

SLOVAK REPORT ON NATO'S EASTERN BORDER

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Two important dates are marking the recent history of the Slovak Airforce. At first ofcourse the date of 01-01-1993 when Czechoslovakia split up in the Czech and Slovak Republic leading to the foundation of the Slovak Air Force and establishment of the 1st Air Force at Sliac Air Base with deployment of Mig-29's straight from Czechoslovakia's previous inventory. The second most important matter happened at 01-04-2004 when Slovakia became a NATO member. As Eduard Kukan, minister of foreign affairs of the Slovak Republic stated in 2004; [NATO enlargement extended the zone of security, stability, freedom and democracy](#). Slovakia showed no less eagerness than neighbouring countries to join the NATO family and consequence restructuring of air force and air bases complies with NATO procedures and needs for the alliance.

In the face of reorganisation

However starting in the beginning with a considerably variety of aircraft, withdrawal of older types, not fitting in the new doctrine and disclosure of airbases reduced the number of types. The aircraft which stayed in the inventory were selected concerning their tasks, the operational possibilities and conditions of mainframes. In recent years the L-29, the Su-22 (partly sold to Angola) and the Su-25 (partly sold to Armenia) retired while the one remaining An-24 was grounded and withdrawn from use following a fatal crash of An-24 with serial 5605 on January 19, 2006. This airplane, bringing KFOR soldiers back home after their tour of duty, was lost in heavy weather on a flight from Pristina to Kosice. One passenger survived the disaster which is commonly felt as a national trauma. Slovakia made serious attempts, in particularly concerning the safety but also concerning the operational ability to upgrade their aircraft as much as possible also with the aim to bring them to NATO Standards. The chosen philosophy has lead to a one company concept for all involved aircraft, installing the same instruments in different types.

All new IFF equipment for upgrade programs was acquired from British Aerospace (BAe) while Rockwell Collins was selected to deliver TACAN, VOR, DME and ILS instruments. Letecke Opravovne Trencin (LOT) Sp. in Trencin, which is responsible for the overhaul of all the Slovak Air Force aircraft and helicopters, became the subcontractor for the system integration with technical help and supplies from Ceske Letecke Sevisni A.S. from the Czech Republic. A process of reconsidering the Air Force needs and renumbering of units and airbases resulted in three operational airfields which two of them adopted a name of a Czechoslovakian World-War II hero as a honour to the nation. Sliac, housing the fighter force and the jet training component became 'Major Otto Smyk Airbase' and Presov the purely helicopter base was renamed 'Col. Gen. Jan Ambrus Airbase' while the transport base at Malacky was not renamed. Other important locations are the headquarters (HQ) and the Command and Control facility (CCRB) in Zvolen nearby Sliac and the Ground Based Air Defense brigade (GBADB) in Nitra. Nearby Malacky in Kuchina is a big shooting range which attracts foreign airforces from other NATO partners.

Mig-29, Slovakia's pride

The aim of NATO is to reduce Soviet made equipment within the inventories of their members. Concerning fighters, the choice is between U.S. supplied F-16's, new or from

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surplus stock or European made fighters, but in all cases ofcourse NATO compatible. Sometimes however circumstances leading to compromises. Slovakia, just like Bulgaria decided to upgrade their Mig-29's in service as a cost-effective operation and keeping this way still a very potent fighter in the air. The modernisation program valued \$ 74.2 million was deducted from Russia's debts owed by Slovakia. To meet NATO requirements and in the same time obeying restrictions to apply Western technology directly to Russia, the Slovakia Government put the aircraft repair and manufacturing company LOT in a key role. BAe Systems and Rockwell Collins gave input to RSK-Mig in Moscow for which requirements the software should be specified. This resulted in a cockpit with two Russian made Multifunctional Colour Displays (MFCDD). A large MFI-54 and a smaller PUS-29M showing data from the BAe Systems IFF APX-113 antenna and Rockwell Collins AN/ARN-147 VOR/ILS/MKR multiband receiver for short landing and TACAN tactical navigation transceiver (AN/ARN-153) fitted up and under the nose section. A MIL STD 1553B open architecture multiplex data-exchange channel has merged their new functional systems into a whole. Russia delivered the BTSVM MVK-03 computer with provision to take input from USB-sticks or flash cards with pre-programmed information from ground based computers.

New for RSK was to adopt miles, feet and knots, leaving the metric system. For instance the cockpit instruments comprises the UMS-2,5-2U speed meter and USM-800E mach-meter indicated in knots, the UV-30-2F altimeter in feet and the 1 STR 4-5A fuel meter in pounds. The distance on the Pilotny Navigacny Pristroj or PNP-72-12M is indicated in miles and the vertical speed on the DA-200PF in feet/min. In the cockpit, behind the pilots seat is a MAGR GPS unit installed while behind the canopy a clearly visible black antenna on the fuselage is connected with the 33 khz Rockwell Collins AN/ARC 210 UHF/VHF radio station with control console and satellite navigation receiver (same installed in F-16). This radio is situated immediately left from the pilot while on the right side the Russian R862 radio stayed as back-up. The MFI-54, showing navigational information from TACAN, GPS, RWR etc. can also work as back-up for the smaller PUS-29M placed just under the HUD. For debriefing a Russian SVR video registration system with mini-TV enables 60-80 minutes of cockpit registration. At two points on the fuselage new Hella anti-collision lights were installed to make the aircraft clearly visible.

New simulator and new paint

Some problems had to overcome by LOT but they succeeded finally in five months to create a prototype with a fully working system which was quite challenging because it was never been done before. Chief pilot Vlasov of RSK made the first two check flights, demonstrating the concept was actually working and satisfying and after this Slovak people took over. The next Migs took 1-1,5 months to rebuilt. During February 2008 there was ceremony to start the new life of the Mig-29 after completing the upgrades. Despite earlier plans only the last batch of the Mig-29A and Mig-29UB directly received from Russia were approved by the government for the new upgrade while older examples out of the Czechoslovakia inventory were withdrawn of use. Part of the deal was also a new similar cockpit configuration in the existing static trainer which is combined with a virtual landscape of VRM-Trencin and operated as a full mission simulator. VRM or Virtual Reality Media delivered the construction to create the graphics such as projectors and virtual picture surrounding. In the dual contract with the MoD the cockpit instruments were delivered by RSK. The simulator can be linked with those of the L-39 which was upgraded too and thus enabling dog fight mode or possibility to train formation flying. Surprisingly the government reserved also budget for a separate program of repainting, because the old paint slightly disappeared under the sun and the Fulcrums were turned in one by one to LOT for the new outfit. The lay-out is a very attractive combination of grey-tones in a slightly different pattern with one example obtained

a tail paint in the national red/blue/white colours. Totally ten single seaters Mig-29A and two double seaters Mig-29UB went through the process of upgrading and were re-designated Mig-21AS and Mig-29UBS. The life-extension is estimated beyond 2015 and a small group technicians of RSK-Mig were agreed to stay on the base for at least five years. They will take care of engines, spare parts etc. and will frequently check the condition of the aircraft, especially the mainframe.

Pilots in operation

The Mig-29's are assigned to NATO and Slovakia was asked to contribute in rotation for the Baltic air defence, but such missions needs much logistics, consumes budgetary and will shorten life extension of the Migs. Also the pilot group must be large enough to be potent for a dual task as national defence and rotations to foreign countries. Bratislava did not choose for participation in the latter. For national air defence two Mig-29AS are on 24 hours quick reaction alert. When talking to Major Bykovsky, a Mig-29 Pilot and flight instructor with more than 700 flying hours he explains to us that the Mig-29AC became a completely different aircraft. This implicates not so much other flying characteristics but a highly improved awareness and cockpit management making it very easy to execute any kind of mission. The multifunctional indicator shows everything you need such as targeting information, flight route, system status, database for way points etc. The RLPK-29 Doppler look down/shoot down radar is accurate in both air-to-air and air-to-ground missions. All pilots perform all kind of missions and are fully combat ready. The Mig-29AS can be armed with the IR-homed Vympel R-73 (AA-11 Archer) or the older R-60 (AA-8 Aphid) and the TV-guided R-27 (AA-10 Alamo) medium range BVR missile. Major Bykovsky considers the R-73 as the best rocket in close combat and claims after his experience in a visiting Dutch F-16 that the Mig-29 performs better in dogfight thanks to more thrust. The F-16 was in his opinion better in the BVR-situation. Upgrading of the Mig-29 is not on its end and he would like to see next time an upgrade of the radar andIRST to achieve active radar capability for the radar-homing R-77 (AA-12 Adder), the Russian AMRAAM.

Sliac

At Sliac are based besides the Mig-29 equipped No.1 'Tiger' squadron two other squadrons. These are the No. 2 squadron with L-39 training aircraft and the No.3 squadron with Mi-17 SAR helicopters. Sliac took the training role from Kosice where the air force academy is situated. All L-39C were transferred to Sliac. The elementary flying training task was contracted to a civilian company in Zilina. A theoretical course and some 150 flying hours on the Zlin Z142 are needed and after this the cadet can start multi-engine training, fast jet training or helicopter training. The L-39ZA aircraft have undergone a technical improvement with LOT, technical supported by CLS under the MODER program resulting in a prolonged life cycle. New radar, IFF, navigation and radio communication systems were fitted comprising some equal instruments like on the Mig-29 and all on board systems are now fully compatible with NATO standards. The work stations have also been modernized to an updated man-to-machine communication interface. Equally the L-39's were converted to L-39CM and the stunt team Biele Albatrossy was deactivated. Some six L-39CM are serving in the advanced flying training role, which requires some 50 hours, while some seven L-39ZA (M) equipped with a gun perform besides training also light attack missions when required. Slovak Air Force adopted new thoughts to let cadets meet the flying practice in a much earlier stage than before after approximately some two years study at Kosice in order to achieve in the pilot group younger fully capable pilots. The L-39's are useful to keep up the Slovak Mig-29 pilots with cheaper flying hours but they will also act as counterparts in combat training missions for the Mig-29. This involves only interception or gun –mode

training without really close combat exercise. The L-39's sometimes go to Brno in the Czech Republic to train the Gripen on QRA and practice interrogation which is called Tango Scramble flights. A second mission for the L-39's is to train Forward Air Controllers (FAC) under Close Air Support conditions. To improve the communications between flight crew and FAC there is an annual Flying Rhino Exercise with international contenders where this type of mission is practised. Close combat training will be necessarily received from visiting NATO squadrons. Chances have been occurred in the past and recently a fine opportunity was there when five RAF 100 sq. BAe Hawks from Leeming visited Sliac and joined in exercise Slovak Hawk 2007. The Hawk is far more utilised to train close combat than the L-39. The aim of the exercise was to carry out practical training of air combat manoeuvres and conducting combined air operations with Hawk, Mig-29 and L-39 with mixed English/Slovak crews. In the conducting phase Slovak and British pilots undertook composite air operations (COMAO) packaging in respect of air defence systems. According to Lt. Col. Dorcak the exercise helped especially the younger, less experienced airmen of the 1st and 2nd squadrons to gain much needed experience.

Helicopter force

The main helicopter force is located at Presov which is the most eastern located base on NATO grounds near the Ukraine border. Funny how the history changed the location from an inwards Warsaw pact base into a NATO embedded outpost. The base houses a mix of Mi-2 and Mi-17's in one squadron and Mi-24 helicopters in a second squadron. At this moment the main component is formed by the Mi-24 which serve in the anti armour attack role and direct ground support of ground forces. Secondary roles are defence of Slovak republic airspace with air-to-air warfare and destroying air defence facilities and air control posts in battle area. In recent times the amount of Mi-24 was reduced from approximately 15 to 10 active examples mostly Mi-24V versions armed with modern 9M114 Sturm missiles. The Mi-17 Hip-H of which some 10 are believed operational fits the most in international cooperative missions. Some four Mi-17's are declared to NATO and useful in logistics, cargo and troop transport. Together with these 14 pilots or you may say 7 crews are involved and they fly 150 hrs. a year which is considerably more than other helicopter crews do. Performing the most tasks the Mi-17 is the workhorse and besides transport duties the helicopters can provide anti-forest fire activities with a water bucket from the air and bring para-jumpers into special locations. During 2007 almost 200 sorties concerned fire-fighting and some 15 people were saved. Basically CSAR is possible with both Mi-17 and Mi-24 but this is a very difficult task which requires a lot of commando training. The Mi-17's, however most of them modernised to Mi-17M with NATO-compatibility do not have Night Vision Goggles and therefore this task can only be done in close operation with other NATO allies. The Mi-17M is nevertheless a potent helicopter, modified in the LOT factory with support of CLS. The helicopter was fitted with colour MFD's and additional shell plates, some visible around the cockpit and some inside.

Presov is tasked with SAR missions but additionally to establish an adequate SAR coverage in especially the mountainous area in the middle of the country a special helicopter group was formed at Sliac acting independently from Presov. This concerns more upgraded Mi-17's to Mi-17 LPZS (Letecke a Pozarni Zachranne Sluzby). Totally four examples were planned to receive a new upgrade with LOT in cooperation with CLS from Czech Republic and ELBIT ltd from Israel. Recently the first examples entered service and were marked with yellow stripes. Not only a digital cockpit with moving map and NVG capability but also a FLIR/Day-TV unit under the nose and new meteorological weather radar were fitted. The Mi-17LPZS has a Rockwell Collins communication and navigation suite and BAe systems identification. The hoist was strengthened to carry 300 kilo's instead of 150 and the crew can use a very

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strong searching light mounted on the side fuselage to find people in the dark. Pilots fly as much as possible and so do cadets in flying training programmes under all weather conditions. On the Mi-2 some 150 hours basic training is needed to start follow-on training on the Mi-17 or Mi-24 but the Mi-2 suffer with some maintenance problems and maybe 5-6 are in use at Presov and one at Sliac but their serviceability is unknown. The capabilities of the young pilots are observed individually to decide when a pilot is ready without stating a time frame.

International commitment

Two Mi-17M's were deployed in SFOR missions in 2002-2003 in Bosnia and recently on mission in Kosovo on a 6 months rotation period from 16 December 2007 until 16 June 2008. Slovakia was considering operating Mi-17's in Afghanistan but the number of flying hours was not sufficient enough to execute the missions necessary for Afghanistan and there was no experience with logistics to go so far. The Mi-17's are twenty years old and not designed for high and hot (H &H) environment, the costs were very high and the mission very difficult so the plans were rejected. Nevertheless Slovakia is deploying army units in Afghanistan amongst them recently a very welcomed de-mining unit. Air force personnel also participated in UN-missions in Cyprus, the Golan Heights, EUFOR-HQ in Sarajevo and in Iraq in 2005. The future plans do not foresee replacement of the Mi-24 and maybe this task will slowly fade out. Bratislava is focussing on a new medium transport helicopter and some pilots mentioned that they should like to have new Mi-171 as a successor because they are satisfied about their experience with the Mi-17. Slovakia plans to participate with helicopters in the European Battle Group which is to be formed with 1500-2500 people and under polish command with an expected readiness in the first half of 2010.

Transport wing

After housing several attack units in the past since 2006 the transport wing is based at Malacky. As mentioned the sole remaining An-24 was grounded and retired after the accident leaving the transport unit with two An-26 medium and a few L-410 light transports. Slovakia is seeking for replacements and candidates were initially amongst the Casa CN-235, the C-27J Spartan and the C-130 Hercules, the latter being favourable under the military. There was a presentation in May 2006 but after a fatal crash with a Polish CN-235 this aircraft seems out of view. In the meanwhile Antonov was regaining attention recently and so it is still an open question. The An-26 served for 30 years and flew to 50 airports including Kazakhstan, Kosovo, UK, Ramstein to deliver cargo for Afghanistan to US shuttles and to destinations in many other European countries as an escort for visiting fighters or helicopters. Some seven L-410 are to be found on Malacky including some three-four L-410-UVP-T para version in camouflage and two L-410-UVP-E economic versions (white) in VIP roles and one L-410-FG for aerial photographic missions.

A Mi-8 Salon VIP version was traded with Sliac for an L-410. After the first experience at Zilina the beginning pilot starts as a 2nd pilot on the L-410 and after becoming a captain he can try to become 2nd pilot at the Antonov and so on. Pilots are regularly bought away by commercial airlines including pay backs for their study and training programmes and so only those who are really dedicated to the military or do not want simple, better paid but boring 'buss driver' jobs stay in the Slovak Air Force. Major Prokop who is the deputy commander flies the Antonov himself and seems to enjoy this very much. Interesting is the SAR coverage from this base. To reach the disaster spot in an early phase the transport wing is able to bring in para's with a special attack bag with medical equipment for first aid in prelude to helicopter arrivals. The attack bag of 20 kg is placed on the stomach while the parachute

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ofcourse is on the back. When the parachute is opened the attack bag is released to hang under the legs of parachutist and will reach the ground first and thus enabling an easy landing. Four instructors are in duty to train the pilots who all must jump regularly. Other paratroopers for example the red barets from Zilina jump with groups from the L-410 which can be very windy or from the An-26 which is much easier and perform several distances of freefall up to maximum 4000 m. Once or twice a year they jump from 8000 m with oxygen and then precautions will be needed in cooperation with Bratislava Airport not to interfere in commercial traffic.

Drop zone

Nearby Malacky Air base at Kuchina is a huge shooting facility which was famous under Warzaw pact countries. This comprises facilities for infantry, cavalry and ranges for aerial attacks on a terrain with ideal ground-surface for targeting. A memorandum of understanding was signed with the United States concerning the use of the Facilities on 9th February 1999. During 2000-2002 there were deployments of 52 FW F-16's and A-10A's, 31 FW F-16's 555 FS F-16's and 81 FS A-10A's. Aviano units were only to fly over and release bombs while others were deployed to Malacky. At Range 'B' for aerial attacks there are two towers with camera's to observe the impact area of 3300m long and 2600m wide for run-in-line attacks. The centre of impact is 9 km. from Malacky air base and aircraft can reload and repeat in short time. Horizontal and angle deliveries are possible with bombs up to 500 kg (1000 Lbs). Shortly after our visit to Malacky a team of 18 mirages from Armee de l'air was deployed to gain their experience. At Bratislava airport is a related government flight and police force which were not included in this report. Bratislava worked hard to accomplish an air force which is fully integrated in the NATO doctrine and Slovak aircrews are welcomed on grounds of other members and respected because of their dedication. The Slovak airforce is to expect to renew its aircraft in a moderate time frame with the focus on European aircraft.

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