 1, is the oldest flying Stampe.













Fouga CM170 *Magister* built in 1960.





Belgium Air Force's aerobatic display team RED DEVILS with four SIA Marchetti SF 260.









Grob G109







# RNLAF F-16S RETURNED HOME

TEXT: MANOLITO JAARSMA | PHOTOS: MANOLITO JAARSMA UNLESS STATED



In a surprise move, the Netherlands Ministry of Defence (MoD) announced on 13 December 2022 to fly its eleven stateside-based F-16s to the Belgian aviation company Sabca located at Charleroi. It was planned that all F-16s, with support from U.S. Air Force air refueling aircraft, would arrive on 15 December. However, it took until 30 January 2023 to get them to Belgium.

## RNLAF F-16's End Of Life Type (ELOT)

The Royal Netherlands Air Force is halfway through its transition from F-16 *Fighting Falcon* to F-35 *Lightning II* operations. 322 Squadron based at Leeuwarden AB achieved its F-35 Initial Operational Capability while their colleagues of 313 Squadron based at Volkel AB are in the process of achieving their IOC. A third squadron, to be based at Volkel AB, will receive their Lightnings when 313 Squadron received its fifteen aircraft. Based on the delivery schedule of eight

aircraft per year, this is expected to take place in the second half of 2023.

On 1 January 2019, the RNLAF had 68 F-16AM/BM fighters assigned to its squadrons. The number contained 61 operational and seven logistical reserve aircraft. These were operated by 322 Squadron at Leeuwarden AB, 312 and 313 Squadrons at Volkel, and the Netherlands Detachment Tucson Arizona. These F-16s are part of the End Of Life Type (ELOT) program. Aircraft withdrawn from service are stored at Volkel AB and await their future. Within the Netherlands, the Defence Material Organization

(DMO) is responsible for the purchase of material for the armed forces but also the sales of aircraft, vehicles, and equipment withdrawn from use.

312 Squadron has 24 F-16AM's as of 1 January 2023. These will continue to fly with the squadron until 2024 when they will be withdrawn from service.

## Draken International buys F-16

The United States company Draken International is one of the major players contracted to provide the U.S. Department of Defence with adversary, also known as red air, aircraft. During exercises like Red Flag but also when training requires, Draken provides aircraft to act as the enemy. Using Draken aircraft to fly red air missions saves the combat squadron flight hours which they use for training or during

J-010 received marking of the 148 FS' commanding officer and was the first to arrive at Charleroi in December 2022.



deployments.

On 30 June 2021, the Netherlands MoD announced that it sold 12 of its F-16s to Draken as part of its ELOT program. The contract with Draken contained an option for the delivery of another 28 F-16s. Except for the Dutch fighters, Draken also purchased up to 12 F-16s from the Royal Norwegian Air Force, a contract announced by the Norwegians on 2 December 2021.

Of the 12 Dutch F-16s sold to Draken, ten were assigned to the NDTA, the other two were assigned to 312 Squadron.

#### Netherlands Detachment Tucson Arizona

Royal Netherlands Air Force fighter pilots are trained in the United States. Selected graduates from the basic flying training course at 131 (EMVO) Squadron at Woensdrecht AB, continue their career at Sheppard AFB, Texas. From there, they are assigned to the F-16 and currently, the F-35. The Netherlands has a long-standing relationship with the U.S. to train its pilots in the United States. Until 1995, the RNLAF trained its fighter pilots

in Tucson, Arizona. Mid-1995, this came to an end with all RNLAF F-16s returning to The Netherlands. The RNLAF returned to the USA in 2010, this time to Ohio. Based at Springfield Beckley airport, the Dutch F-16s integrated into the Ohio Air National Guard 162nd FS, 178th FW. When the mission of the 178th FW changed (it currently operates the MQ-9A *Reaper*), the RNLAF moved its training to Arizona, becoming the Netherlands Detachment Tucson Arizona (NDTA) embedded with the 148th FS "Kickin' Ass", 162nd FW, Arizona. The 162nd FW operates from Morris ANGB, part of Tucson International Airport. NDTA had 10 F-16s assigned equally divided between the F-16AM single-seater and F-16BM double-seater. The last class graduated on 29 July 2022, ending more than 25 years of training F-16 pilots in the United States.

312 Squadron's F-16BM J-882 was withdrawn from use on 12 October 2021. It was disassembled and transported by truck to the port of Antwerp, Belgium. From there, it was shipped to the USA and eventually, turned up at Morris ANGB.



It has been noted flying from the base. Somewhere within the August–December timeframe, the F-16s flew to Lakelinder International Airport, Florida. The twelfth F-16 destined for Draken, F-16BM J-368, stayed at Volkel.

#### RNLAF "Draken" F-16s to fly to Charleroi

On 13 December 2022, the Netherlands MoD announced that it would fly its 11 F-16s from Florida to Sabca at Charleroi, Belgium. Starting the transfer of the aircraft to Draken was delayed and they all needed maintenance. The Belgian aviation company is contracted to maintain Belgian and Dutch F-16s while the USAF also makes use of Sabca's services.

While The Netherlands is one of the members of the NATO Multinational MRTT Unit (MMU) based at Eindhoven, Netherlands, and Cologne, Germany, their A330MRTTs were not tasked to fly the F-16s to Europe. MMU currently operates nine A330MRTTs. Each member acquired an annual number of flight hours of which 2,000 are allocated to the RNLAF. Instead,

tanker support was provided by USAF KC-10 and KC-135 aircraft. Using RCH8x callsigns, not a common callsign used to fly fighters over the Atlantic Ocean, they flew from Lakelinder to Lajes airport Azores, Portugal. After the crew rest day, the final leg to Charleroi was flown with the tankers going into RAF Mildenhall. On 13 December 2022, two cells (six and five aircraft) flew up the US eastern seaboard to the New York / Boston area then started the Atlantic crossing. Eventually, six succeeded with five remaining in the USA. Two days later, only four managed to leave Lajes which resulted in the fleet being divided into four at Charleroi, two at Lajes, and five at Lakelinder. This lasted until the second half of January. Another attempt to fly the five fighters to Lajes was made on 21 January 2023. This time, they reached Lajes, joining their two-sister aircraft. On 23 January, all seven made the final journey, divided into two cells (four and three aircraft respectively) both accompanied by two KC-135s. However, the second cell canceled. These finally made it to Charleroi on 30 January.

Top: Arrival of the second cell (flight) at Charleroi which included J-018/AZ.  
Above: J-019 makes its way to the taxiway while sistership J-018 taxis to the Sabca ramp.





### Where will the F-16's go?

With the return of the F-16s to Europe, there has been much speculation where they will end up. The Ministry of Defense released its schedule of documents to be submitted to Parliament on 13 January 2023. The letter stated that information on the sale to Draken would be sent during the first quarter of 2023. This letter was submitted on 1 June. What was already unofficially known became official. The contract with Draken had been terminated by mutual consent. There was a difference of opinion regarding the execution of the sales/purchase agreement, which was mutually settled. The disagreement, according to the document, was over to the state of repair of the F-16s at the time of their transfer. Draken was offered the purchase of six RNLAf F-16s on terms yet to be determined. This will allow Draken to expand its fleet with fourth-generation fighters and to compete for contracts. The offer was accepted by Draken. The Dutch government and Draken are now negotiating the new contract. Delivery could take place in 2024. This will be the final year of RNLAf F-16 operations with its last 24 aircraft to be withdrawn from use during the year.

The twelve F-16s were flown to Sabca and are currently undergoing maintenance. Alternative destinations are

now being investigated by the Ministry of Defense. This includes the two-seater seat aircraft, which are suitable for training.

Regarding the option of 28 Draken F-16s, Parliament has been informed that six have been reserved for the company. These will all be single-seaters. This leaves 22 aircraft for which alternatives are being explored.

The Dutch government, along with other NATO allies, has offered to train Ukrainian pilots on the F-16. According to news reports, the training will most likely be conducted by Eastern European NATO countries. Poland operates the F-16C/D and Romania the F-16AM/BM. Time will tell where the training will take place and which NATO countries will transfer F-16s which are or will be withdrawn from use.



**Main Image:** Beautiful weather in December as J-210/AZ is about to touch down on Charleroi runway 25.  
**Inset:** The second cell consisted of a pair of F-16AMs and a pair of F-16BM. Both versions were captured at Charleroi on January 23.



## Farewell Tour – Last Overwater F-16 Training at NAS Key West Over Florida Coast

All photos U.S. ANG by Tech. Sgt. George Keck



- 1 Lt. Col. Joost Luijsterburg, RNLAf detachment commander, Morris ANGB, performs a walk around inspection of his F-16 *Fighting Falcon*.
- 2 Lt. Col. Luijsterburg and Lt. Col. Andrew Wittke, the 148th FS commander, Morris ANGB, walk to their aircraft.
- 3 Lt. Col. Luijsterburg, climbs the crew ladder into his F-16 *Fighting Falcon*.
- 4 Lt. Col. Joost Luijsterburg buckles his shoulder harness.





**Main Image:** Lt. Col. Luijsterburg waits to taxi his aircraft.  
**Inset:** Lt. Col. Luijsterburg adjusts his oxygen mask before closing the aircraft's canopy.





Four Royal Netherlands Air Force F-16 *Fighting Falcons* assigned to the Netherlands Detachment Tucson Arizona at Morris ANGBase wait at the End of Runway for their turn to take off from NAS Key West.



# CORSI DI CULTURA AERONAUTICA

REPORT BY MARCO PAPA AND GIAMPAOLO TONELLO UNLESS STATED



Formation of four SIAI S.208M assigned to 423<sup>a</sup> SC in a special livery to celebrate the 100th anniversary of the Aeronautica Militare (1923-2023).





Thanks to the collaboration between the Italian Air Force, the local school board, the municipality of Forlì, and Forlì Airport, the first of five courses in aeronautical culture scheduled for 2023 took place

from 13 to 24 February at "Luigi Ridolfi" airport in Forlì. It should be remembered that 2023 marks the 100th anniversary of the Italian Air Force (ItAF), which was celebrated on March 28th.

For this occasion, the SIAI Marchetti S.208M trainer aircraft (U-208A in the latest aeronautical designation) used for these courses have been equipped with a special commemorative livery that combines the turreted eagle, symbol of military pilots from all Armed Forces, with the emblems of the Air Force and the ItAF's anniversary. The graphic design of the

paint scheme was created by Studio Bassodesign in Cittadella (PD), while Publicolor in Romano d'Ezzelino (VI) applied the foils that make up the livery at Thiene

#### THE SIAI S.208M (U-208A)

In 1967, the ItAF considered the SIAI S.205 aircraft for use as a glider tug assigned at the Glider Flight





Section in Guidonia. Four S.205M aircraft were purchased, and the following year, an additional 25 S.208M aircraft were acquired. The S.208M models were equipped with a more powerful Avco Lycoming O-540-E4A5 piston engine, delivering 260 horsepower, which was better suited for the specific task. The four S-205 aircraft were converted to the S.208 standard. Subsequently, further 16 S.208M aircraft were purchased, bringing the total number to 45 aircraft. The S.208Ms are capable of carrying up

to four passengers in addition to the pilot. They were also assigned to the Flight Training Centers (Centri Addestramento Volo - CAV) of the three Air Regions, later designated as the 300th, 303rd, and 304th Group, and, starting from the 1980s, to the Liaison Squadrons of the Wings. Currently, they are still in service with the Italian Air Force as liaison aircraft and with the 60th Wing for glider towing operations at Guidonia airport.

#### THE EVENT IN FORLÌ

The choice of Forlì was not accidental, as Major Antonio Schifano, commander of the Volo a Vela Group in Guidonia (RM), pointed out during the press conference on Friday, 17 February. General Silvano Frigerio, Commander of the Italian Air Force, followed Major Schifano's words by emphasizing that the Air Force's goal is not to scout for new military personnel but to spread the concept of aeronautical culture and flight on the occasion of

the centenary of the Italian armed forces. The aim is to bring young people closer to the aeronautical world, which contributed to a significant leap in the evolution of modern man and which will probably see them witness the first human landing on Mars.





Finally, Colonel Michele Cesario, commander of the 60th Wing in Guidonia (RM), thanked Forlì for its excellent hospitality and organization, but above all, for the enthusiastic participation of the students, with 500 applicants from six schools for only 180 available spots. The selections were therefore very strict to allow the most deserving students to have this wonderful experience. Of these 180, the top 68 will sit on the copilot's seat and handle the aircraft during flight phases. The remaining students will be in the back seats (remembering that the SIAI 208 M aircraft can accommodate up to four people). Colonel Cesario also reminded everyone that the top 2/3 students from each course will have the opportunity

to experience glider flying at the Guidonia gliding flight group (RM).

After the representatives of the Italian Air Force, there were representatives of Forlì Airport, the Mayor and the representative of the Provincial School Board of Forlì. They thanked the Italian Air Force not only for choosing their city and airport. They also emphasized the importance of this event in many ways, but especially that it offers young people a unique opportunity to open up new approaches and horizons. For the students, the course is an opportunity to approach the world of flight – a world that offers great emotions, but also requires commitment,

competence and passion. For the Italian Air Force, in turn, it is an opportunity to be among young people and familiarize them with the professional and ethical culture of the Armed Forces serving the country, which, as many have pointed out in their speeches, plays a fundamental role in supporting citizens and the state. These courses show that the cooperation between military and civil institutions, which takes place in an atmosphere of mutual trust, puts the Armed Forces at the service of citizens.

The aeronautical culture course lasts for two weeks and is essentially divided into two parts. One theoretical part where students participate in lessons on the principles of aeronautics, flight, and flight safety, as well as the study of meteorology and air traffic control. In the second part, students experience the real feelings of flying, with some taking the controls themselves and others flying as passengers, always accompanied by an experienced pilot. Forlì hosted the first of five courses in aeronautical culture that will take place in 2023. The other four

locations and respective dates are:

- Varese 13rd – 24th March.
- Catania 8th – 19th May.
- Bergamo 9th – 20th October.
- Perugia 6th – 17th November.

The authors would like to thank the Italian Air Force, especially Major Stefano D'Imperia and 1st Lt. Benedetta Sticchi of the 60th Wing in Guidonia (RM), who coordinated the activities with the press and the personnel at Forlì Airport, accommodating every request we had. Furthermore, we would like to dedicate this report to the memory of Lieutenant Colonel Daniele Cipriano and Major Marco Meneghello, who tragically lost their lives in a mid-air collision between two U-208A aircraft near Guidonia just a few weeks after having had the pleasure and honor of personally meeting them and flying with them in Forlì.

**Inset** S.208M with standard paint scheme and special tail to celebrate the 100th anniversary of the first flight from Rome to Tokyo. In 1920, two SVA 9 biplanes flew from Rome to Tokyo, covering 18,000 km in 106 days.













- The S.208M/U-208A with code 60-35 shows the standard color scheme with the '100 Years Aeronautica Militare' emblem.
- The table to the right lists all twenty, in the early 2000s upgraded S.208Ms.

*Photos and table this page by Marco J. Muntz*

Serial	Code	Remarks
MM61934	60-21	Former S.205M / Centenario Roma-Tokyo Raid special tail
MM61935	60-22	Former S.205M
MM61936	60-23	Former S.205M
MM61937	60-24	Former S.205M / Centenario Roma-Tokyo Raid special tail
MM61970	60-25	
MM61971	60-26	
MM61974	60-27	Centenario Roma-Tokyo Raid special tail
MM61977	60-30	
MM61979	60-31	Centenario Aeronautica Militare colour scheme
MM61980	60-32	Centenario Aeronautica Militare colour scheme
MM61982	60-33	
MM61983	60-34	Written Off 07/03/2023
MM61984	60-35	
MM61985	60-36	
MM61986	60-37	
MM62002	60-40	Centenario Roma-Tokyo Raid special tail
MM62003	60-41	Centenario Aeronautica Militare colour scheme
MM62004	60-42	Centenario Aeronautica Militare colour scheme
MM62007	60-43	Centenario Roma-Tokyo Raid special tail / Written Off 07/03/2023
MM62009	60-44	

The Aeronautica Militare acquired 45 S.208M's in total, two batches of 25 and 16 aircraft respectively, in addition to the initial four S.205M's which were converted to S.208 standard. From twenty SIAI S.208M's upgraded in the early 2000s, eighteen are still in service with 60° Stormo for training, liaison and glider-towing flights. Two aircraft were lost in an in-flight collision over Guidonia on 7th March this year, unfortunately with the loss of both pilots. One S.208 is normally allocated to the Squadriglia Collegamenti di Linate, Milan.



# AIR TRACTOR A-802 ARRIVES IN SLOVENIA

TEXT BY IGOR BOZINOVSKI | PHOTOS BY AIR TRACTOR INC. UNLESS STATED



The second Air Tractor AT-802 single-engine fire-fighting aircraft for the Slovenian Ministry of Defence's subordinated Uprava Republike Slovenije za zaščito in reševanje (URSZR, Administration of the Republic of Slovenia for protection and rescue) landed at Ljubljana/Brnik "Jože Pučnik" international airport on 18 May.

The twin-seat aircraft – in land-based configuration (with classical, tricycle-type landing gear) – arrived in Slovenia with the Spanish temporary registration EC-OCO (ex N7900R, c/n 802-1029). The one-stop flight started on the same morning at Viver airport in Spain and proceeded towards Slovenia with a single stop at Calvi/Sainte-Catherine airport in Corsica, France.

The 45-minute-long acceptance test flight for EC-OCO was performed on 20 June with the ATE pilot in command and a Slovenian copilot in the back seat. The aircraft will most probably be registered as Slovenian S5-BZT.

Slovenia's first twin-seat AT-802 also with classical tricycle-type landing gear, wearing the Spanish temporary registration EC-NZL (ex N85152, c/n 802-0990) arrived at Ljubljana on 9 May. Expectations are that the Slovenian registration of this aircraft will be SB-BZR.

The 4-strong fleet would be complete in March 2024 when two amphibian-configured single-seat AT-802A Fire Boss planes will arrive in Slovenia. Meanwhile,

the twin-seat planes will return to Spain where floats will be installed before the end of October 2023, resulting in the change of their designation from AT-802 to AT-802 Fire Boss.

"Following the devastating Karst wildfire of July 2022, Slovenia committed to promptly build a dedicated aerial fire-fighting fleet that would rely on four brand-new 3,104-liter capacity Air Tractor AT-802 Fire Boss planes," Slovenian defense minister Marjan Šarec said on 17 April in Ljubljana during the ceremony for signing the Agreement for the acquisition of 4 Air Tractor planes from the Spanish, Viver-based company Air Tractor Europe (ATE).

The aircraft purchased by the MoD would operate

under civilian (S5-) registration within a special aerial fire-fighting unit that would be established within URSZR. To put the unit in operational use, training of Slovenian pilots and related technical personnel

Slovenia's second Air Tractor AT-802 arrived in Slovenia on 18 May 2023.



would be organized by ATE which would help Slovenia to put its Air Tractors in use in the summer of 2023. While various airports across Slovenia would be used for the purpose, the unit's home base is yet to be decided.

Slovenia's program for the establishment of aerial firefighting capabilities has been approved at a government session held in Ljubljana on 30 January. A new dedicated national development project was launched then for the construction of aerial firefighting capabilities in the period 2023-2026 with a maximum of six small fire-fighting planes, four firm orders, and two options.

Being co-financed (85%) by the European cohesion policy funds for the period 2021-2027, the Slovenian project now focuses on the initial acquisition of 4 planes and establishing an OEM-backed training and logistical system that would allow URSZR planes to become part of the common aerial fire-fighting fleet of the EU Civil Protection Mechanism (rescEU) that apart of protecting Slovenia will also help extinguishing wildfires within the EU as well as in other nations in need.

In case the option for the acquisition of additional two planes is implemented, Slovenia would further increase its Air Tractor fleet during or after 2025.

Over 1,000 Air Tractor AT-802 planes were built since 1992 and this aircraft is now a fire-fighting standard for most wildfires-prone countries. It was already bought and put in service with the governments and private operators in the United States, Canada, Australia, South Africa, Chile, Argentina, Brazil, Spain, Portugal, France, Italy, Sweden, Israel, Cyprus, Croatia, Montenegro, Macedonia, Greece, Turkey, and Saudi Arabia.

According to ATE, serious interest in purchasing the AT-802 plane has so far also been demonstrated by Albania and Bosnia-Herzegovina. Aside from selling planes, ATE is also very active in leasing AT-802s and providing aerial fire-fighting services to various governments in Europe and beyond with record 50 ATE-owned/controlled AT-802 planes expected to operate this year in Spain, Portugal, Turkey, Greece, Germany, France, Cyprus and Saudi Arabia.



Photo by Titan Firefighting



Photo by Igor Bozinovski

AT-802 FIRE BOSS PERFORMANCE

Gross Takeoff Weight (Land)	16,000 lbs // 7,257 kg
Gross Takeoff Weight (Water)	11,500 lbs // 5,216 kg
Maximum Landing Weight (Land)	12,300 lbs // 5,579 kg
Maximum Scooping Weight	16,000 lbs // 7,257 kg
Maximum Landing Weight (Water) – Full Stop	11,500 lbs // 5,216 kg
Land Take-Off Run	1,970 ft // 600 m
Land Take-Off Over 50 ft Obstacle	3,299 ft // 1,005 m
Water Take-Off or Scooping Run	2,200 ft // 670 m
Water Take-Off or Scooping Run Over 50 ft Obstacle	5,600 ft // 1,707 m
Approximate Empty Weight	8,900-9,100 lbs // 4,037-4,128 kg
Approximate Useful Load	6,800-7,100 lbs // 3,084-3,221 kg
Max Cruise Speed At 16,000 lbs / 7,257 kg	150 KIAS
Vs (16,000 lbs / 7,257 kg – 10° Flap)	75 KCAS
Vs (16,000 lbs / 7,257 kg – 30° Flap)	72 KCAS
Rate of Climb At 16,000 lbs / 7,257 kg	892 ft/min // 272 m/min





The *Fire Boss* has a 820 USG (3,104 L) water capacity plus up to 78 USG (296 L) foam capacity.

Photo by Titan Firefighting





All Photos this page by Titan Firefighting



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