

UH-72A LAKOTA ON EUROPEAN GROUND

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The model of this helicopter is well known in Europe as the Eurocopter EC-145, but who takes a closer look will notice some differences. The Lakota is not manufactured in Europe but a product from EADS North America and therefore a seldom appearance in Europe. Secondly the Lakota is derived from the EC-145 and a militarized version which won the prestigious Light Utility Helicopter (LUH) competition of the U.S. Army. In this article we focus on the helicopter and the U.S. Army unit in Europe, where the type was qualified for.

WINNING CONTRACT

When the U.S. Army asked manufacturers to compete for a new multi-role Light Utility Helicopter to replace the ageing UH-1 Iroquois and OH-58 Kiowa's in the Army and Army National Guard fleets a standard procedure was started and well known famous helicopter manufacturers in the USA joined this competition as a routine and presented their design in the bid phase. This time they were accompanied by a new player in the game and what no one expected happened. The new player won and the European Aeronautic Defense and Space (EADS)-North America Company signed a contract in 2006 for the delivery of 345 examples which would be completely assembled in the Columbus, Mississippi factory in the U.S.A. This was a major breakthrough for EADS.

The UH-72A helicopters are an off-the-shelf airframe and by using the concept of militarising an existing commercial helicopter, the U.S. Army saved considerable amounts of time and money in designing and developing and a smoothly acquisition process was provided with the first deliveries in 2006/2007. In line with the tradition the UH-72A received the name of a native Indian tribe and the choice was made for Lakota. The Lakota received full rate production (FRP) approval on 23 August 2007. The full quantity of aircraft, planned at 345 will leave the production hall from 2008 until through 2017. Why was this helicopter the first choice?

The profile used by the U.S. Army was clear. The version would be an unarmed helicopter providing economical flying hours especially in training units and with capability for medevac and all kind of support missions in 'non combat environment'. It was obvious that within the philosophy used by the U.S. Army the type was never meant to act in high zones of threat. Possible tasks would be missions such as observation flights, homeland security, disaster relief operations, medical evacuations, law-enforcement operations, border patrol, drug interdiction, general support and logistic missions. The helicopter would mainly act in the USA. One of the main objectives of this acquisition was to utilize the U.S. Army training squadrons with a modern new standard helicopter. One of these training units, the Joint Multinational Readiness Center (JMRC) located at Hohenfels in Germany was visited in September of this year by our reporter during a small media event with a demonstration of the Lakota. The UH-72 shows as an advanced and capable helicopter. Much experience was already gained by the Eurocopter EC-145 on the civilian market and development was only needed for military use.

VERY COMPLETE STANDARD VERSION

The EC-145 meets the highest levels of European quality standards but the UH-72 acquired certification from the F.A.A. and complies with the U.S. Army formulated Operational Needs

Statements (ONS). The UH.72 is a twin engine helicopter with a hingeless rotor system with four composite main rotor blades and a twin-blade tail rotor. The rotor configuration provides reduced noise and vibration characteristics. The cockpit of the crashworthy airframe accommodates a crew of two and the cabin eight fully armed soldiers or two Aerolite NATO standard stretcher plus two accompanying medical personnel. The main and tail rotors are high set to allow fast and safe loading and unloading through the main doors and rear-fuselage clamshell doors even while the rotors are turning. The crew is sitting on two BAE Systems Simula energy-absorbing cockpit seats with ergonomic cushions and a four-point restraint system which are qualified to FAA crashworthiness standards. All seats are manufactured of strong lightweight composite including aramid and graphite materials.

The cabin seats are of fold-up design. The night-vision-goggle-compatible glass cockpit and cabin are fitted with a large multi-piece wrap-around front windscreen and multiple side-fuselage windows providing a high visibility on the surrounding. Data are projected by active matrix liquid crystal displays and the Thales USA Meghas avionics suite includes a centralised vehicle and engine management display (VEMD). The cockpit data presentation enables a high level of situational awareness and reduces pilot workload. The automatic flight control system from Sagem Avionics, Inc. includes two attitude and heading reference systems (AHRS), advanced power management (APM) computers, smart electro-mechanical actuators, TRIM actuators and fibre-optic gyroscopes. The autopilot is 3 –axis. Specialised radio communication equipment is double standard like the ARC-231 VHF/UHF Wulfsberg radio unit with tactical ability. The UH-72A's tactical communications system includes an RT-5000 wideband transceiver operating at 29 MHz tot 960 MHz and dual P-2000 tactical communications transceivers. The navigation unit includes a radio-altimeter, Mode-S-transponder, GPS and the night vision goggles enable night operations.

DIFFERENT VERSIONS

The modular design of the helicopter allows the fast and efficient installation of a range of mission modules. The U.S. Army operates five versions with a non-standard Mission Equipment Package (MEP). These versions are the Medevac, Security & Support (S&S), VIP, Observer Controller and OPFOR versions which are dedicated tot specific tasks. For example the Environmental Control Unit (ECU) is an air co unit installed on the VIP and medevac versions but to save costs not on the other versions. Opinions are different about this concept and some users suggest that cooling of avionics might be insufficient in harsh dessert conditions. Pilots asked for more air stream in the cockpit. Keith products, the manufacturer of the cooling system of the avionics however ensures fully performance under dessert conditions. The pilots asked for special spoilers to direct air stream inwards and received them. The medevac version is equipped with a medical kit, two stretschers and a Goodrich hoist type 44301. The VIP version is equipped with VIP-seats, carpet and situational Awareness/C2 modification.

The latter is also installed in the S&S version. Possible features for the S&S version are the Wescam MX 151 Electro-Optical/infra-red (EQ/IR) with FLIR, laser pointer and daytime camera and LCX RN6 EuroNav V digital moving map. On selected airframes are a hoist, and/or a LS-16 high powered search light fitted. All helicopters could be equipped with an Engine Inlet Barrier Filter (EIBF) but only selected airframes received this feature. Totally 135 examples are planned for U.S. Army active units including 42 medevac, 14 VIP and 40 CTC examples which last version is also stationed at Hohenfels. Also 210 examples will serve with the Air National Guard (ARNG) including 144 examples in S&S version, 48 examples in medevac version and 18 training examples. The CTC version is developed for Combined Training Centers (CTC) like the JRMC at Hohenfels and includes two types. One of this, the

Observer/Controller version, is especially in use to train U.S. Army personnel and the other version is the OPFOR version, playing the opponent.

The OPFOR examples are like the old Huey's in this role painted in a special camouflage.

CAT & MOUSE

The author interviewed U.S. Army Colonel Barker in a previous visit. The Hohenfels range was already known during WW 2 when Hitler's pantzer-divisions were trained on this facility but Colonel Barker explains that the range was gratefully adopted as NATO trainings base and is part of USAREUR. Today full scale scenarios in a realistic setting can be trained on this range with very complete mimicking of hostile environments using artists to resemble local civilian situations. The focus is on theatres resembling today's war zones where the U.S. Army is involved and are called 'downrange'. The last lessons learned in Irak and Afghanistan are projected in the exercises and tactics are updated from the last tour experiences. Also there is constantly communication with downrange areas so changes in tactics could be incorporated immediately. Constantly new teams start this training and are confronted with tactical lessons in the field. In a pre-phase there is a Leadership Training Program (LTP) and a follow-up with Tactic & Training Procedures (TTP). Commanders of training forces are giving orders related to their exercise. The trend is to do reversal briefings.

So many teams are making the same mistakes over and over. Where is the struggle? We are trying to share lessons from the past. We ask each of the commanders of the units; What are your training objectives? For every unit this will be different and commanders do have their priorities. Colonel Barker explains after this is clear the JMRC shapes the exercise to the commanders wish. Validation Tasks based on the training objectives are developed to measure the progress and everyday there is monitoring of the program of exercises. Green means 'trained', Amber means 'needs practice' and red means; where they are right now, they can't accomplish in downrange situation. When they leave, they are capable. Sometimes when the validation is missed we sent an Observe Controller (OC) with them to continue validation. To be able to participate at the JMRC-exercises the soldiers should be trained at platoon level. (collective training should be done at battalion level). We tailor the exercises based on the unit proficiency. The focus is on manoeuvring in other words; how to employ in the field. The training area is called 'the box'. Soldiers are transported on the field by the Observer Controller version. Special instruments installed in the OC-version such as the Observer Controller Communication System (OCCS) and a Smart On-board Data Interface Module (SMODIM) are designed to control training procedures. The OPFOR helicopters, replicating enemy air force and thus playing the bad guys are equipped with the Multiple Integrated Laser engagement System (MILES) and an Aircraft Kill Indicator (AKI). With these instruments it is possible to simulate hostile fire and to collect the results of this action. In fact it is a high tech laser game. In the theatre very exciting moments are created such as units replicating medevac are suddenly confronted with hasty attacks by the OPFOR helicopter replicating Apache helicopters. On ground assets like APC's or Humvee's there are sensors fitted as well, even on jeeps or personal weapons you may find transmitters. A standard training day includes some 5 hours flying with 4 helicopters and usually 1-2 helicopters in the same time.

TRAIN AS YOU LIKE

The box is comparatively small and bigger exercises asks for the use of the so-called 'longer legs' which are extended training areas in Hamilburg (Schweinfurt), Amburg and Oberfeitac. Also the settings could involve more assets varying from RPG's and machine guns to SAM-sites. Smoke and fireworks are used to achieve a very realistic setting. Also Forward Air

Controllers, called 'Bull's eye team' can be put in the field to work together with fixed wing aircraft. Many foreign fighters come here for training with FAC units. The exercises on the ground can also be participated by the allies of the NATO and sometimes Partnership for peace (PfP) countries. Some allies are not used to heavy integration of operations or are not used to work with helicopters, don't know how to act, etc. They train to get confidence and to employ in their ops. Opposing forces replicate the conditions on the place where they are going to. Sometimes there are language problems, but it is not a hard sell, everyone is very eager to learn. When they complete the course, they get a certification.

Twice a year the JMRC trains allies in the Bosnian situation and up to 100 civilians involved in simulating local conditions is not uncommon. When you get the chance to learn it must be very thoroughly, because no mistakes can be made when you go there. There means downrange. Sometimes the course is visited by national leaders or high level military to watch the progress of the units. Also the base can be used by visiting military units such as the British Army who bring with them their own equipment, helicopters etc. Whatever trainings obligation you may have for everyone it will be eventually the same prospect. Train as you fight and fight as you have been trained.

DEVELOPMENTS

The first experiences with the Lakota are satisfactory. The helicopter is quieter than the Bell UH-1H and a little bit smaller. Because of this the assault role is not possible to train with the Lakota, but transporting soldiers is not a primary mission. It looks like the JMRC will be the sole unit in Europe equipped with the UH-72A Lakota. The other helicopters will stay in the homeland or in countries controlled by the United States, such as Puerto Rico, but definitely the UH-72A Lakota will not be exposed in war zones. However some started the discussion to install weaponry as necessity, but from official means such a vision is not recognized and so at this moment nothing will change. The Lakota will be carefully watched when operating under extreme conditions if performances are steady as ever. EADS-North America could maybe get more access to the American market when the Lakota is a fully success. The big order even created a cooperation with another helicopter manufacturer. Sikorsky Support Services has been contracted to supply the UH-72A with Contractor Logistics Support (CLS) including maintenance contact management, spare parts delivery and field and depot-level maintenance. In the meanwhile it is fun to photograph the UF-72A, especially the special camouflaged OPFOR version.

UH-72A LAKOTA

Length	: 13,03 m.
High	: 3,45 m.
Main Rotor diameter	: 11,00 m.
Tail rotordiameter	: 1,96 m.
Weight (empty)	: 1792 kg.
Weight (max. take off)	: 3585 kg.
Max. load	: 1790 kg.
Crew	: 2
Engines	: 2 x Turbomeca Arriel 1E2 Turboschaft van 738 Hp each
Max. Speed	: 268 km/u
Service ceiling	: 5485 m.
Range	: 685 km of 3,3 uur
Climbing rate	: 8,1 m/s