

EUROPEAN

PART TWO
ITALY TO PORTUGAL

AIR POWER SURVEY



JEROEN BRINKMAN

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AFM and its network of correspondents continues with its look at the Air Forces Of Europe which started last month.

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THE FORTHCOMING period is going to be challenging for the Italian Air Force (IAF). Looking at the various sectors, the first to be mentioned is air defence. As already reported, the F-104 fleet is destined to be fully retired by 2004, but even during 2002 the 20° Gruppo OCU is accepting students for transition courses. Some Italian F-104 pilots are undertaking flying assignments on modern fighters (F-16C and CF-18) thanks to exchange duty agreements with the US Air Force and Canadian Armed Forces.

At the end of 2002, the IAF Test Wing should start acceptance flights of the first series production Eurofighter EF 2000. It is likely that at the beginning of 2003, the 9° Gruppo of 4° Stormo at Grosseto will commence its conversion onto the new fighter, firstly at the Caselle Alenia facility and then at its home base. In mid-2003, it is expected that delivery will commence of the first batch of F-16ADFs, which will be assigned to the 23° Gruppo of 5° Stormo at Cervia.

The re-equipment of three Gruppi with the Falcon should take place over a brief period, probably less than one year. The 24 Tornado ADVs leased from the RAF (now equipping only the 12° Gruppo at Gioia del Colle) will be returned to the British in 2004-2006, when the EF 2000 will be available. In 2002 the new AACMI (Autonomous Air Combat Manoeuvring Instrumentation) pod becomes operational, using the FPR system provided by the German BGT under licence from Israel Aircraft Industries. Italy has purchased 58 pods and eight ground stations.

There is little new to report on the attack component of the Italian Air Force. In 2002, test activity will commence in the Tornado Mid-Life Update programme, which will conclude in 2005 and involve both the IDS and ECR fleets. This will include armament, avionics, software and cockpit upgrading, and one of the initial elements of the programme is the integration of the Storm Shadow weapon system. At the beginning of 2002, the AMX fleet was still suffering reliability problems, while an upgrade programme is due to begin to integrate the CLDP laser pod and the GBU-31 JDAM bomb.

As far as the transport fleet is concerned, Lockheed-Martin C-130J deliveries are well under way and the 50° Gruppo, as well as the 2° Gruppo, is now operational on the new aircraft. As already announced, delivery of the 22nd and last aircraft will be completed in 2005. Still pending is the option on two more aircraft, which could be assigned to the SIGINT role, replacing the sole G.222VS currently in service. The contract for the purchase of 12 new LMATTS C-27Js has still to be signed, although it is a firm contract comprising two batches of five and seven aircraft respectively. Deliveries, however, have slipped from 2002 to 2003-2004. The C-27J attained military certification in December 2001. Delivery of the second batch of six P.180 Avanti VIP aircraft is well under way. Finally, an additional Airbus A319CJ and a Falcon 900EX have been ordered by the Italian Government. The new tanker/transport aircraft for the IAF has



A stopgap fighter - the leased Tornado ADVs of the Italian Air Force will be replaced by the Eurofighter when the type finally appears in service in 2004. This Tornado flies with the 12° Gruppo/36° Stormo from Gioia del Colle. KEY - STEVE FLETCHER

AOB: ITALIAN AIR FORCE (AERONAUTICA MILITARE)

1° Brigata Aerea			636° Sq Coll	SIAI S.208M MB.339 Piaggio P.180	
2° Stormo	Rivolto				
14° Gruppo CB	AMX/AMX-T				
602° Sq Coli	SIAI S.208M		37° Stormo		Trapani
3° Stormo	Villafranca		18° Gruppo CIO	F-104S ASA-M	
132° Gruppo	AMX		637° sq coli	SIAI S.208M	
603° Sq Coli	SIAI S.208M				
4° Stormo	Grassetto		46° Brigata Aerea		
9° Gruppo CIO	F-104S ASA-M		2° Gruppo TM	C-130J/G.222	Pisa
20° Gruppo AO	TF-104GMF-104S ASA-M		50° Gruppo TM	C-130H	Pisa
604° Sq Coli	SIAI S.208M		98° Gruppo TM	G.222	Pisa
	AB.212AM MB.339		41° Stormo		Signonella
5° Stormo	Cervia		88° Gruppo AS	Br 1150 Atlantic	
23° Gruppo CIO	F-104S ASA-M		64a Sq Coli	SIAI S.208M	
605° Sq Coli	SIAI S.208M		50° Stormo		Piacenza
6° Stormo	Ghedi		155° Gruppo ETS	Tornado ECR	
102° Gruppo CBRTOT Tornado IDS			655° Sq Coli	SIAI S.208M	
154° Gruppo CBOC/S Tornado IDS			51° Stormo		Istrana
606° Sq Coll	SIAI S.208M		103° Gruppo CBR	AMX	
9° Stormo	Grazzanise		132° Gruppo CBR	AMX	
10° Gruppo CIO	F-104S ASA-M		651° Sq Coli	SIAI S.208M AB.212E Piaggio P.180	
609° Sq Coli	SIAI S.208M				
9a Brigata Aerea			53° Stormo		Cameri
14° Stormo	Pratica di Mare		653° Sq Coli	SIAI S.208M, P.180, AB.212E	Linate
8° Gruppo	G.222RM Boeing 707T/T		61° Stormo		Lecce
71° Gruppo GE	G.222VS PD 808GE		212° Gruppo SVBIA	MB.339A/C	
			213° Gruppo SVBIA	MB.339A/C	
15° Stormo	Pratica di Mare		70° Stormo		Latina
81° CAE SAR	AB.212		207° Gruppo SVBIE	SF.260A/M	
85° Gruppo SAR	HH-3F, AB.212E		674° Sq Coll	MB.339A	
615° Sq Coll	AB.212E		72° Stormo		Fresinone
15° Stormo maintains the following SAR detachments			208° Gruppo SVE	NH 500E	
82° Centro SAR	Trapani		672a Sq Coll	No aircraft	
83° Centro SAR	Rimini		303° Gruppoddi Volo Autonomo		Guidonia
84° Centro SAR	Brindisi		505° Squadriglia	P 166DL3/APH	
RSV (Reparto Sperimentale Volo - Flight Test Wing)			313° Gruppo Addestramento Acrobatico		Rivolto
Pratica di Mare			Trece Tricolori	MB.339PAN	
311° Gruppo RSV	Various types				
30° Stormo	Cagliari		670° Squadriglia	AB.212	Decimomanu
86° Gruppo AS	Br 1150 Atlantic		Soccorso		
31° Stormo	Ciampino		e Collegamenti	MB.339A	
93° Gruppo TS	Falcon 50/900EX SH-3D TS		672° Sq Poligono	AB.212	Perdasdefogu
	Gulfstream III		Interiorze		
306° Gruppo TS	Airbus A319CJ		Salto di Quirra		
			MITCM Malta	AB.212	Malta
32° Stormo	Amendola		Centro Volo a Vela		Guidonia
13° Gruppo CBR	AMX		423° Squadriglia	Twin Astir L-13 Blanik A 21 Calif Ventus 2B Nimbus 4 SIAI S.208M	
101° Gruppo OCU/CBAMX-T/AMX-T					
632° Sq Coli	SIAI S.208M				
36° Stormo	Gioia del Colle				
12° Gruppo CIO	Tornado ADV (to get F-16A/B in 2003)				

GLOSSARY

AO	Addestramento Operativo	Operational Conversion Unit	SE	Sorveglianza Elettronica	Calibration
AS	Anti-somergibili	ASW	SVBAA	Scuola Volo Basico Avanzato	Basic & Advanced Jet
CB	Caccia Bombardieri	Fighter-bomber (FB)		Aviogetti	Training School
CBO	Caccia Bombardieri Ognitempo	All-weather Fighter-bomber	SVBIA	Scuola Volo Basico Iniziale	Basic & Initial Jet
CBR	Caccia Bombardieri Ricognitori	FB/Reconnaissance		su Aviogetti	Training School
CI	Caccia Intercettori	Fighter Interceptor	SVBIE	Scuola Volo Basicoe Avanzato	Basic & Advanced Flying
CIO	Caccia Intercettori Ognitempo	All-weather Interceptor		ad Elica	Training School
CR	Caccia Ricognitori	Fighter Reconnaissance	SVE	Scuola Volo Elicotteri	Helicopter Training School
GE	Guerra Elettronica	Electronic Warfare	TM	Transporto Medio	Medium Transport

been selected, and is to be the Boeing 767T - deliveries of which should commence in 2005-2006, the initial batch comprising four aircraft.

In the training sector, the second batch of 15 Aermacchi MB.339CD is due to commence delivery, starting in the summer of 2002. Following evaluation of the type, the IAF is also due to sign a contract for about 30 new Aermacchi SF.260Es, destined to replace the old SF.260AMS in 70° Stormo. The older aircraft will be returned to the company. A similar agreement is likely with the Swiss company Pilatus and concerns the replacement of the old SIAI-Marchetti S.208M liaison aircraft with around 12 Pilatus PO6s. Finally, on March 1, 2002, 1° Gruppo Velivoli Teleguidati (UAV Squadron) was established within 32° Stormo at Amendola air base. This unit is destined to operate the RQ-1A Predator UAV, five of which have been purchased - these are due to enter service at the end of 2002 and the beginning of 2003. The Predator will be operated in support of the Italian Air Force and the Italian Navy.

Italian Navy

The most important current programme is the introduction into service of the new EH-101 heavy helicopter, deliveries of which commenced to Luni in 2001. Currently, the entire fleet is assigned to 1° Gruppo Elicotteri, which still operates some SH-3D/H Sea Kings and will attain initial operational capability in the ASW and SAR roles in 2003. The Gruppo will also serve as OCU for the type. The EH-101s are still undergoing Operational Test & Evaluation flying with the NuVO, also based at Luni. The Navy has now ordered 20 EH-101s, with another four on option. Test activity by the Agusta company also concerns the NH-90 helicopter, and mission systems trials should be completed by December 2002. First deliveries of series production helicopters are expected by the end of 2004. The Navy is also operating, on temporary loan, a single P.180 from the Italian Air Force. Two further P.180s should be delivered by Piaggio in the near future. By 2007, delivery is expected of the 26,000-ton *Andrea Doria*, the second aircraft carrier for the Italian Navy.

AOB: ITALIAN NAVAL AVIATION (AVIAZIONE NAVALE DELLA MARINA MILITARE)

GRUPELICOT1	AB.212ASW	Maristaeli Luni
GRUPELICOT 5	SH-3D/H	Maristaeli Luni
GRUPELICOT 2	AB.212ASW	Maristaeli Catania
GRUPELICOT 2	SH-3D/H	Maristaeli Catania
GRUPELICOT 4	AB.212ASW	Maristaeli Grottaglie
GRUPAER	AV-8B/TAV-8B	Maristaeli Grottaglie

Italian Army

Re-organisation of the Cavalleria dell'Aria (Air Cavalry) is continuing, but the structure seems



Now in the twilight of its Italian Air Force service, the G.222 will be replaced in service by the developed version of the type, the C-27J Spartan II. KEY - DUNCAN CUBITI

AIR CAVALRY (CAVALLERIA DELL'ARIA)	
Raggruppamento Cavalleria dell'Aria HO Viterbo (Air Cavalry Group) Centro Cavalleria dell'Aria 1° Gruppo Squadron Cav dell'Aria A.109, A.129, AB.205, AB.206, AB.212, AB.412, CH-47 (Acts as OCU for all Air Cavalry Units) 28° Gruppo ? Sq ACTL Do 228 ? Sq P.180 (at Rome-Ciampino)	4° Reggimento Cavalleria dell'Aria HO Bolzano 34° Gruppo Torino/Venaria Reale 545° Sq EM AB.205A 442° Sq ERI AB.206C-1 54° Gruppo 440° Sq ERI AB.206C-1 541 Sq EM AB.205A Brigata Aeromobili Triuli ('Friuli' Air Mobile Brigade)
1° Reggimento Cavalleria dell'Aria Viterbo 11° Gruppo 111° Sq ETM CH-47C 112° Sq ETM CH-47C 51° Gruppo 511° Sq ETM CH-47C 512° Sq ETM CH-47C 26° Gruppo 426° Sq ERI AB.206C-1 526° Sq EM AB.205A, AB.412	5° Reggimento Cavalleria dell'Aria Casarsa della Delizia 27° Gruppo Casarsa della Delizia 271° Sq ERI AB.206C-1, A.109CM 272° Sq EM AB.205 49° Gruppo 491° Sq EA A.129 492° Sq EA A.129
2° Reggimento Cavalleria dell'Aria HO Lamazia Terme 20° Gruppo 420° Sq EM AB.212 520° Sq EM AB.212 30° Gruppo 430° Sq ERI AB.206-1 530° Sq EM AB.212 21° Gruppo Cagliari/Elmas 421° Sq ERI AB.206-1 515° Sq EM AB.205A	7° Reggimento Cavalleria dell'Aria Rimini-Miramare 25° Gruppo 251° SOEM AB.205 252° Sq EM AB.205 253° Sq EM AB.205 48° Gruppo 481° Sq EA A.129 482° Sq EA A.129 483° Sq EOA A.109CM 53° Gruppo 531° Sq ERI AB.206C-1 532° Sq EM AB.412 533° Sq EM AB.412

Glossary

ACTL	Aerei da Collegamento e Trasporto Leggero	Light Transport & Liaison Aircraft
EM	Elicotteri Multinolo	Multi-Role Helicopter
EOA	Elicottero d'Osservazione Avanzata	Forward Observation Helicopter
ETM	Elicotteri Trasporto Medio	Medium Transport Helicopter
ERI	Elicotteri di Ricognizione	Reconnaissance Helicopter



The teeth of the Italian Army is the fleet of Agusta A129 Mangustas which undertake the anti-tank and armed escort role. All of the existing examples will be upgraded to a multi-purpose standard, to which the last 15 on order will be delivered, jos SCHOOFs

to be 'frozen' at five regiments, two of which form the 'Friuli' Airmobile Brigade. The training function remains the responsibility of the main base at Viterbo, with one helicopter battalion and a fixed-wing battalion operating Do 228s and P.180s (detached to Rome-Ciampino airport). The second batch of A.129 Mangustas (15 examples of the CBT version) is currently being delivered. The Army has already signed a contract for the upgrade of the first batch (45 helicopters) to the CBT standard. As far as the Army's transport helicopter fleet is concerned, the first example of the NH-90, 60 of which are on order, should be delivered by the end of 2004.

DR RICCARDO NICCOLI

Latvia

SINCE 1994, Latvia has actively participated in the Partnership for Peace (PfP) programme. Each year, Latvia develops its Individual Partnership Programme (IPP), which embraces activities offered by NATO. Latvia has also participated in NATO-led peace-keeping and support operations since 1996 and in this capacity the country's troops have been deployed to Albania (AFOR), Bosnia-Herzegovina (SFOR) and Kosovo (KFOR).

The Latvian National Armed Forces (LNAF) consist of active duty soldiers, reserves, and the Zemessardze (National Guard). In a state of war, the Border Guard that is now under the command of the Ministry of Interior, will come under the auspices of the LNAF commander. The single most important objective of the Latvian Air Force is to continue to develop its air surveillance capability within the scope of BALTNET. The Air Force is also charged with the responsibility of air defence of population centres, important government structures and facilities, and of providing an air defence capability for the ground forces. Additionally, the Air Force performs search and rescue (SAR) missions within the territory of Latvia and in the Baltic Sea. The SAR capability was expanded recently with the acquisition of a second helicopter. Latvian Air Force officials are holding discussions with their Lithuanian and Estonian counterparts to investigate the



Latvian Air Force Mil Mi-2 Hoplitē 151 is one of three (of eight acquired) still operational with the service. KEY - ALAN WARNES

possibility of developing a joint air transport capability.

The Latvian Air Force started to fly from Riga-Spilve with former civilian (agricultural) aircraft and helicopters in 1992. Three twin-turbine Mil Mi-2 light helicopters are still operational out of a total of eight acquired. Besides the eight Mi-2s, about 20 Antonov An-2 biplanes were originally acquired by the Ministry of Defence. Ten of them were almost immediately given to the Latvian National Guard and until the present day, two An-2s are maintained in an operational status by the Latvian Air Force. The small transport fleet was expanded when Germany donated two Czech-built Let L-410UVP transport planes. One L-410UVP was written off in an accident.

The flying part of the Latvijas Republikas Zemessardze (Air National Guard of the Republic of Latvia) has been integrated within the Air Force since the beginning of 2000. This organisation, which uses several ex-DOSAAF aircraft (An-2, PZL-104 Wilga 35A and various gliders), is responsible for a variety of different tasks. Just like the former Soviet organisation DOSAAF, 2 Zemessardzes Aviācijas

Eskadrila tries to encourage young people to start flying in gliders and single-engined aircraft or take up parachuting (in the armed forces). In addition to these tasks, 2 Zemessardzes Aviācijas Eskadrila is also responsible for (coastal) patrol flights, parachuting flights, police flights and transportation. The Eskadrila is widely distributed at locations throughout Latvia. Seven airfields currently house one or more Zemessardze aircraft. Every Zemessardze flying unit is subordinate to a brigade or a battalion and each unit is therefore responsible for its own region. TIEME FESTNER

**AOB: LATVIAN AIR FORCE
LATVIJAS GAISA SPĒKI**

Air Base Group		
1st Fighter-Bomber Sqn	No aircraft	Lielvarde
Helicopter Flight	Mi-2	Lielvarde
	Mi-8MTV	
Transport Flight	An-2	Lielvarde
	L-410	
Latvijas Zemessardze (National Guard)		(Various locations)
	An-2, PZL-104 Wilga, LAK-12, L-13 Blanik, Jantar Standard	

Lithuania

MILITARY AVIATION in Lithuania is divided between the Lithuanian Air Force and the Voluntary National Defence Force. The Lithuanian Air Force (LTAF) is an integral part of the Lithuanian Armed Forces. It currently comprises approximately 1,000 officers, non-commissioned officers and civilians. Units are located at various bases across the republic, with the LTAF Headquarters and the Air Space Surveillance and Control Command located in Kaunas, while the Airspace Control Centre is stationed nearby in Karmlava. There are two air bases at Siauliai and Panevezys, and the Air Defence Battalion, formed in 2000, is located in the Siauliai District.

The LTAF's mission is to survey, guard and defend the air space of Lithuania; to support the Lithuanian ground and naval forces; to carry out search and rescue and special operations; to airlift cargo, and transport state officials and members of the armed forces.

From 1993-1999, the air force acquired L-410UVP, An-24, An-26, and L-39 aircraft, and Mi-2 and Mi-8 helicopters from Germany, Poland, the Czech Republic, Russia, and Lithuanian Airlines. In 2000, weapon systems for the Air Defence Battalion were acquired from Sweden. The newly-created airspace surveillance and control system includes civilian radar assets in Vilnius, Klaipeda, Kaunas, and military radar posts, as well as active defence equipment. Radar information from the civilian and military radar posts is fed to the Lithuanian Airspace Control Centre, processed with modern equipment and sent to the analysts. The Regional Airspace Surveillance and Co-ordination Centre (RASCC) for the Baltic States was established with the support of the international co-operation programme, BALTNET (the Baltic surveillance network), the United States and Norway.

At present, the Lithuanian Air Force maintains two air bases and controls the Airspace Surveillance and Control Command and the Air Defence Battalion. The Search and Rescue organisation and Baltic Air Space

Surveillance Systems also function within the Air Force structure.

The Voluntary National Defence Forces (Krašto Apsaugos Savanoriu Pajego or KASP) was created in 1991 as the Voluntary Service of National Defence (SKAT). This unit protected strategic assets, such as the Parliament and Government offices, during the period of Soviet aggression at the beginning of 1991. In accordance with the law on National Defence Organisation and Military Service, the SKAT was reorganised into the KASP and completely integrated into the Armed Forces. KASP flying units comprise former Soviet-era DOSAAF (Dobrovol'noye Obshchestvo Sodyeystviya Armii, Aviatсии I Flotu) tri-service voluntary training assets and are based in the east and the west of Lithuania at Kyviskes and Silute. Approximately 25 light aircraft (including gliders) are operated by the two squadrons from these airfields. TIEME FESTNER

**AOB: LITHUANIAN AIR FORCE
(KARINIS ORO PAJEGOS)**

1. Aviācijas Baze		Zokniai
Naikintuvu Grandis (Fighter Flight)	L-39C/ZA	
Transporto Eskadrile (Transport Sqn)	An-2	
	An-26B	
	L-410UVP	
2. Aviācijas Baze		Pajoustis
Sraigtašparnių Eskadrilė	Mi-8PS, Mi-8MTV, Mi-8T (SAR)	

**AOB: VOLUNTARY NATIONAL DEFENCE FORCE
(KRAŠTO APSAUGOS SAVANORIŲ PAJEGOS/KASP)**

Yak-18T, Yak-52, Yak-55, An-2, PZL-104, PA-38, plus L-13, Lak-12, SZD-48 gliders at Kyviskis and Silute



Lithuania hopes to soon be a NATO member. This Let 410 serves the 1 Aviācijas Baze based at Zokniai with the Transporto Eskadrile (Transport Squadron). KEY-ALAN WARNES



THE MAKEDONSKO Voeno Vozduhoplovstvo i Protivvozдушna Odbrana (or VV i PVO, Macedonian Air Force and Air Defence Force) was officially created on June 10, 1992. Upon its creation, the W i PVO could count on one UTVA-66 and four UTVA-75 trainers, all leased from the Macedonian Aeronautical Union.

The crisis between Albanian terrorists and Macedonian Government forces erupted in March 2001. Even as the fighting was taking place, the W i PVO had begun to acquire new weapons, receiving an additional 20 aircraft in the first few days of conflict. The first large quantity delivery of new aircraft to the W i PVO was made on March 23, 2001, when Ukraine donated four Mi-8MT *Hip-H* and two Mi-24V *Hind-E* combat helicopters. Greece also showed its solidarity with the delivery of two UH-1H helicopters to the W i PVO. By September 4, eight more Mi-24s had been delivered from the Ukraine. A more significant event took place on June 20, 2001, when four Su-25s (three Su-25 and one SU-25UB) arrived, marking the first delivery of combat fighters to the W i PVO.

On June 24, 2001, one Su-25 took off from Petrovec Air Force Base, near Skopje, and was involved in monitoring the activities around Arachinovo village where heavy fighting was taking place. This was the first occasion on which a Macedonian Air Force fixed-wing combat aircraft had operated from a VV i PVO base since the formation of the service.

As a part of succession of property and equipment of the former JNA, on October 18, 2001, Yugoslavia offered a long list of weapons and equipment to be handed over to the Macedonian armed forces. According to initial reports in the Macedonian media, the country would receive four SOKO G-4 Super Galebs, an Antonov An-26 and possibly a Yak-40, as well as large quantities of weapons and equipment. Additionally, pilot-



Macedonia is the latest country to acquire Su-25 Frogfoots, its four aircraft being delivered in June 2001. IGOR BOZINOVSKI

training facilities will be provided at the Macedonian Military Academy named after General Mihailo Apostolski. Up to the beginning of July, there had still been no confirmation as to delivery dates and schedules for the Yugoslav weapons and equipment earmarked for Macedonia, which puts something of a question mark over the realisation of this project.

The latest delivery of aircraft to the VV i PVO was on December 28 last year, when two Mi-24K (Korrektirovshchik) *Hind-G2* helicopters, powered by TV3-117VMA engines, were acquired from Ukraine. The Mi-24K is the designation for the little-known photo-reconnaissance and artillery fire correction version of the Mi-24, although it is widely used by Russian Army Aviation *Hind* units. With the delivery of the two Mi-24Ks, the W i PVO has completed the equipment of 201. POHCh, which now operates a total of 12 helicopters (ten Mi-24V *Hind-E* and two Mi-24K *Hind-G2*). Delivery of the Mi-24K helicopters has improved the reconnaissance abilities of the VV i PVO and helps to redress the shortage of surveillance helicopters in the fleet.

Macedonia is one of nine Central and Eastern

European countries actively seeking membership of NATO. In the desire to meet all the obligations for full integration and membership, Macedonia has equipped its Air Force fighters and helicopters with NATO-compatible communication systems. To better protect its borders with the south Serbian province of Kosovo and with Albania, especially at night, Macedonia plans to equip some of the VV i PVO helicopters with FLIR equipment. Priority for future acquisitions has been given to additional utility helicopters. The force already operates two UH-1H utility helicopters and additional procurement of helicopters of this type seems to be a logical and cost-effective solution for the W i PVO.

IGOR BOZINOVSKI

AOB: MACEDONIAN AIR FORCE & AIR DEFENCE (ARMIJA NA REPUBLIKA MAKEDONIJA - PROTIVOZDUSNA OBRANA I VOENO VOZDUHOPLOVSTONA)

Vozduhoplovna Brigada (Air Brigade)

101 Avijacijska Eskadrila Zlin Z-242L	Petrovec/Skopje
201 Protivoklopna Helikopterska	
Eskadrila	UH-1D, Mi-24V, (BO 105M)
301 Transportna Helikopterska	
Eskadrila	Mi-8BMTV-1
?? Eskadrila	Su-25



Operations by the armed forces of Macedonia against Albanian terrorists have helped fuel the growth of the Macedonian Air Force. Macedonian Air Force Mi-SMT (serial 306), protected by an orbiting Mi-24V Hind, is seen during a combat search and rescue exercise on May 28. MIA VIA IGOR BOZINOVSKI

Netherlands

ALL SEVEN fighter squadrons of the Koninklijke Luchtmacht (KLu - Royal Netherlands Air Force) have completed their conversion to the Mid-Life Update (MLU) version of the F-16. The Dutch MLU programme will reach completion soon, as the last of a total of 138 F-16AM/BMs is to be redelivered to the KLu within the next few months. Meanwhile, all unmodified F-16s have been withdrawn from active service. To date, the Dutch government has not succeeded in selling surplus F-16 OCU's.

The KLu's three Main Operating Bases (MOB) - Leeuwarden, Twenthe and Volkel - are home to one Reaction Force (RF) squadron and one Main Defence Force (MDF) squadron, each operating 18-20 F-16s. In addition to the six operational fighter squadrons, 306 Squadron at Volkel is the F-16 Operational Conversion Unit. Operating 13 F-16s (more than half of these being F-16BM twin-seaters), 306 took over the Theatre Qualification Training (TOT) role from 313 Squadron last November. Twenthe-based 313 Squadron will reach its operational status as MDF squadron this October.

The competition for the replacement of the F-16 officially started three years ago. Initially, there were six candidates: the Joint Strike Fighter (JSF), Lockheed Martin Advanced F-16, Boeing F/A-18 Super Hornet, Dassault Rafale, EADS Eurofighter Typhoon and SAAB JAS-39 Gripen. In June last year the field was halved, leaving only the JSF, Rafale and Eurofighter Typhoon in the race. It was clear from the start that the KLu favoured the JSF as its future combat aircraft, and the Dutch defence industry also expressed its interest in the JSF project. Last February, after a series of discussions within the cabinet, the Dutch government decided to join the System Development and Demonstration (SDD) phase of the Lockheed Martin F-35 JSF programme. As confirmed by the Prime Minister, taking part in the JSF programme as a Level II partner would effectively mean acquisition of the American aircraft in the future. Deliveries to the KLu of the projected 85 F-35s should commence early next decade and continue until 2025. However, as it turned out, the US\$800 million contract with the US government had not been signed by April 26, the initial deadline set by the US. Growing opposition among politicians against the business case presented by the cabinet initially resulted in a decision to join the programme being postponed. However,



A Royal Netherlands Air Force 312 Squadron F-16AM formates on a Swedish Viggen during a joint exercise held in Sweden. Seven squadrons and a test centre operate the F-16 in the Netherlands. PETER LIANDER



Of the 13 P-3C-II Orions currently operated by the Royal Netherlands Navy, three will be retired by the end of the year, while the others are to be upgraded. KEY - DAVE WILLIS

following the general elections of May 15, in which right wing parties gained significantly, the matter was once more brought into parliament. This time participation was approved and the Memorandum of Understanding with the US was finally signed on June 5.

The final AH-64D Apache of 30 ordered for the Tactische Helikopter Groep (THG - tactical helicopter group) was handed over to the KLu on May 9, at Boeing's Mesa plant. For the time being, a limited number of the Apaches remain at Fort Hood, USA, for training purposes. The THG intends to equip its entire AH-64D fleet with the Longbow radar in the future. Furthermore, the Apaches are to be fitted with electronic self-defence equipment and additional radios by 2006, while the last of the 13 Chinooks and 17 Cougars should have similar equipment in 2004.

The remaining four Alouette and 15 BO 105 light utility helicopters are to stay in service for some years, as the options for their replacement are still being studied. It is expected that the need for more transport capacity within the European air forces might eventually influence the choice for the yet-to-be-acquired helicopter type(s).

In recent years, the KLu has been involved in a number of missions overseas. F-16 operations over the former Yugoslavia came to a halt after more than eight years, when the permanent deployment of KLu F-16s in Italy - which had flown from Villafranca since April 1993 and were relocated to Amendola in January 1999 - was terminated in August last year. The four Chinooks and a similar number of Apaches deployed in Eritrea/Ethiopia and Djibouti in support of UNMEE troops returned in July last year. Five Cougars, based at Split in support of SFOR since January 2001, were replaced by four Chinooks last January. These were to return in July, with two THG Cougars taking over their medevac roles in Bosnia. As part of Operation ENDURING FREEDOM, one Hercules is currently based at Manas airport in Kirgystan for six months, while a KDC-10 tanker is operating from Al Udeid airbase in Qatar for a period of one year. In order to supply air cover for the ISAF troops in Afghanistan, KLu F-16s will also be deployed to Kirgystan in early October.

AOB: ROYAL NETHERLANDS AIR FORCE (KONINKLIJKE LUCHTMACHT)

Volkel AB	
306 Sqn	F-16AM/BM
311 Sqn	F-16AM/BM
312 Sqn	F-16AM/BM
Twenthe AB	
313 Sqn	F-16AM/BM
315 Sqn	F-16AM/BM
Leeuwarden AB	
303 (SAR) Sqn	AB.412SP
322 Sqn	F-16AM/BM
323 (TACTES) Sqn	F-16AM/BM
Kantoor Testvliegen (KTV) F-16BM	
(Flight Test Centre)	
Eindhoven AB	
334 Sqn	C-130H-30 Hercules, KDC-10 Fokker F50/F60U, Gulfstream IV
Soesterberg AB	
Tactische Helikopter Groep KLu (THG KLu)	
(Tactical Helicopter Group)	
298 Sqn	CH-47D Chinook
300 Sqn	AS.532U2 Cougar, Alouette III
Gilze Rijen AB	
Tactische Helikopter Groep KLu (THG KLu)	
(Tactical Helicopter Group)	
299 Sqn	B0105CB-4
301 Sqn	AH-64D Apache
302 Sqn	AH-64D Apache
Woensdrecht AB	
131 (EMVO) Sqn	PC-7

Naval Air Service

The majority of the 13-strong P-3C-II Orion fleet of the Marine Luchtvaartdienst (MLD - Naval Air Service) is to undergo the Capability Upkeep Programme (CUP). Modifications on ten Orions are being carried out in the US by Lockheed Martin and should be completed in 2006. The other three P-3s should be retired and put up for sale by the end of this year. The Orion detachment at Hato, Curacao, has gained an extra aircraft, as it now operates three MLD Orions.

The MLD's remaining 21 SH-14D are scheduled to be replaced by 20 NH90s between 2007 and 2012. Fourteen of these will be equipped with full mission systems, while the remainder will have provision for these systems to be fitted.

KEES VAN DER MARK / ARNAUD BOXMAN

NAVAL AIR SERVICE (MARINE LUCHTVAARTDIENST)

De Kooy	
Groep Maritieme Helikopters (MARHELI)	
(Maritime Helicopters Group)	
7 Sqn	SH-14D Lynx
860 Sqn	SH-14D Lynx
Yalkenburg	
Groep Maritieme Patrouillevliegtuigen (MARPAT)	
(Maritime Patrol Group)	
320 Sqn	P-3C-II Orion
321 Sqn	P-3C-II Orion, Beech King Air 200
Civil aircraft on long-term lease	
AS355F1 Ecureuil 2	1 Training/SAR/Coastguard
Beech King Air 200	1 Training
Schweizer 330	1 Training



THE ROYAL Norwegian Air Force (RNoAF) has been one of many air forces to suffer economically from the post-Cold War syndrome. Putting in the necessary investment and keeping a sufficient level of professionalism is a constant struggle for the RNoAF in the absence of a threatening neighbour. The neglect of the air force became apparent in the late 1990s when several aircraft types were in need of extensive repairs and upgrades.

Along with its sister branches, the Royal Norwegian Navy and Army, the RNoAF is currently undergoing massive organisational changes. The new structure is due to be finalised in 2005, but adjustments are being made along the way, so making it difficult to get an accurate overview of the situation. The primary goal of these changes is to boost efficiency and increase the total number of flight hours. By reducing the number of facilities and personnel, the RNoAF has already gone a long way towards reaching its economic goals. However, it remains an open question as to whether RNoAF air power will be strengthened or weakened as a result of the changes.

As the homes of the only three F-16 squadrons, Bodø and Ørland Main Air Stations (MAS) are the heart and soul of the new RNoAF. Banak has lost its status as an independent air station and is now administered from Bodø MAS. Banak is facing an uncertain future as a military air base as the SAR duties carried out by the 330 Skvadron Avdeling Banak may be transferred to a civilian contractor and moved to Hammerfest, a move which may be the first step towards splitting the entire SAR service into separate military and civilian divisions. In the long term, both the quality and economy of the SAR service may suffer from such a move. Værnes Air Station (AS) is no longer used as a RNoAF air station and now houses the Norwegian National Guard. The Primary Flight School has been moved to Bardufoss AS.

In Southern Norway, the RNoAF is concentrated around three bases: Sola, Rygge and Gardermoen. Sola AS is to be the new 330 Skvadron HO and main base for the new NH-90 helicopters, which will be organised into two squadrons, 334 and 337.



Norway's F-16 fleet is undergoing a mid-life update to keep the type operationally effective until it is replaced. F-16AM 681 belongs to Skvadron 331 based at Bodø. KEY - STEVE FLETCHER

The future organisation of the units stationed at Rygge FS and Gardermoen FS has not yet been decided, though the increasing amount of civilian traffic at Gardermoen may force a decrease in military activity at Norway's National Airport.

The backbone of the RNoAF is still its fleet of F-16A/BS, all of which have now been upgraded to MLU standard. The remaining 58 aircraft are currently being organised into three squadrons, 331 and 332 Skvadron operating from Bodø MAS and 338 Skvadron operating from Ørland MAS. The Joint Strike Fighter and Eurofighter are still battling for the contract to replace the F-16s some time after 2010: a minimum of 48 new fighters is required.

Following Sweden and Finland, Norway signed a contract for the purchase of 14 NH-90s November 30, 2001. The helicopters will be operated in the ASW and Coastguard roles by 334 and 337 Skvadron, relocating to Sola AS by the end of the year. The RNoAF also secured an option to purchase ten additional helicopters to replace the ageing Sea Kings at a later stage. The delivery of the 14 new rotorcraft will begin in 2005 and will replace today's fleet of five Mk 86 Lynx.

The poor condition of the six C-130H Hercules creates additional headaches for the RNoAF. In addition to an extensive upgrade programme, several other alternatives have been put forward by the Norwegian Defence Ministry. One alternative is to purchase five new C-130JS. Another is the purchase or lease

of two C-17s, followed by the purchase of four A400M at a later stage. A third alternative is considering different combinations of C-17s, C-295s, A310S and C-130s. Whatever is the outcome of the ongoing evaluation, air-to-air refuelling capability is likely to play a decisive role.

During seven months in 2001, four Bell 412SP, with supporting personnel, formed part of KFOR 5, which was under Norwegian command. Norway has also played an active role in Operation ENDURING FREEDOM, primarily via the contribution of special forces. In late autumn 2002, four F-16s are to be deployed to Manas AB in Kirgystan. C-130s from 335 Skvadron are also actively supporting this operation.

SVEIN-FRODE GUDBRANDSEN

AOB: ROYAL NORWEGIAN AIR FORCE
(KONGELIGE NORSKE LUFTFORSFARET)

330 Skvadron - A Flight	Sea King 43/43B	Bodø
330 Skvadron - B Flight	Sea King 43/43B	Banak
330 Skvadron - C Flight	Sea King 43/43B	Ørland
330 Skvadron - D Flight	Sea King 43/43B	Sola
332 Skvadron	F-16A/B MLU	Rygge
333 Skvadron	P-3N/P-3C	Andøya
334 Skvadron	F-16A/B MLU	Bodø
335 Skvadron	C-130H	Gardemoen
337 Skvadron	Lynx Mk 86	Bardufoss
338 Skvadron	F-16A/B MLU	Ørland
339 Skvadron	Bell 412SP	Bardufoss
717 Skvadron/FEKS	Falcon 20	Rygge
720 Skvadron	Bell 412SP	Rygge
Flygeskolan	MFI-15/MFH7	Værnes
KNL Screening Fit	MFI-15	Bardufoss



The six Orions of 333 Skvadron are based at Andøya - 4576 is one of the two P-3N versions on strength. KEY - DAVE ALLPORT

ALL THREE air elements of the Polish Armed Forces are progressing steadily with integration into NATO's military structures. A number of the ongoing aircraft selection/procurement processes, along with continued restructuring, will result in the Polish Air Force, the country's Naval Aviation, as well as Army Aviation, finally becoming better suited to today's military challenges and to requirements in the foreseeable future.

Polish Air Force

Poland's primary air arm is more frequently referred to as the Polish Air & Air Defence Forces (PA&ADF or WLOP - Wojska Lotnicze i Obrony Powietrznej). It is the result of placing former offensive air elements and AD forces (the then AD fighter regiments, GBAD and ASACS - Air Surveillance and Control System - units) under the same command, a move which took place at the beginning of the 1990s. Despite several attempts to officially change its name to the more common - and shorter - Polish Air Force, this has not yet materialised.

Although the ongoing selection process for a future multi-role fighter to equip certain Polish ELTs (Eskadra Lotnictwa Taktycznego - Tactical Air Squadron) and an expected decision on final replacement of Polish Yak-40s with a western type would boost the PA&ADF air capabilities, its current operations seem to be largely influenced by recently implemented money-saving measures. The current personnel strength of the PA&ADF, totalling some 36,000 military personnel, is to be reduced to around 30,950 in 2003 and the first steps in this trimming-down process began recently.

According to PA&ADF sources, in order to lower the maintenance costs of MiG-21MFs, until now operated by the 3 and 10 ELT, the type will be permanently grounded from the beginning of September this year and will be withdrawn from use. Renewal of flight operations with the MiG-21MF is not planned, nor will any SLEP/upgrade programmes be conducted. This applies also to the few *Fishbeds* on the strength of Deblin-based 23 LES (Lotnicza Eskadra Specjalna - Special Air Squadron), the sole PA&ADF test unit. In order to allow aircrews of the units in question to maintain their fast jet currency, a number of TS-11 jet trainers now operated by the 1 OSL will be handed over to the two ELTs by the WSOSP (Higher Air Force Officers School) based at Dęblin. Previously planned to take place in mid-2002, the relocation of 9 ELT (at present based at Zegrze Pomorskie) to Poznan-Krzesiny AB will not now go ahead. Instead, the unit will be disbanded and its MiG-21bis fighters passed on to the other units, namely 3 and 10 ELTs. The fate of 24 BLot (24 Air Base), which has supported the 10 ELT, has not so far been determined. It is likely that if retained, it would serve only in the secondary deployment support role.

The PA&ADF closure and relocation schedule will result in some other units changing their home bases or disbanding.



Poland's MiG-29 Fulcrum fleet will receive a boost in 2003 with the arrival of the examples currently serving with the Luftwaffe. KEY - ALAN WARNES

The Miroslawiec-based 8 ELT, operating Su-22 ground attack aircraft, is due to leave its current location during the second half of this year and will be based at Swidwin AB, along with 39 and 40 ELTs currently operating from there. It cannot be ruled out that in the future the three squadrons based at Swidwin could be reduced to two, with 8 ELT likely to disband in 2003/2004. The move is also intended to save money related to operations of the same aircraft type at various air bases. Despite some indication that the 12 BLot (12 Air Base) at Miroslawiec could be completely disbanded, this facility, along with a limited number of ground support personnel, will be retained by the PA&ADF to support air-to-ground range operations at nearby Nadarzyce. One factor which has been taken into consideration is that Miroslawiec AB has not only been used by Polish aircraft, but also by the air arms of other NATO member countries, including the Royal Air Force. Also, the 23 LES is due to be disbanded during 2002/2003, meaning that the test-flying role will be assigned to selected

front-line ELT aircrews.

Recent changes in the law covering the acquisition of new multi-role fighters for the PA&ADF have resulted in the idea of purchase/leasing second-hand aircraft and of the follow-on acquisition of new-production examples being dropped in favour of purchasing 48 completely new-build fighters, to be selected this autumn. Based upon latest developments, the final selection will be made between the JAS-39 Gripen offered by Gripen International and the Lockheed Martin F-16 Block 50/60. The 3 and 10 ELTs have already been selected to become the first operators of the new type. An extensive air base upgrade programme is well under way at Poznan-Krzesiny AB, to be followed by work at Lask AB. Numerous USAFE/NATO site surveys held over the preceding months at both locations can be taken as confirmation of their future role as Poland's first full NATO standards-compatible air bases. They would not only serve to host a new multi-role fighter-equipped ELT, but would also comprehensively support any allied flying operations. Unofficial sources claim the two bases have been earmarked as permanent NATO-shared sites. According to current plans, however, the main stage of modernisation at Poznan-Krzesiny AB will be completed by the end of 2002. The NATO Security Investment Programme-funded base facilities' upgrade programme will be next to come on-stream and will include construction of additional facilities required at the base. This means that 3 ELT, currently operating from Lask AB, will be relocated back to its home base around autumn this year.

The Polish government's decision to take over the MiG-29s currently on the strength of the German Air Force's JG73 is yet another highlight in terms of plugging the PA&ADF's emerging air capability gap. The subject of detailed technical inspections by PA&ADF experts. Despite their varying technical condition, the acceptance of these aircraft will at least allow maintenance to the agreed level of NATINADS obligations before a new multi-role fighter is able to take over NATO QRA(I) missions. Delivery of the first ex-German MiG-29s to 41 ELT based at Malbork AB is expected by the end of 2002, and the remaining examples will be delivered the following year. It is considered vital for ten of them to undergo

AIR & AIR DEFENCE FORCES (WOJSKA LOTNICZE I OBRONA POWIETRZNEJ)

Air & Air Defence Forces HO		Warszawa
36 SPLT	Tu-154M(Lux), Yak-40, Mi-8, W-3, Bell 412HP	Warszawa-Okecie
13 ELTR	An-26, An-2T, M-28B-1TD, Mi-2	Kraków-Balice
23 LES	Various	Dęblin
Wyższa Oficerska Szkoła Sił Powietrznych (WSOSP) (Higher Air Force Officers School - Dęblin)		
10SL	TS-11	Dęblin
2 OSL	PZL-130TC	Radom
3 OSL	W-3W, Mi-2	Biała Podlaska
2 Korpus Obrony Powietrznej (2 KOP) (2nd Air Defence Corps)		
2ELT-L	An-2T, Mi-2(variants), TS-11	Bydgoszcz
LGPR	An-28RL, Mi-8RL, W-3RL	
1BLT		Swidwin
1 ELT	MiG-29/MiG-29UM, TS-11, An-2	Mińsk Mazowiecki
8 ELT	SU-22M4/SU-22UM3K, TS-11, An-2	Miroslawiec
9 ELT	MiG-21bis/MiG-21UM, TS-11, An-2	Zegrze Pomorskie
39 ELT	Su-22M4/Su-22UM3K, TS-11, An-2	Swidwin
40 ELT	Su-22M4/Su-22UM3K, TS-11, An-2	Swidwin
41 ELT	MiG-21bis/MiG-21UM, TS-11, An-2	Malbork
3 Korpus Obrony Powietrznej (3 KOP) (3rd Air Defence Corps)		
3 ELT-L	An-2T, An-28TD, Mi-2, TS-11	Wroclaw-Strachowice
2 BLT		Poznań
3 ELT	MiG-21MF/UM, TS-11, An-2	Poznan-Krzesiny
6 ELT	Su-22M4/Su-22UM3K, TS-11, An-2	Powidz
7 ELT	Su-22M4/Su-22UM3K, TS-11, An-2	Powidz
10 ELT	MiG-21MF/MiG-21UM, TS-11, An-2	Lask



a SLEP/avionics upgrade programme giving them a further six years of operation. Current MiG-21bis fighters with 41 ELT would then be handed over to other Polish flying units as necessary.

Meanwhile, at the PA&ADF's remaining frontline airbases, TACAN and ILS systems supplied by the United States through the FMS system have been installed to support operations by NATO and Polish Air Force aircraft.

Following the selection in August 2001 of the CASA C.295M as a baseline tactical transport aircraft with the PA&ADF, the first examples of the aircraft ordered will be delivered to 13 ELTR (Eskadra Lotnictwa Transportowego - Airlift Squadron), based at Kraków-Balice AB, during the second half of 2003. Meanwhile, on March 26, 2002, the HO of the PA&ADF took over command responsibilities of the units of 3 KOP (Korpus Obrony Powietrznej - Air Defence Corps), headquartered at Wrocław. The 13 ELTR's capabilities have been enhanced by the recent delivery of two PZL Mielec M-28 Bryza-1TD light transport aircraft, and two similar aircraft are due to be delivered to the Warszawa-Okecie-based 36 SPLT (Specjalny Pułk Lotnictwa Transportowego - Special Transport/VIP Regiment) during 2002. Apart from this, six M-28B-1TDs included in a 2001 order will be delivered to various Polish units over the next two to three years. In the meantime, negotiations have begun with the Ukrainian Air Force to share air transport capabilities, initially to support PSO-related transport missions, and the creation of a combined Polish-Ukrainian airlift unit is also possible in the future. The dramatically decreasing reliability of Yak-40s currently operated by the 36 SPLT has prompted a decision to initiate a selection process for a new western type to replace them. The Falcon 900, Gulfstream IVSP, Challenger 604 and Embraer EMB-135/145 are reported to be the most likely options. The project's specification and firm selection date have not yet been officially announced.

The WSOSP (Wyższa Oficerska Szkoła Sił Powierzynych - Higher Air Force Officers School) located at Dęblin, with its subordinate OSL (Ośrodek Szkolenia Lotniczego - Air Training Centres) will remain the primary source of newly-trained Polish aircrews. However, to retain its training capabilities, TS-11 Iskra jet-trainers are to undergo a yet-to-be specified upgrade programme, expected to

give them several more years of effective service. Given the anticipated acquisition of modern fighters for the PA&ADF, some limited participation in multi-national NATO-driven training programmes is under serious consideration. The Hungarian option of joining the NFTC (NATO Flying Training in Canada) programme could be an option. The most serious change in the PA&ADF's training schedule will come about in 2003 when 3 OSL at Biala-Podlaska disbands and the whole PA&ADF helicopter training syllabus (which also supports the other two Polish air arms) relocates to Radom (2 OSL). Biala-Podlaska airfield is to lose its military designation and become a purely civilian cargo/passenger airport to support eastbound air traffic: some civilian work has already begun there. Mi-2 helicopters used for training duties are currently coming to the inevitable end of their operational lives, and so in May this year it was decided that SW-4 light helicopters produced at PZL Świdnik should become the future basic training/liaison helicopters for the PA&ADF. Full-scale production of the type will commence at the end of 2002. According to the PA&ADF Commander-in-Chief, Major General Ryszard Olszewski, the PA&ADF is to acquire 47 of them before 2010. Additionally, all the Mi-2s currently used for overland SAR operations are to be replaced by more spacious and capable W-3RL Sokół helicopters. Consequently, there is an anticipated official order for Sokóls, currently used in pilot training, to be

retrofitted to serve in the overland SAR roles.

Maintaining the combat capabilities of the squadrons assigned to NATO Rapid Reaction Forces (RRF) is being kept at the top of the PA&ADF's priority list. The Minsk Mazowiecki-based MiG-29 squadron, assigned to the NATO Immediate Reaction Force, the 40 ELT Su-22 ground attack squadron based at Swidwin assigned to the NATO RRF, and the 7 ELT NATO RRF squadron operating out of Powidz AB are the PA&ADF's most highly trained flying units. Their aircraft have been subject to numerous modernisation projects - limited in extent, but sufficient to make the aircraft interoperable with allied units. More comprehensive upgrades of Polish Su-22s proposed by various consortia have not so far been authorised and, due to financial constraints, their eventual execution remains questionable.

Polish Naval Aviation

The current structure of Polish Naval Aviation is the result of the creation of Gdynńska Brygada Lotnictwa Marynarki Wojennej (BLMW - Naval Aviation Brigade) at Gdynia-Babie Doły in 1995. It is planned that the three air bases currently used by the BLMW will be retained in the future. However, in consequence of the forthcoming scheduled complete withdrawal from service of all TS-11s and reconnaissance TS-11RS, as well as MiG-21bis fighters (presumably due to be passed on to the PA&ADF units), the 86 aircraft of various types currently operated by the BLMW will drop to around 44 between 2006 and 2008. The only new aircraft types to be acquired by the BLMW are the four ex-US Navy SH-2G Super Seasprites which are due to be delivered to Poland by the end of 2002 at the latest, along with the second Oliver Hazard Perry-class ex-US Navy frigate. It is likely that in the future, Polish Naval Aviation will operate no fast jets at all. The reduced number of aircraft planned to be operated by the BLMW, in line with existing financial constraints, will mean reforming all three of the current Dywizjon Lotniczy (Naval Air Groups), with subordinate Squadrons, into three single squadron-size entities. In parallel with this, all existing Batalion Zabezpieczenia (Support Battalions) will form the core of future Naval Air Bases, to be formed for the first time ever in Poland's military history. The Mi-14PL ASW helicopter upgrade programme is well under way: three



The Antonov An-26 Curl is expected to be operated by the Polish Air Force until at least 2007.

KEY - DUNCAN CUBITI



Sokol W-3 0501 serves with the Polish Air Force, but other examples of the type serve both the Army and Navy. GERBEN VAN DEN BOSCH

upgraded helicopters have already been handed back to the unit by WZL-1 Military Aviation Overhaul Plant at Lodz, where the complete programme is being carried out. As a consequence of the programme, Polish Mi-14PLS will remain operational until 2010. The end-of-service date for the last three Mi-14PS SAR helicopters has been scheduled for 2007/2008. This means that the number of W-3RM SAR helicopters currently operated by the BLMW will not be sufficient to carry out maritime SAR and MEDEVAC missions effectively. SAR-related modernisation of a Mi-8 and Mi-17 recently acquired by the Polish Naval Aviation would be one way of overcoming the shortage. Procurement of two further Mi-17s is being considered. The fate of a new Polish naval helicopter known as Sep (Vulture), to be based on the yet-to-be built new Polish 'Class 621' corvettes, remains unclear. Some initial work has already begun at the PZL Świdnik factory and the new helicopter is reported to be derived from the little-known SW-5 project. Capabilities of the M-28B-1R MPAs will also be enhanced by a number of projects run by PZL Mielec, including the planned replacement of the aircraft's fixed undercarriage with a redesigned semi-retractable unit.

LOTNICTWO MARYNARKI WOJENNEJ (NAVAL AVIATION)

Brygada Lotnictwa Marynarki Wojennej (BLMW)

Gdynia-Babie Doły		
(Naval Aviation Brigade)		
1 Dywizjon Lotniczy Marynarki Wojennej	Gdynia-Babie Doły	
(1st Naval Air Group)		
Eskadra A	MiG-21bis/UM, TS-11	
Eskadra B	MiG-21bis/UM, TS-11	
Eskadra C	PZL W-3W/RM, M-28, Mi-2RM	
2 Dywizjon Lotniczy Marynarki Wojennej		
(2nd Naval Air Group)		
Eskadra ZOP	MH4PL	
Eskadra SAR	MH4PS	
	Mi-2RM	(Det at Dziwnów)
3 Dywizjon Lotniczy Marynarki Wojennej		
(3rd Naval Air Group)		
Eskadra Rozpoznawcza	TS-11, TS-11R	
Eskadra Patrolowo-Ratownicza	M-28 Bryza-1R	

Polish Army Aviation

One of the most important developments within the Polish Army in 2001/2002, and one which had an impact on the command and control of its aviation assets (known as Lotnictwo Wojsk Lądowych or LWL), was the

creation of two Mechanized Corps at the beginning of 2002, which stood up with the assignment of selected combat units of the Polish Army. Consequently, a number of LWL units have changed their subordination, with the current set-up shown in the associated table.

The LWL is equipped exclusively with helicopters of various types and purposes, including 44 Mi-24D/V combat helicopters, W-3W/WA Sokol assault helicopters, 18 armed and eleven unarmed Mi-8 transport/assault helicopters, six armed Mi-17s, 22 Mi-2 URP/URPG anti-tank helicopters and 21 unarmed Mi-2s of various support and Army Co-operation variants.

The upgrade of up to 40 Polish Mi-24D/V remains a high priority, and following an agreement signed by the Czech, Hungarian, Polish and Slovak Defence Ministers on May 29, 2002 at Piestany (Slovak Republic), it will be included in the multi-national Visegrad Group modernisation programme, which will cover the upgrade of more than 100 Mi-24s. It is now known that Poland would be a leading partner in the running of the bidding process to select an avionics upgrade supplier and subcontractor. WZL-1 would be responsible for the prototype modernisation programme. Polish upgraded Mi-24s, to be designated Mi-24PL/Mi-24CSAR, would most probably be armed with one of the following anti-tank missiles: Denel/Kentron Ingwe, FPPU Rosoboronexport 9K113K, Rafael NT-D and EADS/Euromissile HOT-3. A total of 26 upgraded Mi-24PL will be taken on the strength of three Air Squadrons (two of 49 PSB at Pruszcz Gdański and one of

LOTNICTWO WOJSK LĄDOWYCH (ARMY AVIATION)

1 Korpus Zmechanizowany (1 KZ)	Bydgoszcz
(1 Mechanized Corps)	
49 PSB Mi-240, Mi-2s	Pruszcz Gdański
(various unarmed variants)	
2 Korpus Zmechanizowany (2 KZ)	Wrocław
(2 Mechanized Corps)	
25 Brygada Kawalerii Powietrznej	Lódz/Tomaszów-
(25 Air Cavalry Brigade)	Mazowiecki
1 Pulask Mi-8/17	Leznica Wielka
7 Pulask W-3W/WA2	Tomaszów Mazowiecki
56 PSB Mi-24W, Mi-2URP/URPGs,	
Mi-2 (unarmed variants) ³	

- Aircrews and helicopters are part of 37 Dywizjon Lotniczy (Air Group), which consists of three Eskadra Lotnicza (Air Squadrons), and together with a number of assault battalions forms the 1 Pulask (Regiment).
- The 66 Dywizjon Lotniczy (made up out of three Air Sqns) is an air element of the 7 Pulask.
- Both PSBs have three Air Sqns within their structure.

Glossary

BLot	Baza Lotnicza	Air Base
BLT	Brygada Lotnictwa Taktycznego	Tactical Air Brigade
EL	Eskadra Lotnicza	Air Squadron
ELT	Eskadra Lotnictwa Taktycznego	Tactical Air Squadron
ELTR	Eskadra Lotnictwa Transportowego	Transport Air Squadron
ELT-L	Eskadra Lotnictwa Transportowego-Lacznikowego	Transport & Liaison Air Squadron
LES	Lotnicza Eskadra Specjalna	Special Air Squadron
LGPR	Lotnicza Grupa Poszukiwawczo-Ratownicza	Air SAR Group
OSL	Ośrodek Szkolenia Lotniczego	Air Training Centre
PSB	Pulask Śmigłowców Bojowych	Combat Helicopter Regiment
	-Eskadra Patrolowo-Ratownicza	Maritime Patrol & SAR Squadron
	-Eskadra Rozpoznawcza	Recce Squadron
	-Eskadra ZOP	ASW Squadron

56 PSB at Inowrocław), whilst four Mi-24CSAR would form the core of the CSAR Force element at Pruszcz Gdański. It is intended that any new combat helicopter for the LWL would be delivered to Inowrocław-based 56 PSB. Acquisition of 12 such helicopters of a yet-to-be specified type has been included in the Polish Armed Forces' modernisation plan: however, exactly when the selection process would be officially initiated remains unclear.

Meanwhile all Mi-8/17 and W-3W/WA are being retrofitted with onboard avionics and some other systems required to enhance their operational capabilities, including RWR, NVG-compatible cockpit outfits, new radio transceivers and navigation equipment.

JACK SILENT



PZL W3RM Sokol 0511 (c/n 390511) displays a high visibility scheme appropriate for its search and rescue role. The Polish Navy operates around five examples of the helicopter. KEY ALAN WARNES


Portugal

THE BIGGEST on-going priority for the Portuguese Air Force (FAR) is the F-16 fleet, and despite a general cutback in public spending, the Peace Atlantis programme has been going ahead since October 2001.

Under this programme, 25 ex USAF F-16A/B OCU will be acquired to equip a second Esquadra (Squadron) of 20 F-16s (the balance of five aircraft being used for spares reclaim) and upgrade them to the Mid-Life Update (MLU) standard operated by the other European nations participating in the programme. Before the MLU, the aircraft have to undergo structural rejuvenation, which includes checking technical orders and modifications made to the F-16 fleet while they were stored at Aerospace Maintenance and Regeneration Center (AMARC) at Davis-Monthan AFB.

The individual phases of the Peace Atlantis II programme are known as Docas (Docks) and consist of:

- Doca 1/Dock 1: (March 1999 - October 1999), USA/BA11, Beja

All 25 aircraft prepared for transportation, and eventual arrival at Beja Air Base

- Doca 2/Dock 2: (November 1999 - 2001), BA5, Monte Real.

Preparation for implementing Technical Orders (TOs) and modifications (including disassembly, test, repair and inspection of components and sub-systems)

- Doca 3/Dock 3: (from January 7, 2002), OGMA (Industria Aeronautica de Portugal SA), Alverca.

Structural changes and modifications to the aircraft are carried out and TOs implemented. Mid Life Update carried out.

- Doca 4/Dock 4: (from March 2006 onwards), OGMA, Alverca.

Assembly of systems and sub-systems, plus testing.

Modification of the first two Lead-The-Fleet (LTF) aircraft is the responsibility of Lockheed Martin Tactical Aeronautical Systems, except for the introduction of some extras and modifications, such as the ECP4087 and the Radar Warning Receiver (this work is due to be carried out by the FAP and OGMA.)

This phase is to be concluded by January 2003, and will involve one F-16A (serialised 83-1076, FAP no 15133) and one F-16B



F-16A 15117 serves with Esquadra 201 Falcões, the first unit to be equipped with the type based at Monte Real. KEY - ALAN WARNES



Eurocopter EC635 c/n 0216 (with the test registration D-HECK) is one of the examples being produced for the Portuguese Army. RUI FERREIRA

(serialised 83-1168, FAR no 15139).

Four more aircraft will follow, work on these being carried out mostly by OGMA personnel - though some FAR personnel will also be involved - and the whole operation will be supervised by LMTAS. This phase is due to begin in January 2003 and be complete by June 2004. These aircraft will be followed by the 14 production aircraft from September 2003 to March 2006.

Engines are being assembled and upgraded to F-100-PW220E standard at BA5 Monte Real. All the flight surfaces are being refurbished at Hill AFB, Utah, and the radar systems will be modified, both at BA5 and in the USA at the Northrop Grumman facility.

This work, on what is the second batch of F-16s, was included in LPM2001 (Military Programme Law). A decision on a Mid Life Update programme for the first batch of 20 F-16A/BS, which were acquired in 1990 and which have been in use since 1994, is still awaited and depends on the success of the work done at OGMA. The next LPMs will include the acquisition of six Rafael Litening II LANTIRN/FLIR pods, along with BVR weapons for the MLUF-16s.

The EH-101 has been selected as a replacement for the Puma, beating off challenges from the Sikorsky S-92 and the Eurocopter Cougar Mk 2+. The EH-101 Merlins are expected to fulfil the SÂR, CSAR and tactical transport missions, though two of

them will be funded by the European Union for use in the System of Supervision of Fishing Activity Control (Sistema de Fiscalização e Controlo das Actividades da Pesca - SIFICAP) on a rotational basis.

If all goes according to plan, the first helicopter will arrive at Montijo Air Base by 2004. Flight crews and technicians will undergo conversion courses at Agusta, Italy, in advance of this and conversion to this type will be made using one of the first EH-101 to appear in FAP colours.

Meanwhile, the modernisation and life extension programme for the P-3P Orion fleet, which was to start early this year and prolong the aircraft's operation life for up to 20 years, has been shelved. (This version is equivalent to P-3C Upgrade II aircraft.) However, it is said to be included in the next LPM (LPM2003).

There has been pressure in some political

**AOB: PORTUGUESE AIR FORCE
(FORÇA AÉREA PORTUGUESA)**

Grupo Operativo 12	BA1 Sintra
Esquadra 401 <i>Cientistas</i>	CASA 212-100/300MP
Esquadra 502 <i>Elefantes</i>	CASA 212-100
Esquadra 505 <i>Jakarés</i>	Reims FTB 337G
Esquadra 802 <i>Águias*</i>	Chipmunk T.20
	L-23 Super Blanik
Grupo Operativo 41	BA4 Lajes
Esquadra 711 <i>Albatrozes</i>	CASA 212-300, SÁ 330
Grupo Operativo 51	BA5 Monte Real
Esquadra 201 <i>Falcões</i>	F-16A/B Block 150CU
Esquadra 304 <i>Magníficos</i>	F-16A/B
Grupo Operativo 61	BA6 Montijo
Esquadra 501 <i>Bisontes</i>	C-130H/H-30
Esquadra 504 <i>Linces</i>	Falcon 20DC, Falcon 50 +
Esquadra 601 <i>Lobos</i>	P-3P
Esquadra 751 <i>Pumas</i>	SA 330L Puma
Grupo Operativo 111	BA11 Beja
Esquadra 101 <i>Roncos</i>	TB30 Epsilon
Esquadra 103 <i>Caracóis</i>	Alpha Jet A
Esquadra 301 <i>Jaguars</i>	Alpha Jet A
Esquadra 552 <i>Zangões</i>	Alouette III

+operates from Lisboa Portela *part of Air Force Academy

Squadron Names

<i>Águias</i>	Eagles	<i>Albatrozes</i> Albatrosses
<i>Bisontes</i>	Bisons	<i>Caracóis</i> Snails
<i>Cientistas</i>	Scientists	<i>Elefantes</i> Elephants
<i>Falcões</i>	Falcons	<i>Jaguars</i> Jaguars
<i>Jakarés</i>	Alligators	<i>Linces</i> Lynxes
<i>Lobos</i>	Wolves	<i>Magníficos</i> The Magnificent
<i>Pumas</i>	Pumas	<i>Roncos</i> Roars
<i>Zangões</i>	Drones	



Portugal is one of the few countries that still uses the DHC-1 Chipmunk. The Portuguese Air Force Academy uses the type - with the original engines replaced by Lycomings - for air experience flights and as glider tugs. RUI FERREIRA

areas for Portugal to pull out of the A400M project, which was intended to replace the fleet of six C-130 operated by Esquadra 501 *Bisontes*. The country's new MoD is considering what is felt in some circles to be a more cost-effective solution - conversion of the current fleet to C-130J standard. The debate now is on whether to go for the more economical solution (continuing to use six aircraft), or to do things the hard way and invest in three or four A400Ms, though this option would eventually result in the Portuguese aviation industry attaining greater levels of technology and development. Either way, a decision is expected soon.

The Alpha Jet fleet continues to experience a lack of vital funding for maintenance, though future LPMs are expected to include a bigger allocation for this. Only eight of these aircraft are currently airworthy.

The fleet of Dassault Falcon 50 aircraft was to be augmented by a sole ex Federal Express Falcon 20 to be used mainly in the Verification and Calibration of Navigational Aids (VCAN) role, and a further Falcon 50 was due to be acquired. However, a decision is still pending, and will be made when a new VCAN console has been selected. No replacement is in sight for the Alouette III, despite the political heat having been turned up since the crash of an Alouette III on April 9 (serialled 19301). Maintaining this aircraft is expensive as it requires continuous attention, but it has to be said that it fulfils all the missions requested of it. It looks likely to be the next type to be replaced.

Portuguese Army

Last April, six of the nine Eurocopter EC 635T1 helicopters were customised at OGMA for the Portuguese Army's (Exercito Portuguese) GALE (Grupo de Aviação Ligeira do Exercito, Army Light Aviation Group). They were flown as EC 135s from the Eurocopter facility at Donauworth between September 2001 and March this year, and are undergoing several changes at OGMA to convert them to EC 635T1 CPDS (Control Panel Display System). These models include a customised

communications/navigation suite, skid alterations, cable cutters and the painting of the aircraft by personnel from OGMA and Eurocopter. The last helicopter to arrive will probably be 19101, which is still at Eurocopter Deutschland on crew adaptation courses.

The introduction of this helicopter to the Portuguese Army inventory will enable reconnaissance/observation, attack, command, MEDEVAC/CASEVAC, and liaison mission to be carried out. The new unit will be based at the former Base Aerea 3 at Tancos and is expected to be fully operational by the end of the year. The nine helicopters will be numbered 19101 to 19109, and the first (19102) is expected to be ready by July, having been seen in the final stages of modification in late April.

In June 2001, Portugal signed a Memorandum of Understanding (MoU) to participate in the NHI NH90 programme, and in May this year the Portuguese company Edisoft signed an agreement in Berlin with Eurocopter Deutschland to take the first step towards research and development of the software for the NH90 helicopters. This deal, representing 10 million Euros, will cover three years and include the development of software for the

entire NH90 fleet, not simply those destined for Portugal. Portugal will acquire ten NH90s in a deal worth around 400 million Euros: in two versions, the transport version (TTH) and the naval version (NFH). If there are no delays, the first delivery should take place by 2008.

Portuguese Navy

Like the other branches of the Portuguese Armed Forces, the Navy is experiencing major cutbacks in funding. These are not due solely to a difficult economic situation, but to the Portuguese Government overstressing its financial resources on overseas missions. Before the acquisition of additional helicopters for the Vasco da Gama class of frigates is even considered, there is a requirement to re-equip much-needed patrol and SAR vessels, as well as the replenishment/support of ships and submarines.

RUI FERREIRA

AOB: PORTUGUESE NAVY (AVIAÇÃO NAVAL)

Esquadria do Helicópteros do Marinha Montijo
Super Lynx Mk 95

Glossary

BA (Base Aérea)	Air Base
Esquadra	Squadron
Esquadria de Helicópteros de Marinha	Naval Aviation Helicopter Flight
Grupo Operativo	Operations Group



Portugal is currently preparing for its second squadron of F-16s, with 25 examples of the Air Defense Fighter having been delivered to the country in 1999. A total of 20 will equip a second F-16 unit of the Air Force. RUI FERREIRA

PART THREE WILL APPEAR NEXT MONTH

AFM IS NOW RESEARCHING A SURVEY ON THE AIRFORCES OF LATIN AMERICA IF YOU BELIEVE YOU CAN ASSIST, THEN PLEASE GET IN TOUCH WITH THE EDITOR

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