NH90 HELICOPTER - 5th PROTOTYPE IN FLIGHT

Aix-en-Provence, 22 December 1999

The maiden flight of the fifth and last prototype of the NH90 (PT5) took place successfully on 22nd December 1999, at Agusta facilities in Italy: the NH90 Programme, which represents a landmark programme for Europe's defence, has made a further important step forward.

The trial started at 15.35, lasting 20 minutes. The max speed of about 100 kts was achieved.

The NH90 PT5 was flown by:

- the experimental test pilot: Carlo TONDI, and
- the flight test engineers: Marco MONTORFANO and Stefano ROGNONI

NHIndustries, prime contractor for the quadrinational NH90 Helicopter Programme (launched by France, Italy, Germany and The Netherlands), is pleased to report that the flight test crew confirmed their complete satisfaction with the PT5 in its flight behaviour.

The PT5 was assembled under Agusta responsibility; Eurocopter and Fokker, the other industrial partners in the programme contributed modules and components.

The PT5 is representative of the Naval Version (NFH) of the NH90. It features in common with the basic configuration the Fly-by-wire controls with Automatic Flight Control, and the dual bus Core Avionic System. Additionally it has a dedicated Naval Mission System: blade and tail automatic folding system, deck lock system, 360 degrees naval tactical radar, sonic system composed by sonar and sonobuoy systems, store management system, and specific to naval operation part of avionic system.

The instrument panel lay-out complies with the common basic configuration and features in addition the fifth 8x8 inch liquid crystal Multifunction Display, specific for the NFH version.

Two TURBOMECA RTM322-01/9 engines power the PT5.

PT5 will be dedicated to the qualification of above said mission and aircraft systems. In particular the fully automatic blade and tail folding system, designed for compatibility with Frigates of the Navies of the four Participating Countries and already successfully operated on the Ground Test Vehicle GTV, will be tested.

This first flight of the fifth and last prototype adds a most important step to a successful development programme:

- PT1 has been subject to installation of the General Electric-Alfa Romeo T700/T6E and /T6E1 engines as the alternative motorization, after its initial flight activity with the Turbomeca RTM322. PT1 has also performed ship trials: within 2 days, 62 deck landings were successfully performed on a basic French La Fayette-class frigate, demonstrating the excellent manoeuvrability of the NH90.
- The PT2 flying activity continues intensively and is dedicated to the development of the Fly-By-Wire control system and the aerodynamic flight qualities with the installation of external supports and relevant loads.
- The PT3 flying activity is dedicated to development of the Core Avionic System, which comprises the Communication, Navigation, Automatic Flight Control, and Plant Management systems.
- The PT4 flying activity is satisfactorily progressing in order to test and qualify the TTH dedicated systems: Forward Looking Infrared, Helmet Mounted Sight and Display, Digital Map Generator, Weather Radar, Electronic Warfare System, Tactical Control and Tactical Communication System. Apart from the standard NH90 full glass cockpit, Fly-by-wire controls with Automatic Flight Control, and the dual bus Core Avionic System. In addition the PT4 has under test the Rear Ramp System, which allows also the transport of a light tactical vehicle inside.

PT1, PT2, PT3, PT4, and PT5 have now logged more than **580** flight hours, contributing to the flight envelope opening up to 20.000 feet altitude, at speeds up to 190 kts, at extreme centres of gravity, at a max gross weight of 10.000 kg, 12 degree slope landings, and rolling landings at speeds exceeding 50 knots.

- Industrial flight test crews, military flight test pilots and flight test engineers of the four nations are impressed by the excellent performance, the handling qualities, and the general behaviour of the helicopter and its systems.
- The Ground Test Vehicle (GTV) has achieved a total of **450** test hours, and has contributed to obtaining the clearance for the flight of all the 5 NH90 prototypes. The GTV current activity is dedicated to test and qualify for flight the automatic blade and tail folding system.

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