

Doctrine

A C2 helicopter for the French Army Aviation?

by the French Army Aviation's Prospective and Studies Directorate

THE ARMY AVIATION IS PREPARING TO FIELD A NEW GENERATION OF HELICOPTERS IN THE COMING YEARS. THEREFORE AROUND 2010, THE FIRST TIGER HELICOPTER COMPANIES WILL BE OPERATIONAL AND THEY WILL BE SUPPORTED SOON AFTER BY THE UTILITY HELICOPTER COMPANIES EQUIPPED WITH THE NH 90 WHICH WILL REPLACE THE PUMA. THEN, THESE AIRCRAFT WILL HAVE TO FIT IN THE DIGITALIZED BATTLEFIELD, WHILE COPING WITH THE CONSTRAINTS OF AIR MANEUVER COORDINATION. HOWEVER, THEY WILL NOT HAVE AVAILABLE BOTH COMMAND AND CONTROL LINKS ESSENTIAL TO MAKE THE BEST USE OF THEIR OPERATIONAL CAPABILITIES. THUS THE EFFICIENCY OF THE FUTURE ARMY AVIATION WEAPON SYSTEMS REQUIRES TO HAVE A SPECIFIC COMMAND AND CONTROL HELICOPTER, ABLE TO COPE WITH THE MANEUVER TEMPO, TO RECEIVE ORDERS AND COORDINATION MEASURES, TO COMMAND AND TO FORWARD THE REQUIRED TACTICAL DATA TO SUBORDINATE AIRCRAFT.

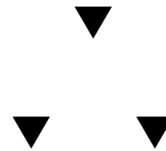
THE NEW DEAL

An Army Aviation company commander commands his unit from a weapon system aircraft, very similar to the helicopters fielded in his formation. For this purpose, radio assets are on-board at his disposal - FM VHF, AM VHF, UHF - enabling him to have links towards the upper echelons - Battalion CP, Airmobile TF or company task-force CP - and towards lower echelons - his patrols and his Company logistic support element. This task is a heavy one and it requires both organization and a great ease in flight. If considering the tiny space available inside the cabin, an helicopter company commander, his own aircraft commander too, and besides communication management, must also be able to open out his map without hampering the use of the controls, to study his terrain, to fly nap-of-the earth at 200 km/h by ordering his pilot, while taking care permanently about flight safety.

Helicopters more sophisticated and demanding weapon systems

In a current VIVIANE HOT Gazelle company, the company commander is also a missile gunner, a task he is able to perform during combat operations in addition to his command responsibility, as the

weapon system is rather easy-to-use. However, would it be the same, if he had to board a TIGER, a much more demanding combat tool? In fact, to use at best the greatly increased capabilities of this helicopter¹ will require from the crew more workload² and more attention hardly compatible with other heavy duties.



A new general framework for employment

Within a new context for committing ground forces, either violence mastering or force coercion, within a framework most often multinational, airmobility has a primary role, considering the large number of missions it can carry out, either by providing direct support to ground forces [fire support, airmobile operations, Medical Evacuation,...] or by conducting autonomous operations [in-depth target suppression, inserting HUMINT (Human Intelligence) teams,...].

In order to carry out the role granted by its specific skills and capabilities, the airmobile component has to be in a position to be simultaneously integrated into ground and air dispositions, both national and allied.

1 Gun, rocket or missile weapon systems, self-protection, observation and navigation assets.
2 Very intensive by day, it will also be very important by night

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The fielding of a new helicopter generation with more tactical capabilities and the necessity to fit into the three dimensions of a soon digitalized battlefield result into a new requirement for the Army Aviation, i.e. a C2 aircraft: the C2H.

C2H EMPLOYMENT AND FEATURES

Interoperability

The C2H is the missing link, between the chains of command and weapon system helicopters. As a command helicopter, it will enable while flying to conduct the action of attack, intelligence, protection, and support or transportation modules (mixed or not). As a coordination and control helicopter, it will be able to receive and retransmit the instructions for air maneuver coordination and guidance (direct control) in real time.

As the last tool for the land forces' chain of command, as a mobile moving in the airspace shared by all the armed forces and allies, as an interface of the direct control chain, and implemented by MARTHA, the C2H will have to be interoperable with all the command, coordination and control systems enabling it to operate.

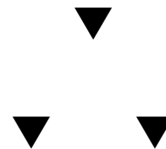
A command helicopter

In the chain of command the C2H is placed between the weapon system helicopters and the battalion's or the airmobile task force's command and control assets, deployed on the ground. Thus, it will enable to command airmobile units at company or company task-force level.

For this purpose, the C2H will have to enable a dialogue whether by voice and/or data transmission:

- > towards higher echelons with the Battalion Control and Information System;*
- > towards lower echelons with Terminal Information System), fitted into the Weapon System Helicopters.*

Physically located behind the weapon system helicopters and enabling to conduct their maneuver, the C2H provides an extension to the communication chain and thus it extends the commander's action and reaction capability, in reflex time, as well in the tactical field as in the logistical one: instantaneous transmission of orders and of the tactical situation, as well as the reception of operational situation reports (terrain, enemy, ...) and logistical [availability, POL (Petrol, Oil and Lubricants) and ammunition expenditure].



A control helicopter

The C2H will also be the airmobile platform required to ensure tactical control of airmobile units committed into the digitalized air-land battlefield area. The warning and monitoring device that could be fitted onto it (a radar mounted on the top of the rotor-mast, taking part in the ground and air TA (Target Acquisition), as well as a tight coupling between the C2H's Terminal Information Systems and the weapon system helicopters will enable to manage fires and to engage contingency targets in reflex time. Thus, the command and control helicopter will be able to allot targets to the weapon system helicopters, in best position to engage them and to forward corresponding orders.

On the other hand and within the framework of the participation of escort and close support Tiger helicopters, to an air-defense³ mission, equipped, with Mistral (missiles) and 30-mm gun, the C2H will become an essential actor within the direct chain of control, by enabling to forward information, required to get weapon system helicopters committed. For this purpose, it will be equipped with communication assets (L 16), enabling it to be part of the real time coordination and control disposition for the air management actors.

³ Within the framework of air-to-air missions, support and protection helicopters could be used either for counter-airmobility or for protecting other weapon system helicopters and UHs, or to the benefit of the ground-to-air defense.

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Thanks to the MIDS (Multifunctional Information Distribution System) with which it will be fitted, it will play a C2 role towards area tactical control centers, such as the NC23 MARTHA, the HORIZON (radar), the French Air Force AWACZ the French Navy E2C (Hawk Eye Radar) or similar assets from our allies. Thus, each C2H will take advantage of a standing updating of the air situation in his combat zone, that he will also feed from information gathered by his own sensors or transmitted by his weapon system helicopters or by other C2Hs.

adapting the aircraft of the current fleet to modern warfare requirements, as well as the detection and communication capabilities granted by MARTHA compel the Army Aviation to procure an on-board command and control system, in order to optimize the airmobile chain of command.

As an interface between the Terminal Information System, the Battalion Control and Information System and MARTHA, the C2H, able to operate in the same operational conditions as weapon system helicopters, will provide the considered level of command with the means to conduct its helicopter commitment, with the expected efficiency due to their sophistication ●

Fielding new generation helicopters, developed to be integrated into the digitalized battlefield area,

Simplified diagram

