

THE AVIATION MAGAZINE

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Nº 71 October-Dezember 2020
Volume 11, Issue 5



- **Policía Nacional de Colombia**
- **Exercise Soberania**
- **RIAT 2000**
- **Spanish Army Caimans**
- **75 Years 298 Squadron**
- **And so much more ...**

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Cover: A-4R *Fightinghawk* of The Argentine Air Force © 2019 H. J. Clariá

This page: CH-47D *Chinook* assigned to 298 Squadron of the Royal Netherlands Air Force © van Boven/van Noije



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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

Covid-19 still has the whole world in its grip, and it is causing not only civil aviation, but also military aviation to suffer. The number of larger exercises is still very limited. Events with media access take place, if at all, only to a very limited extent. Therefore, we will continue to report on events that may well have been "a few days" ago, but which have nevertheless earned their place in our magazine. The next issue will be published at the beginning of 2021. We will report in detail about the first ever visit of the Israeli Air Force to Germany, the MAGDAYS and the international helicopter exercise Baccarat. New in the magazine will be photo reports of aircraft movements at various military air bases.

Dear reader, if you have a report with photographs that you would love to share with other aviation enthusiasts, please feel free to contact us at editor@TheAviationMagazine.com. We would love to have a chat with you to see if it fits within the scope of one of our next magazines.

For now, I wish you all much pleasure in reading this new issue. Download your free copy of the 71th issue of THE AVIATION MAGAZINE **here!**

Thank you very much for reading and downloading THE AVIATION MAGAZINE, the BEST and FREE e-based magazine on military aviation since 2009. Imitated by so many, but never surpassed!

For the rest of this difficult and moving year, we wish you good health and all the best, and hope to see you again in 2021.

Ralf Peter WALTER
Publisher & Editor

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POLICÍA NACIONAL DE COLOMBIA

REPORT AND IMAGES BY ANTHONY F. SEYCHELL



'Modern' law enforcement was established in Colombia just over 130 years ago when national law 90 of 1888 instituted a gendarmerie under government orders and as a dependency of the then Ministry of Government for Bogotá. In those days, there were other law enforcement services at departmental or municipal level, under the orders of the governors or mayors. Three years later, in 1891, the national government amalgamated all the law enforcement agencies into one national body, the Policía Nacional de Colombia (PNC, Colombian National Police).

Over the years, the PNC became an armed civilian body with the President of the Republic of Colombia as its supreme commander. The President's authority is cascaded down and exercised through the Minister of Defense and the Director General of the National Police. The PNC, part of the Colombian Public Force along with the Military Forces of Colombia (Army, Navy, and Air Force), has a hierarchical structure similar to that of the Military Forces. The mid-1940s saw the start of La Violencia, a civil war in Colombia. Although this war is considered

officially to have ended around 1958, it regrettably left repercussions, the Conflicto armado interno de Colombia, felt to this day because it spawned guerrilla movements and led to the rise of powerful crime and drug cartels. Thus in the 1960s and 1970s, the PNC's tasks were expanded to meet these threats to the Colombian society.

The expanded tasks of the PNC led to the establishment of the Aviación Policial, when in 1965, the PNC acquired two Cessna 206s and a Cessna 441. These

modest beginnings led to today's 140-strong fleet of the Aérea de Aviación (ARAVI), the largest police air fleet in South America. The aircraft have been acquired through direct procurement, seizure of assets used by drug carriers, and via Plan Colombia.

Maintenance personnel working on two Bell 212s to have them ready for the next mission. The helicopter in the background is a Bell UH-1H-II Huey II



ATR 42-300



Beechcraft 1900D



DHC 8-300

Operations Organisation of the Policía Nacional de Colombia

Dirección de Carabineros y Seguridad, DICAR (Carabineers and Rural Security Directorate)
Dirección de Investigación Criminal e Interpol, DICIL (Criminal Investigation and Interpol Directorate), formerly Dirección Central de Policía Judicial e Inteligencia, DIJIN (Central Directorate of the Judicial Police and Intelligence)
Dirección de Inteligencia Policial, DIPOL (Police Intelligence Directorate)
Dirección de Antinarcóticos, DIRAN (Anti-Narcotics Directorate)
Dirección de Protección y Servicios Especiales, DIPRO (Protection and Special Services Directorate)
Dirección Antisecuestro y Antiextorsión, DIASE (Anti-kidnapping and Anti Extortion Directorate)
Dirección de Tránsito y Transporte, DITRA (Traffic and Transportation Directorate)
Dirección de Seguridad Ciudadana, DISEC (Citizen Security Directorate)
Dirección de Gestión de Policía Fiscal y Aduanera, POLFA(Fiscal and Customs Police Directorate)

Special Groups

Comandos de Operaciones Especiales, COPES (Special Operations Commandos)
Escuadrones móviles de carabineros, EMCAR (Mobile Carabineer Squadrons)
Compañía Jungla Antinarcóticos, JUNGLA (Anti-narcotics Jungle Company)
Grupos de Acción Unificada por la Libertad Personal, GAULA (Unified Action Group for Personnel Rescue)
Escuadrones móviles antidisturbios, ESMAD (Mobile Riot Squadrons)
Policía de carreteras, POLCA (Highway Police)
Servicio Aéreo de Policía, SAPOL (Police Air Service)



Swearingen SA227-DC Metro 23



Douglas Basler BT-67 Turbo



Cessna 208B Grand Caravan



Beechcraft 200 King Air



Piper 31-350 Navajo Chieftain

Plan Colombia

The plan was originally conceived in 1999 by the Colombian and US administrations and signed into law by the United States in 2000. It consisted of United States foreign aid, military aid, and diplomatic initiatives aimed at combating Colombian drug cartels and left-wing insurgent groups in Colombia. The US Department of State runs the Aerial Eradication Program (EAP) under this plan where coca and poppy fields are sprayed by US-supplied aircraft, such as the Air Tractor AT-802s, supported by Cessna 208s. The aircraft are flown by Colombian Police crews and are further supported by PNC helicopters for SAR and security purposes.



Air Tractor AT-802

Aircraft Operated by the PNC

Air Tractor AT-802	Cessna 172
ATR 42	Cessna 206
Beechcraft 1900 (models C and D)	Cessna 208*
Beechcraft King Air (various models)	DHC-6 Twin Otter
Bell 206 (various models)	DHC-8
Bell 212	Douglas Basler BT-67 Turbo (DC-3T/C-47T)
Bell 407	Fairchild Swearingen C-26 (various models)
Bell 412EP	Hughes 369
Bell UH-1H-II Huey II*	Piper PA-31 (various models)
Cessna 152	Sikorsky UH-60* (models A and L)

* Some, if not all, owned by US Government but operated by PNC personnel.



Bell 212



Sikorsky UH-60A



Bell 407GX-P



Bell UH-1H-II Huey II



DHC 8-300, ATR 42-300 and Beechcraft 1900D (left to right)

The Aviación Policial has five main bases namely Bogotá, Guaymaral, Mariquita, Tuluá, and Santa Marta besides a number of detachments and forward operating bases.

Bogotá

The Base Aérea de Bogotá was established in the late 80s in the former general aviation section of El Dorado International Airport. As the fleet expanded, more space was needed and construction of a new Aviación Policial base in another part of El Dorado Airport was commenced at around 2000. The air base Bogotá has established itself as an operational PNC transportation center for the entire country and abroad, currently being the national branch of the Antinarcotics Directorate and housing several other administrative offices at the national level related to the directorate and police aviation.

BA Bogotá is the main operational base and since 2004 has Command and Control facilities from where all air operations are monitored as well as serving as an operations technical branch keeping records of flight hours, maintenance services, coordination of communications, real-time technical, operational or emergency assistance to aircraft and crews, and providing meteorological information management. In addition, this base handles all types of maintenance

on the larger fixed-wing aircraft. Here one could easily come across a significant number of ATR 42s, Beechcrafts, Twin Otters, DHC-8s, DC-3Ts, C-26s, and the occasional AT-802.

Guaymaral

The Base Aérea de Guaymaral, located at Guaymaral Airport in the north of Bogotá, was inaugurated in 1985 when Hangar I was opened. At that time, the base also housed the police air training school, which later moved to Mariquita. The introduction of the UH-60 lead to an expansion of the base and Hangar II was opened at around 1999. The third hangar was constructed around 2004 to perform maintenance on the Huey II fleet. Since 2009, Guaymaral is also equipped with Command and Control facilities.

Nowadays, BA Guaymaral performs maintenance on all police helicopters and the smaller fixed-wing aircraft. It is equipped with about fourteen workshops to maintain avionics, hydraulics, instruments. Certification and calibration tasks are performed here too. The maintenance workshops are also capable of major maintenance (up to level 3) of rotational components, painting, and engine maintenance. Only major engine maintenance, i.e. complete strip-down and overhaul, is externalized to the US engine manufacturers.



Guaymaral, besides being a base for the helicopters of the Dirección de Antinarcóticos, houses the Policía Metropolitana Bogotá (MEBOG) too. Thus, one here could easily see not only C208s, Huey IIs, UH-60s, B212s and the sole B412 but also MEBOG's B206s, B407s, H369s and PA-31s.

Mariquita

The Escuela de Entrenamiento de Aviación (ESAVI) was initially established at Guaymaral. The expanded fleet and the need for better infrastructure led in 1990 to a new school being built at José Celestino Mutiz Airport, Mariquita near Bahía Solano, a municipality of the Chocó Department in Colombia.



The main air bases of the Aviación Policial are:
1 Bogotá
2 Guaymaral
3 Mariquita
4 Tuluá
5 Santa Marta

ESAVI does not train only the Colombian police aviation professionals because it includes police crews from all over Latin America, as well as the Colombian Army and Navy. The school provides training in all police aviation branches using both aircraft (B206s, C152s, C172s, and Huey IIs) and simulators.

Tuluá

Tuluá, a city located in the heart of Valle del Cauca, is a major industrial and commercial center, served by Heriberto Gil Martínez Airport, which nowadays is mainly used by training aircraft from the Marco Fidel Suárez Military Aviation School (EMAVI) of the Fuerza Aérea Colombiana.



The Tuluá Base Aérea Antinarcóticos, however, does not operate from the Heriberto Gil Martínez Airport but from a dedicated facility within the Antinarcóticos compound in the city. Police aviation missions in this southwestern region of Colombia began around 1996 but the base was at the Carabineros Police facility in Cali. A year or so later, a police aviation base was established at the Simón Bolívar Police School in Tuluá and, in 2003, it moved to the current location. This base is mainly equipped with Huey IIs.

Santa Marta

Santa Marta is the capital of Magdalena Department and the fourth-largest city of the Caribbean Region of Colombia. It is a very historic city because it is the second oldest in South America and Simón Bolívar died here in 1830 and is buried in Santa Marta Cathedral. The city is served by Simón Bolívar International Airport, located about 16 km from the center.

The Santa Marta Base Aérea Antinarcóticos however, like Tuluá Base Aérea Antinarcóticos, is not located at the airport but in the city itself. Its construction was started in 1983 to support air interdiction operations

in the northern part of Colombia. In 2003 it was expanded and today hosts a fleet of B212s.

The Aviación Policial was established 55 years ago with a three-ship fleet, without support infrastructure and lacking even its own pilots. Today it is a different story because the Aviación Policial is a well-prepared and professional force with one of the largest police fleets worldwide, complete with all its support facilities and infrastructure. The professionalism and dedication of the Aviación Policial ensure that it accomplishes its mission to maintain peace, tranquillity, public rights, and freedoms in Colombia.

Acknowledgments

The author wishes to acknowledge the support and assistance of the Policía Nacional de Colombia authorities, the Aviación Policial personnel, and 4Aviation who made possible the visit to El Dorado and Guaymaral and this reportage.



Sikorsky S-60L (main image and inset)

A330 MRTT ARRIVES AT EINDHOVEN

REPORT AND PHOTOGRAPHY BY JORIS VAN BOVEN AND ALEX VAN NOIJE



In the Netherlands, the McDonnell Douglas KDC-10 air-air-refueling aircraft are close to the end of their operational life. One of the two KDC-10s was already retired at the end of 2019 and the second KDC-10 will be retired at the end of 2020 or early 2021. These tanker aircraft will be replaced by the Airbus A330 Multi Role Tanker Transport (MRTT).

The international consortium *Multinational MRTT Unit (MMU)* will receive eight A330 MRTT aircraft, of which

five will be based at Eindhoven AB in the Netherlands as main operating base. The remaining three aircraft will be based at Cologne Bonn Airport, Germany. These aircraft will become part of the *NATO Multinational MRTT Fleet (MMF)*.

The MMU consists of the Netherlands, Germany, Belgium, Luxembourg, Norway, and the Czech Republic; where every country will pay for and get a certain amount of flying hours.

Two fire trucks of the Eindhoven AB's fire department welcome the first Airbus A330 MRTT aircraft of the NATO Multinational Multi-Role Tanker Transport Fleet (MMF)



The A330 MRTT aircraft will be multirole aircraft. Besides the main role as tanker, these aircraft can be used in the passenger and cargo transport role or in the MEDEVAC role. When all eight aircraft are delivered, at least one A330 will be available 24/7 for MEDEVAC.

The A330 MRTT aircraft are able to refuel all NATO aircraft with a boom for the F-15s, F-16s, F-35s, and two hose systems for refueling the Mirages, Rafales, Gripens, and Eurofighters. This will make the A330 more flexible than the KDC-10 with a boom only.

On Eindhoven AB, the European Air Transport Command (EATC) is coordinating the allocation of NATO resources regarding transport and air-refueling.

On Monday, 29 June 2020, the first A330 MRTT aircraft (with Dutch registration T-055) was officially handed-over by Airbus and accepted by the MMU. One day later on Tuesday, 30 June 2020, this A330 MRTT (T-055) was flown from Getafe AB in Spain to Eindhoven AB in the Netherlands. And after landing it received a traditional water-shower by the Eindhoven Fire Department.

A link to the video of the A330 MRTT arrival at Eindhoven AB can be found here: https://youtu.be/BrFedQ_IPcM



The A330-200 MRTT (main image) will replace the old KDC-10 (right)



▲ The MRTT lands at 14:50 hrs local time at it's new home base Eindhoven AB
▼ A330-200 MRTT, KDC-10, and C-17A (left to right)



▲ The A330-200MRTT on the taxiway to the ramp
Although the MRTT is operated by NATO, it wears Royal Netherlands AF markings ▼



EXERCISE SOBERANIA



REPORT AND IMAGES BY HORACIO J. CLARÍA



A-4AR *Fightinghawk* assigned to the Grupo Aéreo 6 de Caza (Fighter Wing) of the V Brigada Aérea waiting for take-off clearance



The Argentine Air Force (FAA) conducted the exercise "Soberanía 2019" from 10 to 14 November. Despite the decreasing budget situation during the last four years, the Argentine Air Force has managed to keep a quite interesting schedule of exercises and deployments along 2019. "Soberanía 2019" rounded-off the year with some very interesting milestones. This one-week advanced aerial combat training exercise was held in the BAM Río Gallegos, in the southern Patagonia region of Argentina. Its main aim was to offer realistic air-combat training for the Air Force

pilots and ground personnel, which included tactical navigations, air to air combat sorties with ground control coordination, plus a combined air operation (COMAO) training, including night flying operations. Also, "Soberanía 2019" became the scenario of three important milestones for the FAA. The A/OA-4AR Fightinghawk fighters from the V Brigada Aérea (Villa Reynolds) have returned to operate in the Southern region of the country for the first time since 2012, deploying five aircraft. For the first time in this region, the VI Brigada Aérea (Tandil) participated with one

IA-63 Pampa II and three brand new FADEA IA-63 Pampa IIIs. One objective of this event was the launch of a live AIM-9M Sidewinder missile from an A-4AR Fightinghawk.

The deployment of the aircraft began on Saturday, 9 November with the support of a Lockheed C-130 Hercules (I Brigada Aérea) and a Saab 340B (IX Brigada Aérea). A Mil Mi-171E helicopter from the VII Brigada Aérea was also enlisted for SAR operations to complement a local Bell UH-1H Huey II from the Sección de Aviación de Ejército 11 (Ejército Argentino). The Grupo 2 de Comunicaciones, based in Comodoro Rivadavia, deployed personnel and equipment to guarantee that the Direx (Exercise Direction) had permanent command and control over the air operations. The Direx was comprised by a staff of officers who assisted and assessed the Exercise Director in different areas such as Personnel, Intelligence, Operations and Logistics. The Escuadrón VyCA 2 (Airspace Vigilance and Control Squadron) from BAM Río Gallegos, operating the recently modernized fixed MTPS-43 radar, played a vital role in the exercise.

The air operations were divided into two stages. During the first days, Familiarization (FAM) and Forces Integration Training (FIT) flights took place. The FAM flights are very important at the beginning of every exercise, where the pilots, who normally do not fly

in this region, can adapt to the airfield and operation zones. Southern Patagonia is a very different scenario compared to the ones A-4s and Pampas normally operate. Constant and strong winds prevail in a region with different landscapes such as mountains, coasts, rivers, islands and large plains.

The FIT flights consisted in dissimilar air combat training (DACT) between A-4 and Pampa, with 1 versus 1 sorties, gaining more complexity with 2 versus 1 and 2 versus 2 scenarios. Each set up was supported by the Westinghouse MTPS-43 radar operators using several radar consoles. Briefings and debriefings took place in every flight among pilots and controllers to maximize the lessons where Ground Control Intercept (GCI) tactics were introduced.

"Soberanía" was a great experience for the Pampa Squadron. This young unit was formed in 2015 when the Mirage / Finger supersonic fighters were withdrawn from service. Originally equipped with the Pampa II, the first Pampa III were received in the second half of 2018. The main difference between both versions is the introduction of a full glass cockpit, a training data link EVA (Embedded Virtual Avionics) and In-flight Electronic Warfare Simulator (IFEWS). These systems enable the Pampa III as a 5th generation fighter trainer with the capability to generate different combat scenarios. During the FIT flights, the pilots and ground

A-4AR Fightinghawk (main image) assigned to the Grupo Aéreo 6 de Caza (Fighter Wing) of the V Brigada Aérea and a Mil Mi-17E from the VII Brigada Aérea (inset)



OA-4AR *Fightinghawk* (left), and A-4AR *Fightinghawk* (right) assigned to the Grupo Aéreo 6 de Caza (Fighter Wing) of the V Brigada Aérea

crew rounded-off a year of intensive training reaching the aircraft's maximum flight envelope and endurance. Moreover, during the 2 vs 2 setups, they performed ground controlled intercept (GCI) night operations using NVG with visual interception and identification against targets (A-4AR) operating in covert mode (no external illumination). These are very complex operations that show the outstanding training level achieved. Tactical navigations were also scheduled during the complete exercise. Navigations included Air Interdiction (AI) missions to attack different ground-based targets, using flight profiles LO-LO-LO, HI-LO-HI and a combination of them. At the beginning, these sorties were performed by the A-4AR and the Pampa III separately, ending with combined flights. In one of this sorties, a flight of four Pampa III landed at the Base Aeronaval Río Grande located on Tierra del Fuego island, performing tactical navigations over the Canal de Beagle channel and the Isla de Estados island in the extreme south of the country close to be Chilean border. A dispute with Chile regarding the sovereignty of three islands in this channel almost brought the two countries into an open war in December 1978, the so called "Beagle conflict". During those days, all the Argentine Air Force was deployed in the Patagonia with Chilean targets assigned, plus the Argentine Navy's task force



Ready for take-off - one OA-4AR and two A-4AR's lining up at the end of the runway

including the carrier ARA 25 de Mayo and submarines crossing the Drake Passage in the Pacific Ocean. The COMAOs built the second stage of the drill. Originally, three COMAOs were planned in order to have a Mission Commander of each of the deployed squadrons (A-4, Pampa and Mi-171), but finally only one was executed. In order to rehearse air superiority tactics, offensive counter-air (OCA) and defensive counter-air (DCA) operations were conducted by the COMAOs elements. OCA is to destroy, disrupt or degrade enemy air capabilities (runways, launch sites, airfields, etc.) by engaging them as close as possible to their origin. DCA is to protect friendly forces and vital interests from enemy air and missile attacks. Blue and Red Forces were established to simulate a military conflict. In the Blue Force, the A-4AR Fightinghawk played the strikers and sweepers against enemy aircraft or targets of opportunity in a designated area. Also comprising the Blue Force, a flight of Pampas and the Mil Mi-171E / Bell UH-1H helicopters formed a package which performed a Combat Search and Eescue (CSAR) drill in the nearby of BAM Río Gallegos. Pampa III were used as RESCORT (Rescue Escort) to protect the ground personnel to be recovered and the rescue helicopter from ground and air threats. A flight of Pampas flew quick reaction alert (QRA) to protect the airfield against the Red Force. A



Armed with a live AIM-9M Sidewinder air-to-air missile this A-4AR Firehawk taxis to the runway for take-off for the first launch of a live Sidewinder since the A-4AR Firehawk entered service in 1997.



First launch ever of a live AIM-9M *Sidewinder* from an A-4AR of the Argentine Air Force (air-to-air photos by FAA via author)



marked by the presence of the FAA's Comandante de Adiestramiento y Alistamiento, Brigadier Mayor Alejandro Amorós, who took part in the launch-flight onboard a two-seater OA-4AR.

The exercise ended fulfilling all the planned objectives, sharpening the pilots' skills, setting a standard for future drills. The main ingredients for this achievement was the great commitment of all the personnel and key leadership carried out by the Direx and the squadron leaders.



IA-63 Pampa III assigned to the Grupo Aéreo 6 de Caza (Fighter Wing) of the VI Brigada Aérea



IA-63 *Pampa II* assigned to the Grupo Aéreo 6 de Caza (Fighter Wing) of the VI Brigada Aérea



ROYAL INTERNATIONAL AIR TATTOO 2000

TEXT AND IMAGES BY
RALF PETER WALTER



If everything had gone as planned, this year would have been the 50th anniversary of the Royal International Air Tattoo (RIAT). Unfortunately, as with all major events, this year's RIAT also fell victim to the COVID-19 pandemic. In the past years, we have always reported about this unique, worldwide largest military aviation event. This year, we take a look back at the first RIAT in the new millennium, 20 years ago. At that time, more than 360 aircraft came to the Air Tattoo at RAF Cottesmore: about 290 military aircraft, 70 civil aircraft and four

aerobatic teams. This made the RIAT in July 2000 one of the largest Air Tattoos ever.

Let us hope that the RIAT will be back in 2021

The following abbreviations were used for the different air forces:

AustrAF	Austrian Air Force
BAF	Belgian Air Force
BrAF	Brazilian Air Force
BulAF	Bulgarian Air Force

FAF	French Air Force	RNLAF	Royal Netherlands Air Force
GAF	German Air Force	RNLN	Royal Netherlands Navy
GN	Germany Navy	RNoAF	Royal Norwegian Air Force
HAF	Hellenic Air Force	RussAF	Russian Air Force
IrAC	Irish Air Corps	SlovakAF	Slovak Air Force
ITAF	Italian Air Force	SpAF	Spanish Air Force
PAF	Polish Air Force	SweAF	Swedish Air Force
PN	Polish Navy	SwissAF	Swiss Air Force
RAF	Royal Air Force	UkrAF	Ukraine Air Force
RCAF	Royal Canadian Air Force	USAF	United States Air Force
RDAF	Royal Danish Air Force	USAFE	United States Air Force Europe



◀ ITAF F-104 ASA, 9 Gr / 4 St
USAFE F-15C, 48 FW / 493 FS ▶



◀ RAF Jaguar GR3, 16(R) Sqn
RCAF CF-188, 416 Sqn ▶



◀ HAF F-4E, 339 Mira
FAF Mirage 2000B, EC02.005 ▶





1



2



4



5



3

- 1 HuAF MiG-29UB, 59 HRE
- 2 RDAF F-16BM, Esk 730
- 3 GAF MiG-29, JG 73
- 4 RDAF F-16A, Esk 726
- 5 USAF F-16CG, 31 FW / 510 FS
- 6 PAF MiG-29, 1 PLM / 2 KOPK



6



1



2



3

- 1 RAF Tornado GR1, 14 Sqn
- 2 RAF Tornado GR4, 31 Sqn
- 3 GN Tornado IDS, MFG 2
- 4 RAF Tornado F3, 56(R) Sqn
- 5 RAF Tornado GR4A, 13 Sqn



4



5



▲ USAF F-15E, 48 FW / 492 FS
▼ RN Sea Harrier FA2, 899 Sqn



FAF Mirage F1C, EC03.033 ▲
USAF A-10A, 52 FW / 81 FS ▼





- 1 BAF Alpha Jet, 1 Wing / 11 Sqn
- 2 BAF CM-170 Magister, 1 Wing / Fouga Flight
- 3 AustrAF Saab 105Ö, FIRg3 A&E/D
- 4 ITAF AMX, 103 Gr / 51 St
- 5 RAF Hawk T1, DERA - Centre of Aviation Medicine
- 6 ITAF AMX-T, 103 Grp / 51 St
- 7 SlovakAF L-39C, Team Biele Albatrosy
- 8 RAF Tucano T1, 1 FTS



1



4



2

- 1 RNoAF C-130E, 335 Skv
- 2 RDAF C-130H, Esk 721
- 3 SweAF Tp84, F7 – First in Europe
- 4 RNLAF C-130H-30, 334 Sqn
- 5 USAF MC-130H, 352 SOG / 7 SOS
- 6 USAF WC-130H, 403 Wing / 53 WRS



5



3



6



USAF OC-135B
55 Wing / 45 RS
Open Skies



USAF B-1B
28 BW / 77 BS



1



4



2



3



5

- 1 RNLN P-3C, MARTPU
- 2 RAF Nimrod MR2, 42(R) Sqn
- 3 USN P-3C, VP-30
- 4 RAF Canberra PR9, 39 (1PRU) Sqn
- 5 PN M-28 R1, 3 DL



- 1 HuAF An-26, 80 Wing / 1 Transp Sqn
- 2 IrAC CN235MPA, 1 Support Wing
- 3 UkrAF An-72P, STC
- 4 SlovakAF An-26, 32 ZmDK / 1 Letka
- 5 ITAF G222TCM, 2 Grp / 46 BA
- 6 BulAF An-30, 16 TrAB
- 7 FAF Nord 262D, ETE00.044
- 8 UkrAF An-72P, STC



- BrAF KC-137, 2 GT (main image)
- USAF KC-135R, 100 ARW / 351 ARS (inset left)
- USAF KC-135R, 319 ARW (inset right)



▲ FAF Mirage IVP, ERS01.091
▼ USAF C-141B, 62 Wing / 4 AS



FAF Mirage IVP, ERS01.091 ▲
RussAF An-30B, Open Skies ▼





- 1 RN Jetstream T3, Heron Flight
- 2 ITAF PD 808GE, 17 Gr / 14 St
- 3 USAF C-20A, 86 AW / 76 AS
- 4 USAF UC-35A, HQ USEUCOM
- 5 FN Falcon 50MI, Flotille 24F
- 6 RAF Dominie T1, 55(R) Sqn
- 7 DHC-6-310 Twin Otter, British Antarctic Survey
- 8 RAF Jetstream T2, DERA



- RAF Seaking HAR3, 203(R) Sqn (main image)
- SpAF CH-47D, BHELTRAV (inset left)
- SwissAF AS532M1, Surveillance Wing (inset above)
- USAF MH-53M, 352 SOG / 212 SOS (inset right)

FALCON LEAP 2020

REPORT AND IMAGES BY
JORIS VAN BOVEN AND
ALEX VAN NOIJE UNLESS
NOTED



Royal Netherlands Air Force C-130H dropping paratroopers during Falcon Leap part two (PJE - para jump exercise) **main image** and performing CDS (Cargo Delivery System) drops **inset**.

Photos Dutch Defense Media Centre



The annual 'MarketGarden' parachute airdrop was held at the Ginkelse Hei near Arnhem, in the Netherlands, in September. Due to the Covid-19 pandemic, media access to this exercise was very limited. This exercise, called 'Falcon Leap', is divided into two parts.

Falcon Leap, part 1, from 07 to 11 September

Part 1 of this exercise consisted of the dropping of cargo from various military transport aircraft above the Deelen and Oldebroek training areas. It was planned to fly a mission over the training areas three times a day.

At the beginning of the week, a U. S. C-130 and a French C-130 deployed to Eindhoven Airbase to

practice together with C-130 Hercules aircraft of the Royal Netherlands Air Force. However, due to bad weather, no missions were flown in the first days of the week, causing the U. S. C-130 to return prematurely. The French C-130 left for France on Friday 11 September, after having flown several missions with the Dutch Hercules aircraft.

Falcon Leap, part 2, from 14 to 18 September

Part 2 of this exercise consisted of dropping paratroopers from various military transport aircraft above training areas where no spectators were allowed. These practice areas include Renkum, Deelen, and the Ginkelse Hei; all located around the city of Arnhem.

For this 2nd part of the Falcon Leap exercise, transport

aircraft from the Netherlands, Belgium, United States, and Germany flew two to three missions per day.

Overflight Eindhoven, 18 September

On 18 September 1944, the city of Eindhoven was liberated by the Allied troops. Every year on 18 September, there is a commemoration in Eindhoven, where at 8 p.m., one or more C-130s of the Royal Netherlands Air Force fly over the city. This year, the European Air Transport Command (EATC), with its

headquarters in Eindhoven, coordinated a unique fly-by with a Dutch C-130, a Belgian C-130, a French A400M and, a German C-160 Transall. Additional aircraft were a Supermarine Spitfire and a B-25 Mitchell from the Dutch Air force Historical Flight at Gilze-Rijen AB.

Paratroopers on their way to board the aircraft at Eindhoven AB for the second part of the exercise



Four C-130 *Hercules* and one C-160 *Transall* lining-up on the taxiway, waiting for clearance into take-off position



1



2



3

- 1 Three C-130 *Hercules* are returning to Eindhoven AB after having completed their mission
- 2 RNLAf C-130H *Hercules* with special tail marking "25 Years C-130 Hercules"
- 3 GAF C-160D *Transall*
- 4 USANG West Virginia C-130H *Hercules*



4



A beautiful shot of the French Air Force KC-130J returning to Eindhoven AB right before sun set

SPANISH ARMY CAIMANS

REPORT AND IMAGES
BY MARTIJN VENIX



Logroño-Agoncillo is located in the North of Spain in the well-known wine region of Rioja, where the Spanish FAMET (Fuerzas Aeromoviles del Ejército de Tierra, Spanish Army Airmobile Forces) is stationed with BHELMA III, equipped with the NH-90 "Caïman". In October 2019 I was welcome at this unit for two days to take a "peek in the kitchen".

After a warm and very friendly welcome we started at the Control Tower with a cup of coffee and Dutch 'stroopwaffles' which I brought from home. After that I visited the airfield and they informed me about the squadron, the airbase and their duties.

BHELMA III THROUGH THE YEARS.
BHELMA III was founded on November 26,

1974, under the name UHEL III. BHELMA stands for Batallón de Helicópteros de Maniobra, which in English means nothing more or less than Maneuver Helicopter Battalion. In 1989, the name of BHELMA III was adopted. From the establishment of the squadron, it was equipped with the well-known BELL UH-1B helicopter, which only gracefully shows off a pedestal on the

square in front of the control tower. At the time of my visit, he was taped exactly an hour or two after my arrival and prepared for a thorough makeover. In 2005, the squadron switched to HU-21 (Super Puma) and HT-27 (Cougar). Unfortunately, these types for this squadron are history and since 2016 BHELMA III has switched to the HT-29, or NH-90 "Caïman".



With regard to missions abroad, BHELMA III has also built up a reasonable track record over the years. BHELMA III has contributed in particular to conflicts that are still fresh in our memory as:

- 1991 PROVIDE COMFORT, Iraq
- 1998-00 SPAHEL, Bosnia
- 2000 KSPUHEL, Kosovo
- 2002 OPERACIÓN R-S, Isla de Perejil
- 2002-03 KIRSPAHEL, Kyrgyzstan
- 2006-13 ASPUHEL, Afganistán
- 2008 ALTUHEL, Bosnia
- 2008 LISPUHEL, Lebanon



to 16 in the near future. In 2018 the purchase was approved for a further 23 examples. However, BHELMA III did not receive any extra. Seven will be assigned to the Navy and 6 to the Air Force. The remaining 10 are for FAMET but will be shared among other units such as BHELMA IV and BHELMA VI.

NH-90 "CAIMAN" SERVING BHELMA III and the Spanish Armed Forces

In 2005 there was a discussion of and approval from the ministry for a total purchase of 45 NH-90 TTHs, including some examples for the Air Force. This number declined sharply during the crisis years. In 2012, there was still a purchase of 37 aircraft and eventually the first NH-90s entered Spanish service in 2016 and only an order of 22 units remained (16 for FAMET and 6 for the Air Force). At the moment, BHELMA III has 12 helicopters at its disposal and that number will grow

PILOT AND EDUCATION

At the moment there are about 35 pilots who are qualified to fly on the NH-90. The pilots start their education at ALA78, the air force unit which is stationed at Granada - Armilla. Here they start their training on the EC-120 Colibri for a period of three months. This



Definitions by NATO

Search and Rescue (SAR) — The use of aircraft, surface craft, submarines, and specialized rescue teams and equipment to search for and rescue distressed persons on land or at sea in a permissive environment.



Combat Search and Rescue (CSAR) — The detection, location, identification and rescue of downed aircrew in hostile territory in time of crisis and war and, when appropriate, isolated military personnel in distress, who are trained and equipped to receive combat search and rescue support.

Medical Evacuation (MEDEVAC) — The capability of transporting patients during military operations under continuous medical care.

Special Forces (SF) — Forces organized, trained, and equipped to conduct special operations with an emphasis on unconventional warfare capabilities.



is followed by another three months on Sikorsky S-76. Here they mainly practice so-called IFR (Instrumental Flight Rules). This means that they are able to fly with the help of various instruments in bad (weather) conditions. After the first half year, the pilots continue their training at the army aviation school at Colmenar Viejo air base, where they learn combat flight procedures for a period of six months on the EC-135 helicopter. This type of helicopter regularly uses the field of Logroño for training flights. During my visit I had the pleasure to see two of these aircraft. All helicopter pilots receive this training as basic training, after which they continue as a pilot to become specialized in one of the various types assigned to the Spanish army.

After this training, the pilots continue as a NH-90 pilot and until six months ago the pilots received the simulator training at the French army aviation school in Le Luc. (France)

This is no longer necessary because since November 2019 (?) BHELMA III has its own simulator present at Logroño.

Of course, there is also a chance that a pilot after their training on the EC-135 will be specified as a pilot on a different type of helicopter instead of the NH-90.

During my visit there were also some pilots of ALA48

present at Logroño for several weeks for the conversion from Puma to NH90. This Air Force squadron is based at Cuatro Vientos near Madrid and is the first Spanish air force squadron to fly the NH90. At the time of writing and / or publication, the first NH90 was commissioned by ALA48 and will fly operational from Cuatro Vientos later this year.

TASKS AND FUNCTIONS

The tasks of the NH-90 in the service of BHELMA III are very diverse and versatile. Tactical transport of equipment and units, special operations units, MEDEVAC, search and rescue, and combat personal recovery missions (including CSAR missions) are all part of this unit's duties. But due to the northern location of this field, they are very close to mountainous terrain. This is one of the specialties of the unit. With BHELMA III they have a lot of experience in flying in this mountainous area, which means that other FAMET units come to Logroño to be trained by BHELMA III in flying in such areas. Not only domestic units train in Logroño. In the past delegations from Germany, the Netherlands and Belgium practiced in mountainous areas.



EJERCICIO JABALÍ 2019

During my visit I was very pleased to attend a first exercise "ejercicio JABALÍ 2019". This is an exercise first held this year in conjunction with the GAR of the Guardia Civil of Spain. GAR stands for Grupo de Acción Rápida, a specially trained anti-terrorism unit of the Guardia Civil. The scenario was that a pilot was missing in an extremely dangerous enemy area. This area has been simulated in a location outside the city of Logroño, where a complete village has been rebuilt which is used by the army and police for exercises. The exercise was divided over two days. The first day training lessons were executed at the ground at Logroño air base. In the afternoon two NH90's and a small delegation of heavily trained GAR units left for the location where the action would take place. Personal was dropped in the 'enemy' area to explore the area and to trace the location of the missing pilot

and off course the location of the enemies. All the necessary data was collected in a very short period of time to start a rescue operation in the short term. That part of the exercise took place the next morning again with two NH90's consisting a crew of four people. two boardgunners equipped with M3M board guns and eight heavily equipped soldiers. During the evacuation a soldier was hit by the terrorists, which lead to a necessary Medevac operation. These simulated terror units were stationed in the area to act as opponents to make the operation as real as possible. This exercise has been very successful for both parts and is likely to be continued in the future in cooperation against terrorism and warfare.

I would like to thank BHELMA III for this nice experience which will hopefully lead to a nice sequel. (follow-up)





PARIS NATIONAL MILITARY PARADE

REPORT AND PHOTOGRAPHY BY JORIS VAN BOVEN AND ALEX VAN NOIJE UNLESS NOTED



Every year on 14 July, the National Military Parade (défilé) is held in the French capital Paris to commemorate the beginning of the French Revolution. On 14 July 1789, the Bastille prison was raided by the people from Paris, an event that started the French Revolution. A military parade is held on the ground with foot-soldiers, trucks and tanks; while overhead

aircraft and helicopters make a flyby in the air parade (défilé aérien) over Paris.

In 2020, the Corona/COVID 19 pandemic changed everything. The ground parade was minimized to the Place de la Concorde only and visitors were not allowed; they had to watch the parade via their TVs.

The main theme of the parade was the liberation of France 75 years ago and the 80th anniversary of the 'Free French Air Force' (Forces Aériennes Françaises Libres FAFL) in May 1940.

The end of the parade consisted of a number of helicopters from Army (Armée de Terre), Air Force

(Armée de l'Air), Navy (Marine Nationale), and the Police (Gendarmerie Nationale).

This Rafale C assigned to EC02.030 *Normandie-Niemen* at BA113 Mont-de-Marsan shows a tail with a special painting in memory of the Forces Aériennes Françaises Libres



Air bases

The participants departed from various air bases, sometimes from their home bases:

- Air Force C-130, A400M, E-3F, C-135F, A330MRTT, Mirage 2000D, Mirage 2000C;
- Marine Rafales, Atlantic, E-2, Falcon 50M.

Others flew from air bases close to Paris if fuel was an important factor:

- BA Évreux west of Paris for Mirage 2000C and Rafales, local transport aircraft;
- BA Villacoublay, south of Paris for Marine and Air Force helicopters;
- BA Creil, north of Paris for Army helicopters.

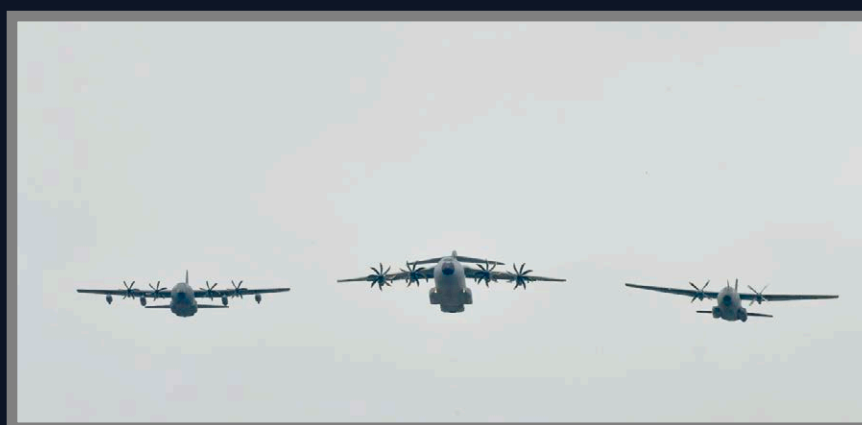
Base Aérienne Évreux

In the morning of the 14th, at Base Aérienne Évreux, there was a photo-moment to witness the flight-preparations and take-off of some fighters.

The participating Rafales (one Rafale with the special decorated tail of EC 2/30 Normandie-Niemen) took off from runway 22 to fly over Paris, while the spare aircraft did their flight-preparations but only left BA Évreux after the parade was over.

The participating Mirage 2000C of EC 2/5 Île-de-France taxied to the runway, but take-off was cancelled due to a too low cloud ceiling.

From BA Évreux, a local C-160 Transall and two CN235 flew in the parade, and these aircraft returned to BA Évreux afterwards. There are rumors that the five C-160 Transalls will be retired very soon, so this might have been one of the last opportunities to take photos of the French C-160 Transall.



The aircraft were flying in formations over the business district La Défence (top left) and over the Arc de Triomphe (right).

Some of the formations were (middle, top to bottom): KC-135FR with Mirage 2000C and Rafale of the French Air Force, E-2C with Rafale of the French Navy, C-130 with A400M and CN235.

All photos French Air Force (FAF)





Forces Aériennes Françaises Libres

The Forces Aériennes Françaises Libres (FAFL) or Free French Air Force was established on 8 July 1940 by General Charles de Gaulle with members of the French Army, Navy and Air Force which left France for the United Kingdom.

The original squadrons of the FAFL were:

- Groupe de chasse n°1 Alsace (341 Sqn RAF)
- Groupe de chasse n°2 Île-de-France (340 Sqn RAF)
- Groupe de chasse n°2 Normandie, later Régiment de chasse Normandie-Niemen (Soviet Union)
- Groupe de bombardement Lorraine (342 Sqn RAF)
- Groupe de bombardement Bretagne

Special tail

One Dassault Rafale C of the Escadron de Chasse (or Fighter Squadron) EC02.030 *Normandie-Niemen* at BA113 Mont-de-Marsan had a special 'Forces Aériennes Françaises Libres' tail to commemorate their stay in the Soviet-Union during WW2.



▲ French Air Force CN235M-200 of ET01.062
▼ French Air Force Rafale C of EC02.030



French Air Force Mirage 2000B of EC02.005 ▲
French Air Force C-160R of ET00.064 (photo FAF) ▼



75 YEARS 298 SQUADRON

REPORT AND IMAGES BY JORIS VAN BOVEN AND ALEX VAN NOIJE



In April 2020, the Dutch 298 Squadron, flying with the Boeing CH-47D Chinook helicopter, celebrated two anniversaries.

- 75 years 298 Squadron
- 25 years of the CH-47 Chinook helicopter within the Royal Netherlands Air Force

For both anniversaries, the Chinook with serial D-666 was painted on both sides. On one side with the squadron symbol (in Dutch 'Libelle', in English 'Dragonfly'). On the other side the 'Grizzly' symbol, the (un)official nickname of the squadron.

Due to COVID-19 in Europe, a large event was canceled and it was replaced by a flyby overhead the Netherlands. At several locations, photographers were invited to take photos of the Chinook at the various landing sites.

Taking off from their home base Gilze-Rijen, the first stop was made at the GLV5 low-flying training grounds. Two passes and two browned-out sand landings were performed to show both sides of the Chinook to the photographers. Later that day other Dutch training grounds and air bases were visited to show-off this specially painted helicopter.

The motto of the 298 Squadron is 'nihil nobis nimium' (nothing is too much for us).

The 75 Years color scheme of the CH-47D with the serial D-666, also known as *The Beast* shows a "Grizzly", the squadron's radio callsign and (un)official nickname.



History of the 298 Squadron

298 Squadron was founded on 1 March 1950, as the 6 ARVA (Artillerie Verkenning Afdeling - Artillery Reconnaissance Division) at Ypenburg Air Base. The 298 Squadron was the first unit that was established as a part of the Light Aircraft Group (GPLV). The amount of personnel and the available accommodation was very limited after the founding. The unit operated with several Auster light reconnaissance aircraft. The squadron moved soon to Soesterberg Air Base. Also, Soesterberg was not for a long period the home base of the unit; they moved to Deelen Air Base in 1951. The Auster remained in service until 1953 with the 298 Squadron. It was replaced by the Piper Cub in 1952.

This aircraft was used for artillery reconnaissance and passenger transport. The Piper Cub remained in active service until 1968. In addition to the Piper Cub, the squadron was also equipped with the Hiller R23 Raven in 1955. This was the first helicopter in service at the RNLAf. Two years later the squadron moved again to Ypenburg Air Base. In 1959 they received their first Allouette II in 1959. This helicopter was in service to perform the SAR task. One of the new flights which were added to the 298 Squadron was the SAR (Search And Rescue) flight. The SAR flight moved to Leeuwarden Air Base and was later renumbered as the 303 SAR Squadron. The 298 Squadron moved back to Deelen Air Base, because Ypenburg Air Base

was closed due to budget cuts. The Allouette II was replaced by the Allouette III in 1964. The squadron moved for the last time in 1966 to Soesterberg Air Base. The unit switched completely to the Allouette III.

The Allouette III was after more than 30 years of operational service replaced by the Boeing CH-47D Chinook in 1995. The Royal Netherlands Air Force decided to follow a new course in 1995. The helicopters will play a bigger role within the RNLAf. The current Helicopter Group (GPH) converted to the new model. The name of this organization became Tactische Helikopter Groep Koninklijke Luchtmacht (THG-KLu).

The 298 Squadron received 13 Chinook helicopters in this new model. The first seven helicopters were used helicopters which were purchased in Canada. These helicopters are modified to the CH-47D standard. The last six helicopters are newly built by Boeing. 298 Squadron received with the arrival of the Chinook the heavy transport duty within the THG-KLu. The core job of the no 298 Squadron is the transportation of the 11LMB (11 Airmobile Brigade), the Marine Corps (MARNS), and the Special Operations Forces (KCT).

In addition to the CH-47D, the no. 298 Squadron also has several CH-47F helicopters which can be identified by the gray color scheme.

The other side of *The Beast* shows a "Dragonfly", the unit's symbol.



The so-called "brown-out" landing in a dusty environment always is a challenge for the pilots and requires continuous training.





GOOD-BYE ANSCA



REPORT AND PHOTOGRAPHY BY ISTVÁN KELECSÉNYI



On June 21, 2020, an era in the history of the Hungarian Air Force ended. The last type designed and manufactured in the Soviet Union, the Antonov AN-26 (nickname: Ansa) medium transport aircraft type, had its last press public flight and withdrawal ceremony at the Vitéz Szentgyörgyi Dezső Air Base in Kecskemét. The aircraft is not a product of a Russian but of Oleg Konstantinovich Antonov OKB, a Ukrainian

design office and factory.

The first of three prototypes had its maiden flight on 31 May 1969. It was presented that year at Le Bourget as part of the Paris Aviation Salon. The type was launched until September 1970. However, series production started in 1969 and on 29 August, the first series-produced AN-26 left the Kiev aircraft factory. Production proceeded at a rapid pace, with

14-16 aircraft produced per month, while the AN-24 and 30 series were also built next to it. Production continued with 1,398 units until 1986. The aircraft produced were made in four versions, but only one AN-26A and one AN-26D was built. Of the aircraft, 564 were transferred to the Soviet Air Force, 420 were exported, and the rest were received by other Soviet organizations. In China, it was manufactured by the

Xian Aircraft Factory under type designation J-14 and then J-7 without a license.

Training for the designated naval and technical personnel of the Hungarian People's Army began in 1973 in the former Soviet Union, and in 1974 the delivery of the Antonovs to Hungary started. Serials 202, 203, 204, 208, 209, and 210 were followed in 1975 and 1976 by four more aircraft with registration





numbers 405, 406, 407, 603. Many of the AN-26s were also based in Szentkirályszabadja, Tököl, Szolnok and Kecskemét air bases during their service. Only one of them was on the list of losses. The AN-26, serial 210 crashed on 6 December 1982, in Szentkirályszabadja. Four crew members were killed in the crash. In 1997, after the change of regime, five Ancsa were withdrawn from service. In 2004, the AN-26 with registration number 110 was procured from Ukraine to increase the Hungarian Air Force's air transport capacity. Although some aircraft were overhauled in Ukraine and their service life extended, by 2018 only one of Hungary's An-26 remained airworthy. With increasing international obligations, the Hungarian Defense Forces experienced a significant shortage of long-range transport capabilities. In the past three years, they

had to rent about 100 times an aircraft to transport sick or injured personnel from operation areas back to Hungary. The shortage of transport aircraft was alleviated by joining the HAW / SAC program (Heavy International Airlift Regiment) stationed at the Pápa Airbase in Hungary, and then by purchasing two used Airbus A319 passenger aircraft, which received the registration numbers 604 and 605. However, the parachute, vehicle, and container transport capacity is temporarily reduced by withdrawing the Ancsa. In addition to the commanders of the Hungarian Armed Forces and the Air Force, Dr. Tibor Benkő, Minister of Defense, also took part in the withdrawal ceremony. The current operators, technicians, and pilots, several of the retired crew and technicians, including Brigadier General Bertalan Farkas, an astronaut who flew the

AN-26 for a short time, also paid their respects at the event. In his speech, the Minister of Defense highlighted the forty-five years of sacrificial work of the personnel, and with Colonel Ferenc Korom, Commander of the Defense Forces, he praised several soldiers operating and flying the Ancsa. The withdrawal does not mean the immediate shutdown of the 406-registered aircraft, more flights are planned and only two Antonovs are removed from service.

In the flight after the ceremony, accompanied by a pair of JAS-39 Gripen aircraft, the old transport aircraft took off from the concrete in Kecskemét, and then made a short flight in the airspace of Central Hungary. Some data from the Hungarian history of AN-26:

- By June 11, 2020, the number of hours flown: 830 thousand.
- Distance traveled: 31 million km (this is like 773x orbiting the Earth at the equator or 80x flying the Earth-Moon distance)
- Locations visited: three continents (Europe, Asia, and Africa), 47 countries, 179 airports.

Despite the withdrawal of the AN-26 and equipped with new transport aircraft, the motto of the transport squadron will remain: Anything, anywhere and anytime.





ROMANIAN AIR FORCE NEWS

REPORT AND PHOTOGRAPHY BY IGOR BOZINOVSKI



Romania received additional ex-Portuguese F-16AMs as Aerostar becomes F-16 Maintenance Center

On 14 August, Romania received another two F-16AM fighter jets in what marked the start of the delivery of the five additional, second-hand F-16A/B Fighting Falcon jets Bucharest agreed to acquire from Portugal in December 2019. The aircraft landed at Fetești-Borcea Air Base a week after the Romanian Air Force (Forțele Aeriene Române, FAR) and the local, Bacău-based aerospace company Aerostar SA signed a collaboration protocol on 7 August. According to the Romanian Ministerul Apărării Naționale (MAPN,

Romanian Air Force F-16AM, manufactured 27 July 1984, ex-U.S. Air Force 83-1080 and ex-Portuguese Air Force 15135

Ministry of National Defence), it turned the aerospace company into a F-16 Maintenance Center for FAR's F-16 aircraft and their Pratt & Whitney F100 afterburning turbofan engines.

The FAR-Aerostar protocol ensures the concentration of all necessary resources required for continuous logistics support of the F-16 aircraft in a single maintenance, repair, overhaul and modernization center located in Romania, a nation that already operates 12 F-16 Block 15 MLU fighters (nine single-seat F-16AMs and three twin-seat F-16BMJs). These former Portuguese Air Force aircraft were refurbished before joining the 53rd Fighter Squadron at Fetești-Borcea during 2016 and 2017. This finally initiated the long-postponed modernization of FAR's supersonic component that is still dominated by the Soviet-era built, Elbit/Aerostar-modernized MiG-21 Lancer fighter jets.

The package of additional five F-16A/Bs consists of four single-seat F-16As and one two-seat F-16B, all of which should be modernized by Industria Aeronautică de Portugal OGMA to F-16AM/BM standard before their delivery to Romania. With the first two F-16AMs now delivered, an additional two are expected in the course of the year, with the final example to follow in the first quarter of 2021.

The acquisition of these five F-16s would help to complete FAR's 53rd Fighter Squadron at Fetești which will then operate 17 Fighting Falcons. The new aircraft will have the same M.5.2R configuration as Romania's existing 12 F-16s, but Bucharest states that all jets will be raised to a new standard designated M.6.X., very likely with heavy involvement of Aerostar.

Another two F-16 squadrons (18 aircraft each) should become available to FAR by the end of the decade under the March 2019 announced plan of MAPN for the procurement of further 36 such new-build or second-hand aircraft aimed to replace FAR's Lancer fleet that currently consists of 26 jets (20 single-seat MiG-21MF/MF-75 Lancer-C interceptors and six twin-seat MiG-21UM Lancer-B trainers). These aircraft are serving with the 711th Fighter Squadron at Câmpia Turzii and the 861st Fighter Squadron at Fetești-Borcea.

Aerostar is the leading aerospace and defense company in Romania with legacy in maintenance, overhaul and modernization of all versions of MiG-21 jets and an astonishing portfolio of over 4,000 overhauled aircraft since 1953. Today the company is specialized in production, assembly and integrations, integrated logistic support for a wide range of defense and aviation systems. In March 2019, Aerostar



joined Raytheon's global supply chain for Patriot Air and Missile Defence System and supports Romania's seven Patriot batteries that were purchased in the most advanced "Configuration 3+" together with an undisclosed quantity of GEM-T and PAC-3 MSE interceptor missiles. The Romanian company is now able to export parts and sub-assemblies to the other 15 Patriot Partnership nations that together hold more than 220 Patriot units.

The Romanian Air Force now operates 14 F-16 Block 15 MLU fighters (11 single-seat F-16AMs and 3 twin-seat F-16BMJs) **above**

This F-16AM was manufactured on 27 June 1984 and flew with the U.S. Air Force (serial 83-1073) and the Portuguese Air Force (serial 15132) **right**



Overhaul and Modernization of IAR-99S Jets

On 14 August, the Romanian Ministerul Apărării Naționale (MAPN, Ministry of National Defence) General Directorate for Armaments and Avioane Craiova S.A. closed a contract with Avioane Craiova S.A. for the general overhaul and modernization of ten Forțele Aeriene Române (FAR, Romanian Air Force) IAR-99 Standard (IAR-99S) single-engine jet trainers. The EUR 56.86 million agreement calls for the last modernized aircraft to be delivered to FAR within 48 months. The MAPN hopes that the first modernized jet will enter verification testing after 22 months in June 2022.

The jets will be modernized to IAR-99SM configuration (SM stands for Standard Modernizat which translates as Standard Modernized) with the aim for FAR to have an aircraft capable for use in the advance training role needed for the smooth transition of Romanian military pilots to F-16AM/BM single-engine jet fighters. In addition, these modernized jets should be capable of executing close air support (CAS) missions as well as interception of slow speed airborne targets.

According to MAPN, the IAR-99S revitalization and modernization works will also involve other Romanian and foreign parties, which will lead to the horizontal development of the national industry and would result in the "technological evolution of the Romanian aeronautical industry, whose products are so necessary for the Romanian Air Force."

In a government session on 21 May, the Romanian Minister of National Defense, Nicolae Ciucă, commented the IAR-99S modernization process: "Sixty million Euros are available for the first stage and approximately 40 million Euros for the second stage." With the recent agreement being worth slightly less than the declared first-stage financial allocations, it remains unclear what the signed agreement really covers, and if, when and for what purpose MAPN will spend the budgeted second-stage 40 million Euros.

Romania's military currently has 20 IAR-99s with half of them being non-modernized IAR-99 Standard jet trainers (serials 701-708 and 715-716) serving FAR's Școala de Aplicație a Forțelor Aeriene "Aurel Vlaicu" (S.A.p.F.A., the Application School) at Boboc. Additional nine Elbit-upgraded IAR-99C Șoim (Hawk) advanced training and light attack aircraft capable of performing close air support and reconnaissance missions (709, 711-713, 717, 720, 722 and 724-725) are flying with the 951st Advanced Air Training Squadron of the 95th Air Base "Erou Căpitan Aviator Alexandru Șerbănescu" in Bacău.

Another IAR-99C (719) is also in service with the Craiova-based La Centrul de Cercetări și Încercări în Zbor (CCIZ, Flight Research and Test Center) subordinated to MAPN's Agenția de Cercetare pentru Tehnică și Tehnologii Militare (ACTTM, Military Equipment and Technologies Research Agency).

Being the first jet trainer fully designed and built in Romania, the IAR-99 made its first flight on 21 December 1985. Serial production started in 1987 as a replacement for FAR Aero L-29 Delfin and Aero L-39 Albatros jet trainers. A total of 27 Rolls-Royce Viper Mk632-41 powered IAR-99s, including three prototypes (S-001 to S-003) were produced in Craiova. Six aircraft were lost in various accidents since 1990, including prototypes S-001 and S-002 (designated 7002 at the moment of the accident), IAR-99 Standard jets 710 and 714, and IAR-99C Șoim aircraft 718 and 723.

The third IAR-99 prototype (7003, ex S-003) remains with Avioane Craiova S.A.. Together with the Bucharest-based Institutul Național de Cercetări Aeronautice "Elie Carafoli" (INCAS, the National Institute for Aerospace Research) and Leonardo's Airborne and Space Systems division, the aircraft was modified into the IAR-99TD technological demonstrator under a 2015-promoted initiative.

Equipped with Leonardo Vixen 500E active electronically scanned array (AESA) radar, the IAR-99TD was supposed to be ready for testing by the end of 2017 with the aim to test and further develop new technologies for a new-generation of advanced Romanian jet trainer with enhanced combat capabilities. The current status of IAR-99TD is not known but it is very likely that at least part of the know-how accumulated through that program will be implemented in the incoming modernization of FAR's 10 IAR-99 Standard jet trainers.

Some of the Romanian Air Force's IAR-99S's, photographed at BIAS in 2019





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