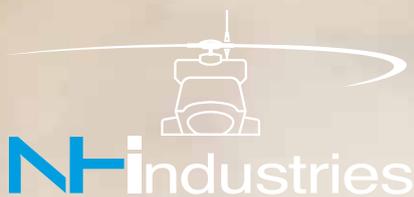


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SAVING LIVES

PROTECTING HEROES

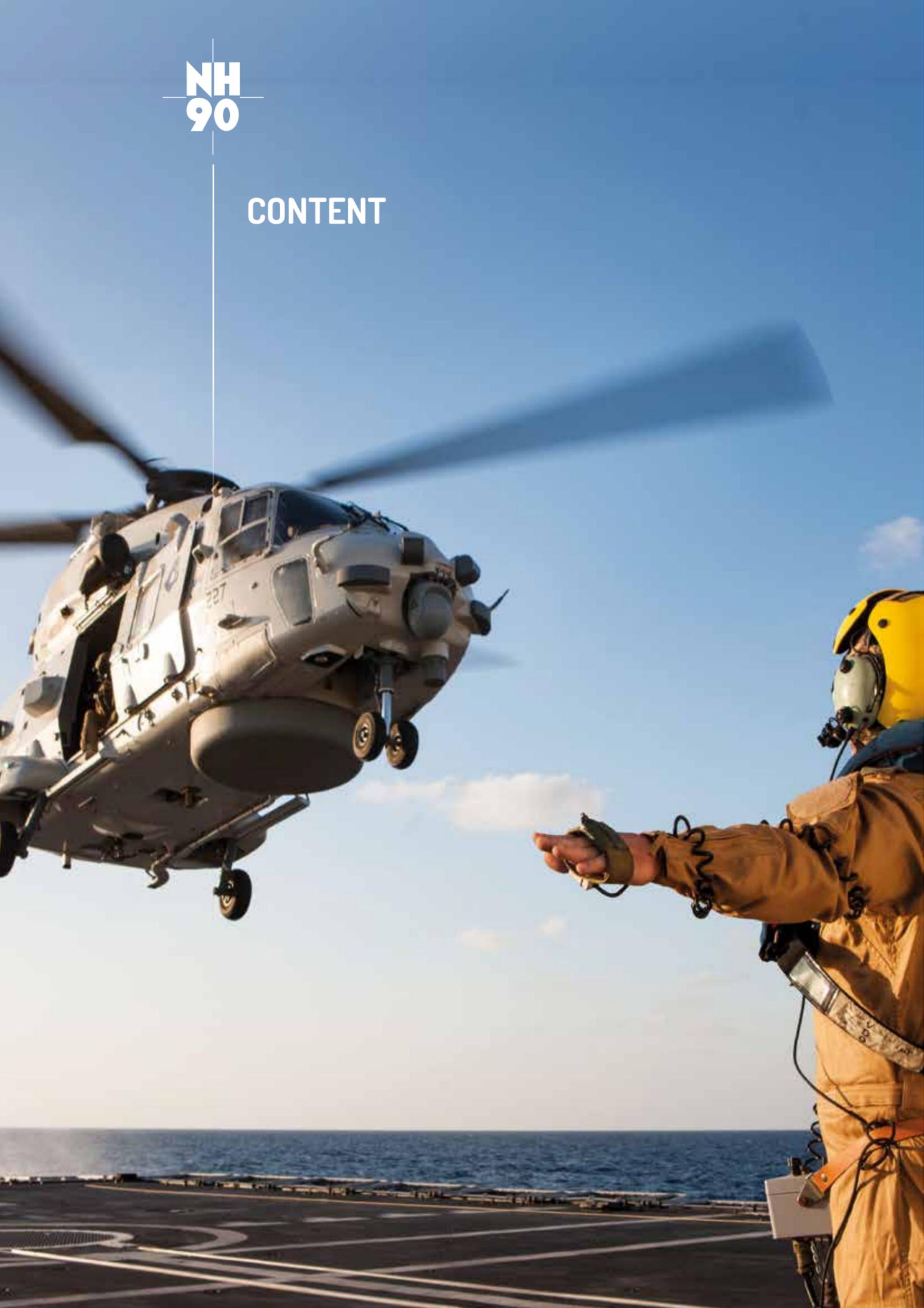


AIRBUS



LEONARDO

www.nhindustries.com



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NH90

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NH
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IN OPERATIONS



CUSTOMERS

- Australia
- Belgium
- Finland
- France
- Germany
- Greece
- Italy
- New Zealand
- Norway
- Oman
- Qatar
- Spain
- Sweden
- The Netherlands

ZONES OF OPERATIONS

- Afghanistan
- Caribbean Sea
- Coast of Somalia
- Fiji Islands
- Iraq
- Mali
- Mozambique
- Niger
- Namibia
- Papua-New-Guinea
- Somalia
- Vanuatu Islands

Caribbean Sea

Finland
Norway
Sweden
The Netherlands
Belgium
Germany
France
Spain
Italy
Greece
Iraq
Qatar
Oman
Mali
Niger
Somalia
Coast of Somalia
Mozambique
Namibia
Afghanistan

Australia

Papua-New-Guinea

Vanuatu Islands

Fiji Islands

New Zealand



NH
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ONE PLATFORM 2 versions - all missions



Specified by Customers for Customers

- NH90 Land version: Tactical Transport Helicopter (TTH);
- NH90 Naval version: NATO Frigate Helicopter (NFH).



Characteristics of the most modern and versatile helicopter in its class

The NH90 is based on new generation technology and equipped with the latest systems. It achieves the highest possible performance in all military missions whether at sea or on land.

The Mission System architecture is equivalent to MIL-STD-1553, a Digital Internal Time Division Command/Response Multiplex Data Bus, to allow low latency heavy data flow among systems.

- The NH90 has a multi-role capability, enhancing its operational effectiveness in all military environments sharing a common platform designed for fleet rationalization and interoperability.

Common characteristics

- Long range of action (can be enhanced with internal/external auxiliary fuel tanks)
- High Manoeuvrability (ADS 33C)
- High survivability

Common missions for both version

- CASualtyEVACuation
- MEDicalEVACuation
- Search And Rescue (SAR)
- Disaster Relief
- Special Ops
- Logistics & Utility
- Vertical replenishment

Common main features for both NFH and TTH versions

- Full glass cockpit
- HMSD (Helmet Mounted Sight Display)
- 2x 2,095 Kw engines for power reserve anytime
- Multi-Role cabin
- 2 wide sliding doors
- APU (Auxiliary Power Unit)
- Pintle machine guns (7.62 mm, 12.7 mm)
- Folding system (blades and tail boom)
- State-of-the-art communication and navigation suite
- Self-protection suite (Ballistic Protections, Chaff & Flares, redundant architecture, self-sealing tanks)

- Rescue hoist
- Flight by wire
- Fully Composite Airframe
- Rear Ramp
- Electromagnetic Compatibility
- Operation between -40 degrees to +50 degrees
- Fully de-iced for flight
- Environmental control system (air conditioning)
- Operational from sea level to 20,000 ft
- Wide space cabin, flexible cabin arrangement from troops to military vehicles
- Operable in degraded environment
- Large panel of proven and qualified options and kits
- Flexible cabin layout
- Redundant Mission Tactical Computers
- NATO interoperable

NFH

MISSIONS

NFH is the best naval helicopter in the world, capable of performing the full range of naval and maritime missions and the flexibility to rapidly adapt to needs.

- ASW
- ASuW
- Anti-Piracy, Maritime
- Special operations (MCT)
- Coast Guard (SAR)
- Boarding Operations / Maritime Troop Transport



NFH

MAIN FEATURE

The NFH (NATO Frigate Helicopter) is the ultimate maritime helicopter, designed to provide unparalleled superiority in any maritime environment. With its advanced Naval Mission System, the NFH is able to integrate its sensors, sub-systems and tactical computers into a single robust avionics architecture, giving it the ability to communicate over long distance with other aircraft, ships and ground based unit providing unmatched situational awareness and coordination capabilities.

- On board sensor fusion (EOS, radars, Digital map, etc.) to detect, classify and engage situational awareness
 - ESM suite
 - EOS Multi-sensor, high definition, 4 axes gyro-stabilised turret system for airborne surveillance and targeting applications. (daylight and IR cameras, Laser Range Finder)
 - 360 degree radar with ISAR mode classifying multi-target simultaneously with long distances
 - DL 11 with a growing potential of L16 and L22
 - SONICS System, combining Dipping Sonar and Sonobuoys management
 - 1 or 2 mission consoles
 - Self-protection suite (Ballistic Protection, Chaff & Flares, self-sealing fuel tanks)
 - IFF Mode 5 level 2 interrogator
 - Digital map generator
 - Automatic folding system (blades and tail)
- Weapon System**
- 2 Marte missiles (MK2/S or MK2 ER)
 - 2 torpedoes (MU90, MK46 and MK54)
 - Mixed configuration (1xTorpedo + 1xMissile)
 - Pintle machine guns (7.62 mm, 12.7 mm) and gunpods (20 mm).



TTH

MISSIONS

TTH is designed to meet the most demanding military standards by exceeding NATO requirements for operations in extreme temperatures.

- Tactical troop transport
- Special operations
- Combat Search And Rescue (CSAR)
- Airborne command post
- Parachuting



TTH

MAIN FEATURES

The NH90 TTH is an outstanding helicopter featuring unrivalled agility and a state-of-the-art mission system for mission success.

The Core System and Mission System greatly improve situational awareness in low visibility conditions, positioning the TTH to deal with tomorrow's harshest environments, improving flight safety in degraded visual environments such as brown out - white out, fog, Night.

- EOS Multi-sensor, high accuracy, 4 axes gyro-stabilised turret system for airborne surveillance and targeting applications. (daylight and IR cameras, Laser Range Finder)
- IFF mode 5 Tactical communication
- 2 large sliding doors and windows
- Cargo hook (4,000 kgs) with dynamometer and camera
- Single or dual rescue hoist with 270 kgs capability
- Heavy stores carriers (port and starboard) 400 kgs or 600 kgs each
- Internal auxiliary fuel tanks
- External auxiliary fuel tanks
- Fast rope/rappelling system
- Emergency flotation system
- Up to 20 crashworthy foldable troops seats
- Advanced Self-protection suite
- Weather radar
- Sand filter
- Manually folding system (blades and tail)



MARITIME TACTICAL TRANSPORT

MAIN FEATURES and missions



A specific NFH configuration for success in both onshore and offshore missions.

Missions:

- Onshore and offshore Tactical troop
- Marine Special Operations
- Surveillance and control
- Delivery/recovery of boarding party
- Disaster relief
- Vertical replenishment
- Logistics and utility
- Onshore and offshore SAR
- Onshore and offshore MEDEVAC / CASEVAC
- Anti-piracy and counter terrorism
- Airborne command post
- Parachuting

The NH90 Maritime Tactical Transport is an outstanding helicopter featuring an unrivalled agility and a state-of-the-art mission system for onshore and offshore mission success.

Features:

- Full glass cockpit
- State-of-the-art communication and navigation suite
- Piloting FLIR for high speed tactical flight
- HMSD (Helmet Mounted Sight Display)
- Up to 20 crashworthy foldable troops seats
- Self-protection suite
- Weather radar
- 5 hours endurance
- Pintle machine guns and gunpods
- Rear ramp
- Automatic folding system (blades and tail)
- Compatibility with Traversing Systems
- Multiroles cabin with a wide choice of equipment
- 2 large sliding doors and windows
- Pintle machine guns

SPECIAL OPERATION FORCES

MAIN FEATURES and missions



Special Operation Forces Main Features and Missions

- An improved TTH configuration to perform more demanding CSAR and Special operations with:
- New generation optical sensors (EOS, DAS cameras Distributed Aperture System) coupled with new generation digital display helmet (HMSD-DD)
- Sensors and terrain databases display fusion featuring improved data integration allowing for an enhanced tactical situation while providing DVE capabilities
- Continuous digital flow of sensors images available for aircrew and commandos to be displayed on digital tablets and goggles (tasks allocation)
- Additional tactical satellite communication
- New fast rope roping, rappelling & extraction devices designed for Spec ops commandos
- Machine gun self-protection from a new rear window freeing up the large sliding doors access
- Extended radius of action with side 500kg external fuel tank.
- additional fire support could be provided by installation of Pintle machine guns (7.62 mm or 12.7 mm) at the large sliding doors
- Additional "kitable" rear ramp capabilities

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DEPLOYABLE Worldwide

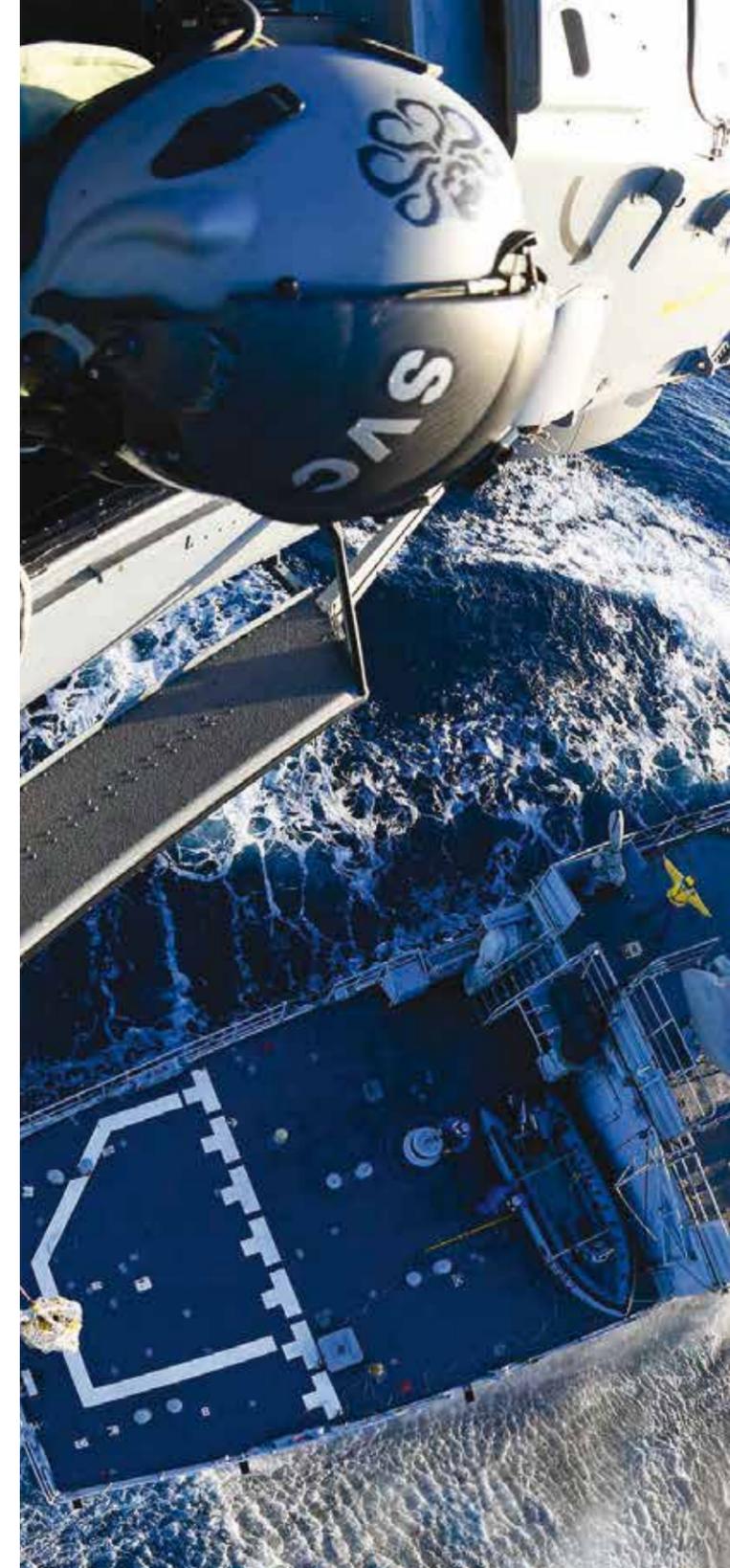


The NH90 can be deployed all over the world.

Due to the fuel efficient engines the NH90 has a range of more than 900 km, which can be extended to 1600 km by making use of the (internal/external) auxiliary fuel tanks.

Depending on the type of deployment (land or sea) and the duration (short or several months), Deployment Kits are available to support your needs during the execution of your mission.

- Aero transportable (AN-124, C-17 and A400M)
- Folding system for transport (blades and tail)
- Amphibious capability
- 5 hours endurance for self-deployment
- External fuel tanks
- APU (Auxiliary Power Unit)
- Sand filters
- Electromagnetic compatibility
- Operational between - 40 degrees to + 50 degrees
- Fully de-iced for flight in known icing conditions
- Environmental control system (air conditioning)
- Operational from sea level to 20,000 ft
- NATO interoperable



NH
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ONE PLATFORM
two mission systems

A WIDE CHOICE
OF MISSION
EQUIPMENTS



NH90 MAIN MISSION EQUIPMENTS

TTH	EQUIPMENTS	NFH
B	Infrared Suppressor	✓
B	Self-Sealing Supply Tanks	N/A ~
N/A	Steerable Nose Wheels	B
N/A	Automatic Blade and Tail Folding	B
B	Manual Blade and Tail Folding	N/A
B	Rear Ramp	✓
✓	Emergency Floatation System	B
N/A	TACAN	B
✓	Satcom	✓
✓	Cargo Hook	✓
✓	Rescue Hoist (single, dual)	✓
✓	Cargo Winch	✓
✓	HMSD	✓
✓	Electro Optical System	✓
✓	Internal Auxiliary Fuel Tank	✓
✓	External Auxiliary Fuel tanks	✓
✓	Hover In Flight Refueling	✓
✓	Mission Recorder	✓
✓	VFDR	✓
✓	Ice Protection System	✓
✓	Weather radar	✓
✓	Piloting FLIR	✓
B	Electronic Warfare System	B
B	Chaff & Flare dispenser	B
N/A	Tactical Radar	✓
N/A	IFF model 5 level 2 interrogator	✓
N/A	Electronic Support Measures	✓
N/A	Chaff & Flare dispenser	✓
N/A	Deck Lock Device	✓
N/A	Traversing System	✓
N/A	Dipping sonar	✓
N/A	Sonobuoys	✓
N/A	Torpedoes	✓
✓	Anti-Ship/Surface Missiles	✓
✓	External Life Raft System	✓

* Replaced by the Tactical Radar

B: Basic

✓: Kit Available

N/A: Not yet Applicable

TECHNOLOGIES



- Dual channel FADEC engines
- Glass cockpit
- 4 axis autopilot
- Self-protection suite with laser warning receiver, radar warning sensor and E/O sensor.
- HUMS (Health and Usage Monitoring System) and MDS (Monitoring and Diagnostics System)
- Automatic blade and tail folding (electrically powered)
- Fully integrated digital mission system

The full composite airframe of the NH90 has several advantages over conventional airframes:

- Better endurance
- Low radar cross section
- Easy to repair
- Better sensor accuracy
- Increased crashworthiness



- Fly-by-wire
- Full composite airframe
- Datalink L11
- Satcom
- Helmet Mounted Sight Display (HMSD)
- Growth potential L16 L22
- HF/V/UHF
- Navigation: INS/GPS



NH
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SURVIVABILITY and safety



- Diamond shape for low radar cross section
- IRS to lower the infrared signature
- Self-protection suite to avoid or counter all threats
- Retractable landing gears
- High energy absorbing landing gears

- 30 min dry run main gearbox
- High redundancy: fly-by-wire segregated channels
- Dual channel FADEC engines
- Emergency Flotation gear
- Damage tolerant design

- Self-sealing fuel tanks
- Armour protection
- Multibox composites blades
- Cable cutter
- Obstacle warning system

- De-icing system
- Sensors to operate in harsh weather and at night
- Energy absorbing seats
- Energy absorbing airframe
- Crashworthy up to 11 m/s



SPECIFICATIONS



NH90 GENERAL PERFORMANCE (BASIC AIRCRAFT)

- ◉ **Maximum cruise speed*** 300 km/h / 162 kts
- ◉ **Economical cruise speed*** 260 km/h / 140 kts
- ◉ **Maximum rate of climb*** 11.2 m/sec / 2,200 ft/min
- ◉ **OEI rate of climb 2 min rating*** 4.3 m/sec / 850 ft/min
- ◉ **OEI rate of climb continuous rating at 2,000 m (6,560 ft)*** 1.5 m/sec / 300 ft/min
- ◉ **Hover ceiling IGE*** 3,200 m / 10,500 ft
- ◉ **Hover ceiling OGE*** 2,600 m / 8,530 ft
- ◉ **Maximum range** 982 km / 530 Nm
- ◉ **Maximum range with 2,500 kg payload** 900 km / 486 NM
- ◉ **Maximum endurance** 5 h
- ◉ **Ferry range (with internal auxiliary fuel tanks)** 1,600 km / 864 NM

*at 10,000 kg

NH90 ENGINES POWER RATINGS

(uninstalled power data-ISA/Sea level - 100% NR)

◉ RTM 322-01/9

- OEI 30 sec 2,172 kW - 2,913 shp
- OEI 2 min 1,855 kW - 2,488 shp
- OEI Continuous 1,781 kW - 2,388 shp
- AEO TOP 30 min (x2) 1,781 kW - 2,388 shp
- AEO Continuous (x2) 1,664 kW - 2,231 shp

◉ GE T700/T6E1*

- OEI 30 sec 2,095 kW - 2,809 shp
- OEI 2 min 1,842 kW - 2,470 shp
- OEI 60 min 1,692 kW - 2,269 shp
- AEO TOP 30 min (x2) 1,692 kW - 2,269 shp
- AEO Continuous (x2) 1,577 kW - 2,115 shp

*GE engines with Integrated Particle Separator (IPS)

For peculiar climatic situations and environments, enhanced versions are available upon request.

◉ External dimensions (rotors turning):

- Length 19.56 m / 64.18 ft
- Width 16.30 m / 53.48 ft
- Height 5.31 m / 17.42 ft

◉ Weights

- Maximum gross weight 10,600 kg / 23,369 lb
- Alternate gross weight 11,000 kg / 24,250 lb
- Empty weight 6,400 kg / 14,109 lb
- Useful load 4,200 kg / 9,260 lb

◉ Cargo capacity

- Cargo hook 4,000 kg / 8,818 lb
- Single or dual rescue hoist 270 kg / 595 lb
- Rescue hoist on ground 400 kg / 880 lb

◉ Fuel capacity

- 7 cell internal system 2,035 kg / 4,486 lb

◉ Internal auxiliary fuel tanks (each)

- 400 kg / 882 lb

◉ External auxiliary fuel tanks (each)

- 292 kg / 644 lb or 500 kg / 1,102 lb

◉ Internal dimensions

- Width 2.00 m / 6.56 ft
- Length 4.80 m / 15.75 ft
- Height 1.58 m / 5.18 ft
- Volume 15.20 m³ / 536.78 ft³

◉ Sliding doors opening

- 1.60 x 1.50 m / 5.25 x 4.92 ft

◉ Rear ramp opening

- 1.78 x 1.58 m / 5.84 x 5.18 ft

SUPPORT SERVICES



“THE EXCELLENCE OF EUROPEAN INDUSTRY FOR THE BEST AVAILABILITY”
 Because our customers’ missions are vital, NHI and its partner companies provide the best support solutions insuring the NH90 is ready, available and operational – anytime, anywhere



1 – COMPREHENSIVE SUPPORT PACKAGES

- Nose to tail solutions – turnkey, covering the entire helicopter
- SBH (Service By the Hour) – securing material availability with full budget control
- Parts and maintenance – your material at your demand
- Training and training media – for pilots, groundcrew and tactical operators
- Technical publications – electronic manuals, always up-to-date
- Technical support services – everything from helpdesk to on-site support

2 – ONE INTERFACE TO ADDRESS ALL YOUR NEEDS

Because each customer is special, NHI ensures that each NH90 end user is in contact with a single partner company responsible for all support needs. This concept of Delegated Partner Company ensures the optimal level of reactivity.

3 – STATE-OF-THE-ART TECHNOLOGY TO SIMPLIFY MAINTENANCE

The NH90 has been designed and is proven to operate in the most demanding conditions. This includes the capability to be maintained without the backup of dedicated facilities when deployed for prolonged periods of time.

NHI leverages new technologies and feedback from its customers to further increase the effectiveness of all logistic and maintenance aspects of the NH90.

MAINTAINABILITY FEATURES

GLIMS

Ground Logistics Management Information System

This ruggedized laptop interfaces with on-board systems, allowing maintenance teams to manage the components of the NH90.

MDS & HUMS

Monitoring and Diagnostics System and Health & Usage Monitoring Services

Monitors the main systems of the NH90 in flight; the data is easily transferred and processed by GLIMS as well as Industry specialists, optimizing the usage and reliability of your assets.

IETP

Integrated Electronic Technical Publications

This electronic documentation provides all the information associated with flying, operating and maintaining the helicopter. The IETP follows modern standards and is kept up to date during the in-service service phase, insuring your teams have always the best information at hand.



TRAINING



AIR CREW

TRAINING

GROUND CREW



CONVENTIONAL COURSES



IN FLIGHT TRAINING

COMPUTER AIDED INSTRUCTION (CAI)

ON A/C TRAINING

FULL FLIGHT MISSION SIMULATOR (FFMS)

TRAINING RIG

PART TASK TRAINER (PTT)

VIRTUAL MAINTENANCE TRAINER (VMT)

The NH90 program is associated with a complete set of training means designed to ensure the best operational level for the flight crews and the ground crews. There are already several training facilities in Europe and Australia.

Because training is the key to mission success, NHI offers specific and tailored training packages

TYPES OF TRAINING

◉ Air crew

- Pilot and co-pilot
- SENSO
- TACCO

◉ Ground crew

- Mechanical
- Electrical
- Avionics

PRIMARY TRAINING LOCATIONS

◉ France

AHTS (Airbus Helicopters Training Services), Marignane

◉ Italy

Leonardo Helicopters, Sesto Calende

Training media (appropriate to both air and ground crew courses)

◉ Traditional classroom

Course introductions are conducted with a lecturer in a classroom environment.

◉ Part task training

The use of representative and real systems allows the student to visualise and simulate any given system (avionic, electrical, hydraulic) or to physically take apart and rebuild a mechanical system.

◉ Computer Aided Instruction (CAI)

is a very powerful and low cost method of increasing training effectiveness.

◉ On the job training

◉ Simulator

Flight simulators are available both with and without full motion.

◉ Maintenance Training Rigs (MTR)

These are representative aircraft designed to be used solely for maintenance training.

Final assembly of NH90 is completed at 4 locations

◉ AIRBUS HELICOPTERS

Marignane - France

◉ AIRBUS HELICOPTERS DEUTSCHLAND

Donauwörth - Germany

◉ LEONARDO HELICOPTERS

Tessera - Italy

◉ AIRBUS HELICOPTERS ESPAÑA

Albacete - Spain

31,25% AIRBUS HELICOPTERS

- Power plant
- Rotors
- Electrical system
- Flight control system
- Core avionic system
- Final Assembly Line

31,25% AIRBUS HELICOPTERS DEUTSCHLAND

- Forward and centre fuselage
- Fuel system
- Communication system
- Avionics control system
- TTH mission system
- Final Assembly Line

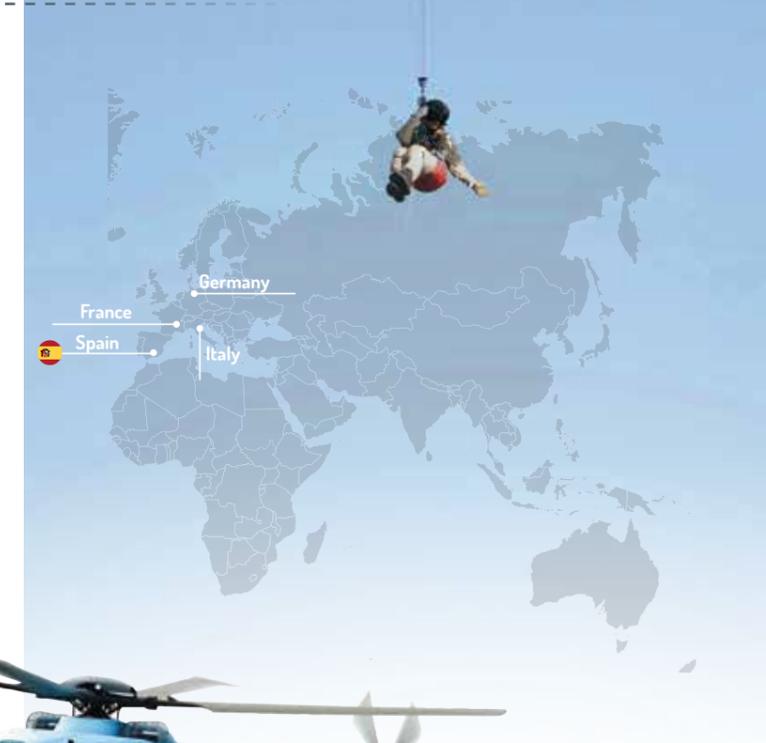
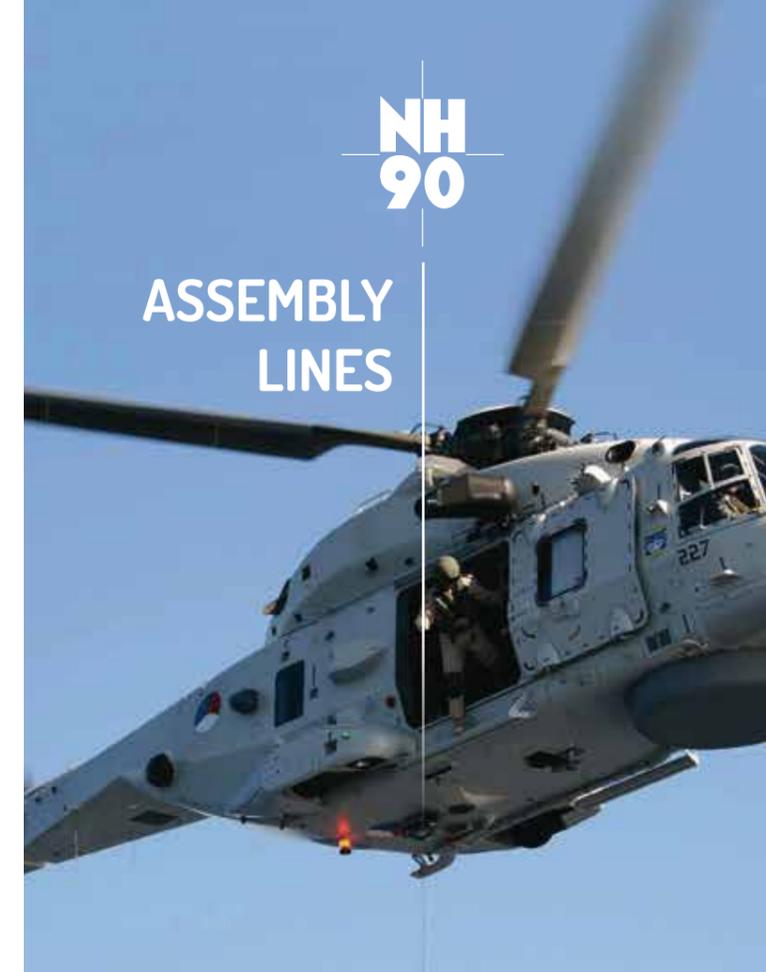
5,5% FOKKER

- Tail structure
- Doors
- Sponsons
- Landing gear
- Intermediate gearbox

32% LEONARDO HELICOPTERS

- Rear fuselage
- Main gearbox
- Hydraulic system
- Automatic Flight Control System (AFCS)
- Plant management system
- NFH mission system
- Power plant
- Final Assembly Line

ASSEMBLY LINES



NH
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THE COMPANY: NHINDUSTRIES



The NH90 Partnership, while taking the best from the European Rotorcraft and Defence Industries, is a collaboration between Airbus Helicopters, Leonardo Helicopters and Fokker Aerostructures.

The company «NHIndustries» is the focal point for the NH90 programme

NHIndustries is a french SAS company, based in Aix-en-Provence. It is wholly owned by Airbus Helicopters, Leonardo Helicopters and Fokker and provides the focal point for these companies for the NH90 programme.

Established in 1992, NHI has managed the design, development and entry into service of the NH90 for both NAHEMA (NATO Helicopter Management Agency, formed by the founding nations -Belgium, France, Germany, Italy, The Netherlands-) and export customers.

NHIndustries is certified to EN 9100, ISO 9001 and AQAP 2110, for prime contractorship and management of international aeronautical programmes.

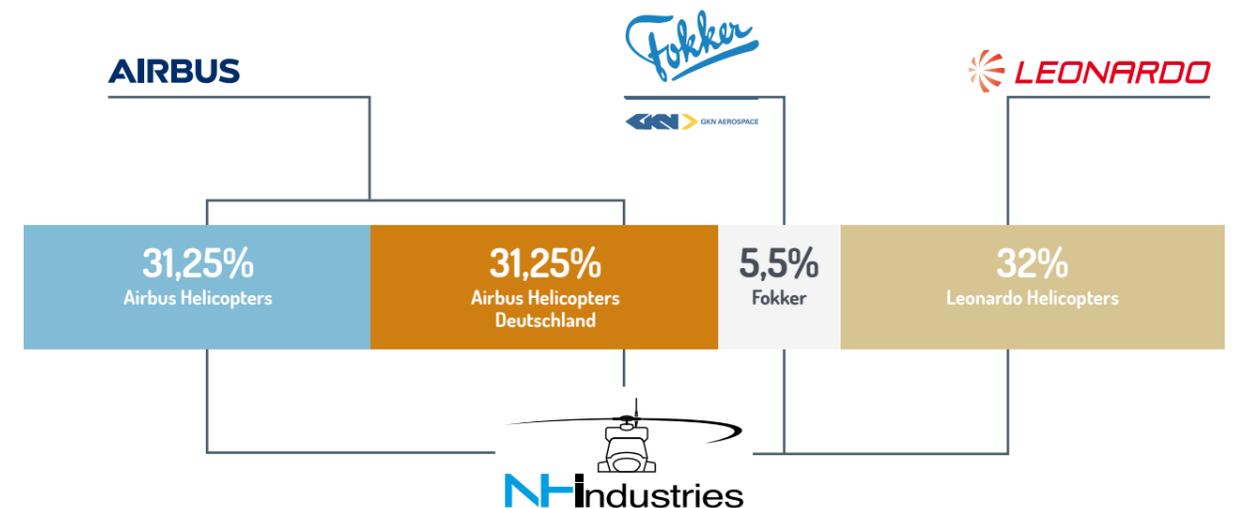
NHI's primary responsibilities are to the customer and to the partner companies for the following activities:

- Airworthiness and the process of safety
- Programme management
- Management of the design, development and configuration process
- Management of the Integrated Logistic Support (ILS) process
- Management of contracts, new business and marketing activities
- Management of quality assurance

The NHIndustries quality management system is designed to give assurance that the NHI processes render the outcomes that customers may expect. It creates more certainty in the business and supports.

NHI is recognized as an approved design and maintenance organisation. NHI aims to provide a consistent service that meets stakeholders' expectations by maintaining independent certifications to the internationally recognised EN9100, ISO 9001 and AQAP 2110 standards.

Additionally, NHIndustries is committed to supporting environmental issues through a policy of objectives and improvement programmes.







AIRBUS



LEONARDO

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