

Super Lynx
300



AgustaWestland
A Finmeccanica Company

The Multi-Role Military Helicopter

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Super Lynx 300 is the latest version of the very successful Lynx helicopter family. It incorporates the latest technology in engines, rotor design and avionics, making it the world's leading multi-role helicopter in its class.

Leading Maritime Helicopter

Super Lynx 300 meets the rigorous demands of military operations in harsh environments throughout the world. Its operational success has made it the benchmark by which helicopters for small ships are judged.

Rugged Military Helicopter

Super Lynx has proven its military worth around the world. Its battle proven design is built to withstand the rough treatment encountered in military operations.

Proven Design in Use Throughout the World

Lynx and Super Lynx are operated very successfully worldwide in a wide range of roles, including maritime surveillance, EEZ patrol and enforcement, anti-surface and anti-submarine warfare and search and rescue.



Modern Technology

New Powerplant for Global Operations

- Two Rolls Royce/LHTEC CTS800-4N engines with five easy to remove modules
- Developed under a US DoD funded development programme
- High reliability and ease of maintenance
- Provides the power required for hot and high operations world-wide
- Full Authority Digital Engine Control (FADEC)



Health and Usage Monitoring System (HUMS)

- Monitors flight critical systems and components
- Reduced cost of operation through on-condition maintenance
- Improved safety
- Data transfer to ground support systems for post flight analysis
- Crash survivable cockpit voice recorder and flight data recorder



Low Workload Integrated Glass Cockpit

- Fully integrated flight and mission display system
- Four Integrated Display Unit (IDU) Active Matrix Liquid Crystal Display (AMLCD) screens with full sunlight readability
- Two Electronic Power Systems Instrument (EPSI) displays
- NVG compatible cockpit meets Mil-Std 3009 Type 1 Class B and C requirements

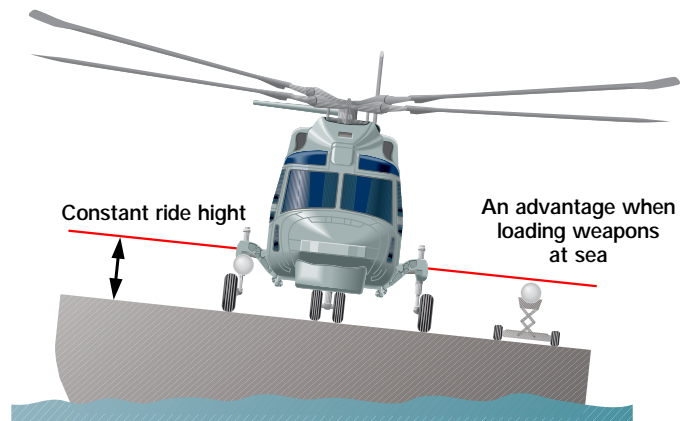
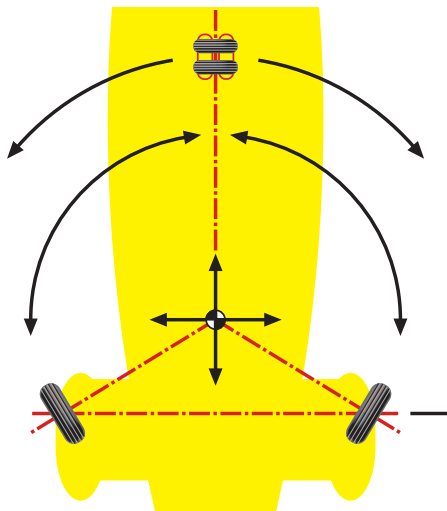
Modern Core Avionics System

- Avionics architecture based on Mil-Std 1553B databus
- Dual redundant Computer Display Navigation Units
- Full reversionary navigation system:
 - GPS
 - Inertial navigation
 - AHRS
 - Doppler
- Comprehensive communications suite



Undercarriage Design

- 12 feet/second rate of descent for deck operations
- Constant ride height ensures safe operating environment under rotor disk in a dynamic maritime environment
- Unique design provides for safe deck operations in high sea states



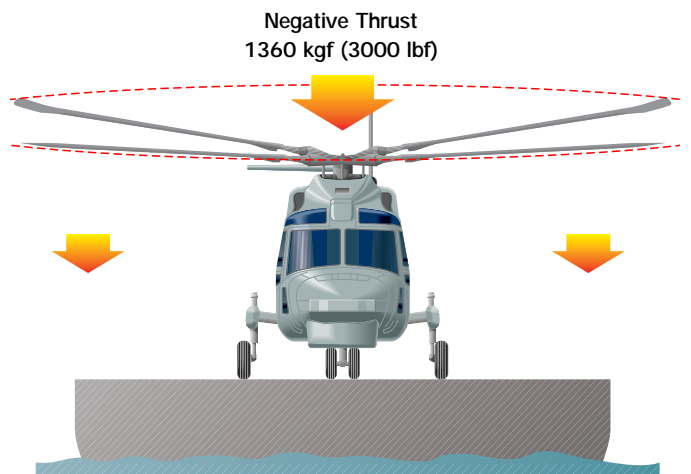
Main Rotor Head Design

- Semi-rigid main rotor head eliminates blade sailing thereby improving groundcrew safety
- 1360 kgf negative pitch for on-deck safety without restraining system
- Simple folding head
- 13° hinge offset for excellent control response
- Low maintenance requirements



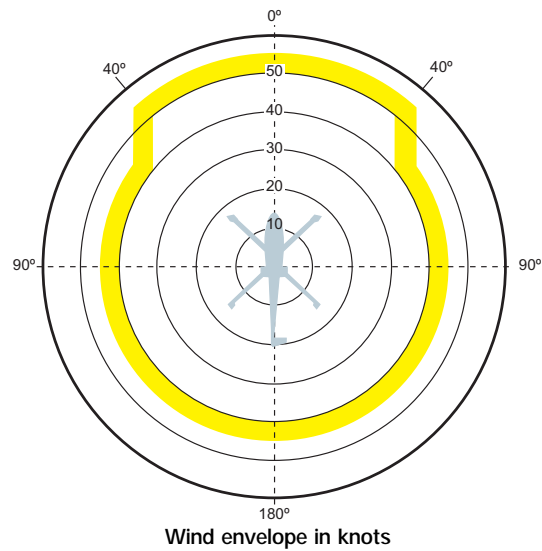
Composite Blades

- Composite main rotor blades with advanced planform tip
- Four blade composite tail rotor providing 40 kt crosswind capability
- Low maintenance requirements
- 10,000 hour life



Designed for Small Ship Compatibility

- Fully marinised
- Requires less flight deck and hangar space than other maritime helicopters
- Simple manual folded head and tail rotor
- Excellent cross and tail wind operating envelope
- Ability to rotate on deck into relative wind
- Extended deployments achieved with limited maintenance resources
- Harpoon decklock system for improved safety on deck

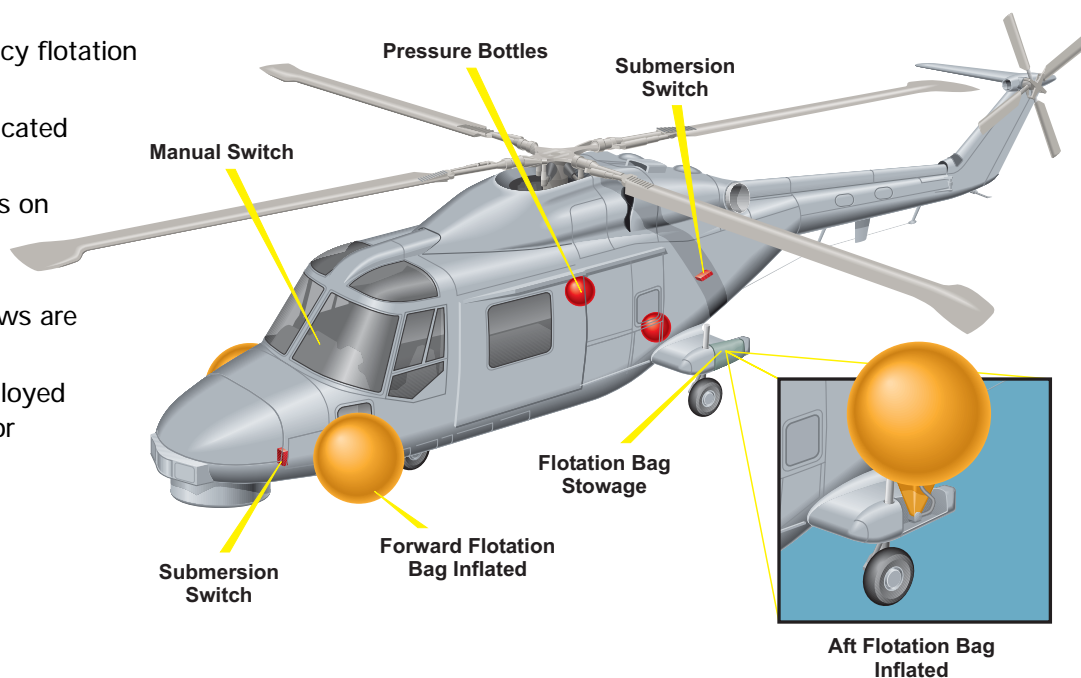


Survivability

- High agility and power margins provide excellent flying characteristics for Nap Of the Earth tactical operations
- Defensive Aids Suite
- Armoured crew seats and cabin floor

Safety Equipment

- Four bag emergency flotation system
- Cockpit crew dedicated emergency exits
- Sliding cabin doors on each side of the fuselage
- Cabin door windows are emergency exits
- Automatically deployed Emergency Locator Transmitter





Maritime

In its class, Super Lynx 300 has the most comprehensive and integrated mission capability for the maritime environment. This provides maritime commanders with the single most flexible asset in their inventory. Super Lynx 300 operates from corvette sized ships in adverse weather conditions and high sea states by day and night:

- Fully marinised airframe for the naval environment
- Simple main rotor blade and tail fold system
- Comprehensive integrated mission system
- Multi-role capability
- Rapid role change ability
- Multiple weapon options

Ship Interface

- Very agile and responsive helicopter enables operations from small ships up to Sea State 6
- Low centre of gravity and wide tracked landing gear give unmatched stability on deck
- 40 kt cross wind operating envelope
- Negative pitch and harpoon deck lock system ensure safety on deck without the use of lashings
- Will withstand extreme conditions at sea



Operational Capability

Anti-Submarine Warfare

- ASW attack capability
- Weapon carriers for two torpedoes or two depth charges
- Quick reaction time from alert on deck to ASW attack
- 150 kt transit speed for quick response to threat



Anti-Surface Warfare

- Comprehensive mission system:
 - Long range 360° surveillance radar
 - Electronic Support Measures (ESM) or Radar Warning Receiver (RWR)
 - Forward Looking Infra-Red (FLIR) sensor for passive identification of contacts
- Weapon management system, including aiming system
- Weapon stations for two to four air to surface missile systems
- Forward firing machine guns and rocket pods
- Cabin mounted machine guns
- Data link for contact reporting



Exclusive Economic Zone (EEZ) Protection

- Comprehensive surveillance system to locate and identify contacts, including 360° radar, FLIR and ESM
- Cabin space for inspection and enforcement teams
- Exceptional agility and wind envelope to safely deploy teams onto small vessels and into restricted landing sites
- Fast roping to deploy teams
- Rescue hoist to recover teams
- Pintle mounted cabin door machine guns provide weapons for law enforcement



Search and Rescue

With a large cabin area, rescue hoist, fully integrated navigation and mission system, Super Lynx 300 is a very capable Search and Rescue helicopter.

Operational Capability

- All weather operations
- Operates in sea states that leave other helicopters in the hangar
- Excellent wind envelope enabling safe hover in restricted conditions
- Exceptional agility for precision flying in SAR scenarios
- FADEC engines enable quick reaction times from alert to take-off
- 150 kt transit speed to incident

Cabin Space

- External fixed or stowable rescue hoist capable of lifting 272 kg (600 lb)
- Space for two stretchers



SAR Mission Systems

- Advanced precision navigation system
- Integrated glass cockpit provides low workload environment enabling safe execution of the mission
- Four axis AFCS with SAR and auto-transition modes

Military Utility

Super Lynx 300 has a large cabin area for an intermediate class helicopter with large cabin doors on both sides. Its fully marinised airframe makes it an ideal utility helicopter for amphibious and littoral warfare operations. Exceptional agility enables the aircraft to operate tactically, flying Nap Of the Earth.



Utility

- Underslung loads up to 1360 kg (3000 lb)
- Rescue hoist to drop off and recover personnel from confined spaces
- Fast roping/rapelling capability (four ropes)
- Easily accessible cabin

Troop Transport

- Capable of carrying up to nine troops in the cabin
- 150 kt transit speed provides good speed of response
- Large cabin doors on each side of the aircraft allow rapid emplane and deplane
- Cabin mounted machine gun to provide suppression fire
- Battle proven in extreme environments
- Wire strike protection system



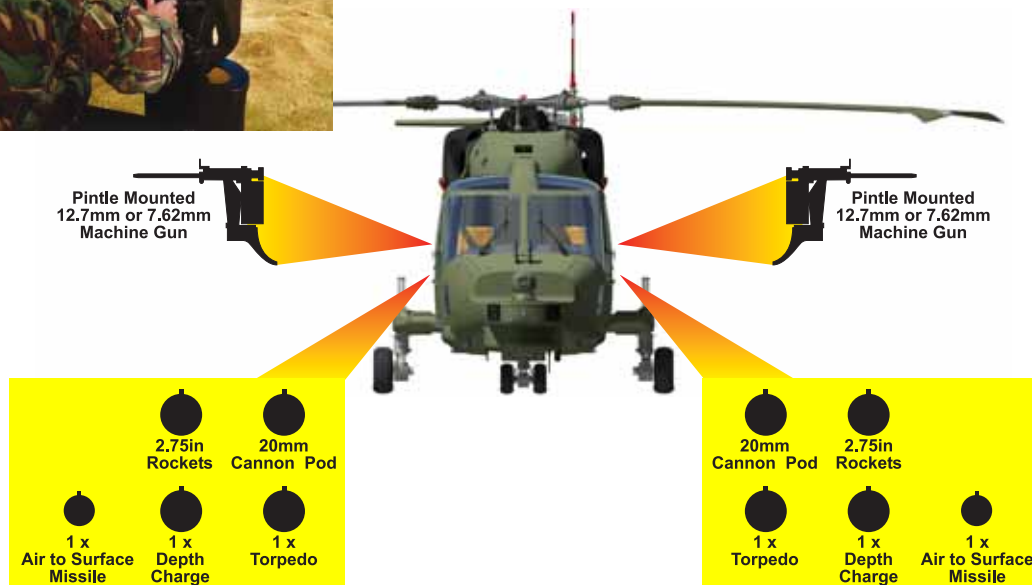
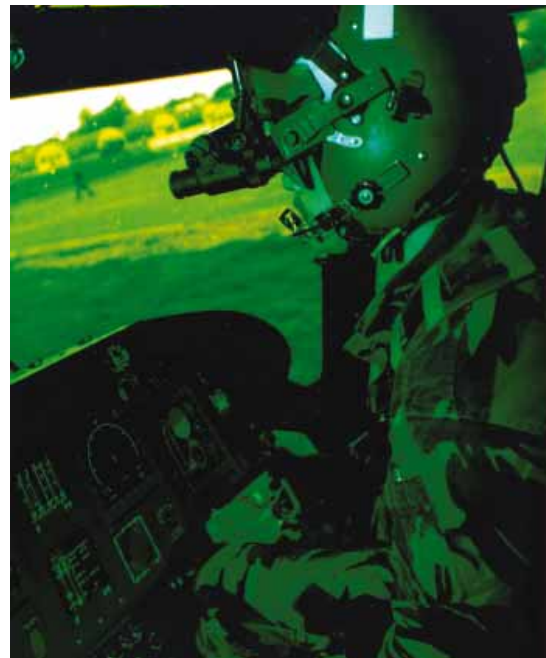


Special Forces Covert Operations

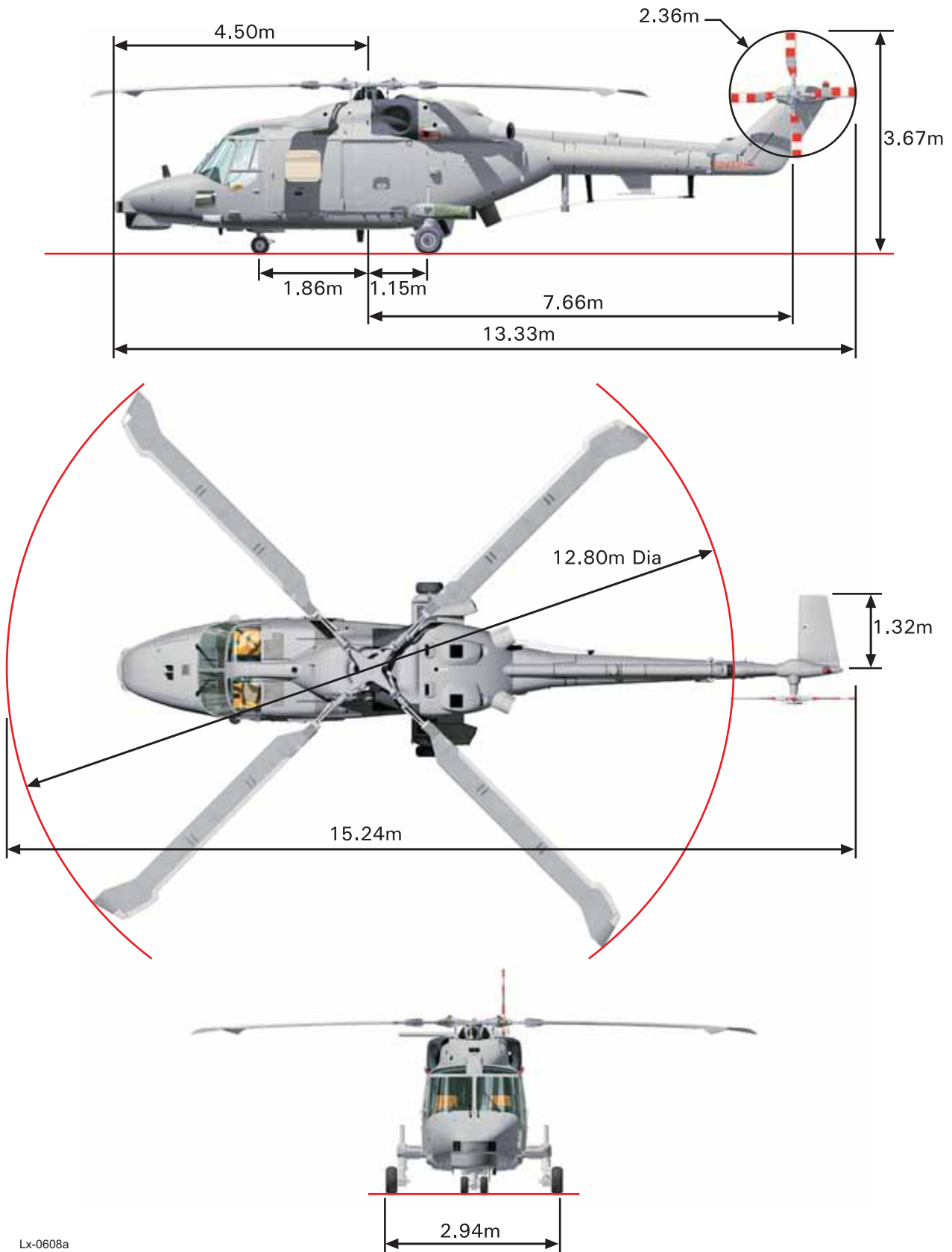
- High agility makes Super Lynx an ideal tactical helicopter
- NVG compatible cockpit for covert operations
- Comprehensive navigation and mission system
- Integrated defensive aids suite, including radar warning, laser warning and missile approach warning systems and decoys

Attack Capability

- Weapon carriers for forward-firing rockets and cannon pods
- Fully integrated weapon management system and head up display
- Pintle mounted machine gun in either cabin door



Super Lynx Dimensions



Super Lynx Folded Dimensions



LX-0609a

Typical ground clearance 370mm

Weights

	kg	lb
Maximum All Up Mass	5330	11750
Typical Payload (maritime surveillance configuration)	1680	3704
Cargo Hook Capacity	1360	3000

Fuel Capacities and Fuel System

	kg	lb
Internal Fuel	787	1735
Ferry Fuel Tank (each)	348	767
Two Man Bench Seat Fuel Tank	275	606

Engine Ratings

LHTEC CTS800-4N	Engines Operating	Maximum Duration	Power	
			SHP	kW
Emergency	1	30 seconds	1620	1208
Max Contingency	1	2 minutes	1506	1123
Take-off	2	10 minutes	1361	1015
Max Continuous	2	Unlimited	1267	945



Airframe

Marinised semi-monocoque, light alloy construction

Composite access doors, hatches, cowlings and fairings

Fold down engine cowlings with built-in work platforms

Access panels for maintenance

Folding main rotor system and optional tail pylon fold

Cabin doors and windows, jettisonable for emergency exit

Crashworthy pilots and co-pilots seats

Windscreen wash and wipe systems

Fixed tricycle undercarriage optimised for ship operations

Large port and starboard sliding cabin doors

Easy access to avionics in nosebay and aft avionics bay

Cockpit doors with emergency jettison facility

Deck lashing and jacking points

Hydraulic System

Two transmission accessory drive operated hydraulic pumps

Hydraulic fluid cooling pack

Emergency accumulator

Rotors and Controls

Four bladed main rotor system

Semi-rigid titanium bolted main rotor head

Three tandem main rotor servo units and tail rotor servo

Manual blade fold facility

Composite main rotor blades

Fully articulated four blade tail rotor

Pilot and Co-pilot flying controls



Power Plant & Fuel System

Two LHTEC CTS800-4N engines with integral inlet particle separators

Full Authority Digital Engine Control (FADEC)

Five fuel tank system with automatic C of G control

Fuel jettison system

Single point pressure re-fuel and de-fuel

Gravity re-fuel

Rollover anti-spill system

Dual engine fire suppression system

Two-man bench seat tank for cabin (option)

Two auxiliary tanks for cabin (option)

Electrical System

Two 25kVA 200V 3 Phase transmission driven generators

Two 28V DC 6.3kW engine driven starter generators

24V DC battery

AC and DC ground power points

NVG compatible cockpit

NVG compatible cabin lighting

Landing light (steerable and NVG compatible)

Anti-collision and navigation lights

NVG compatible external lights (formation only)

Electrical generation system control panel

Air conditioning (option)

Avionics

Four AMLCD Integrated Display Units for flight and mission data

Two secondary flight instruments

Two Electronic Power System Instrument displays

Two dual redundant Control Display Navigation Units

Data transfer module

Mil-Std 1553B databus

Health and Usage Monitoring System (HUMS)

Central warning panel

Comprehensive communications suite

Two Attitude Heading Reference Systems (AHRS)

Embedded GPS/Inertial navigation system

Cockpit and cabin intercommunications system

Transmission

Low profile main gearbox with two engine drive inputs

Accessory drive for generators, hydraulic pumps, tachometer and MGB lubrication pump

Intermediate and tail-rotor gearbox

Chip detection (magnetic plugs)

Hydraulic rotor brake

Mission System and Role Equipment (Options)

360° surveillance radar

Forward Looking Infra-Red system

Electronic Support Measures system

Digital map

Defensive Aids Suite

Forward firing rockets and machine guns

Pintle mounted machine gun

Air-to-Surface Missile system

ASW including torpedoes and depth charges

Rescue hoist (fixed or deployable)

Troop seats and medevac stretchers

Rappelling/fast roping kit

Armoured crew seats and armoured floor

Weapon management system with head up display

IR suppression system

Harpoon decklock

Wire strike protection system

Performance

All performance is given for Super Lynx 300 in a maritime, multi-role configuration at the stated ISA conditions, sea level and zero wind (unless otherwise stated).

All Engines Operating

- Max cruise speed of 132 kt at 5330 kg

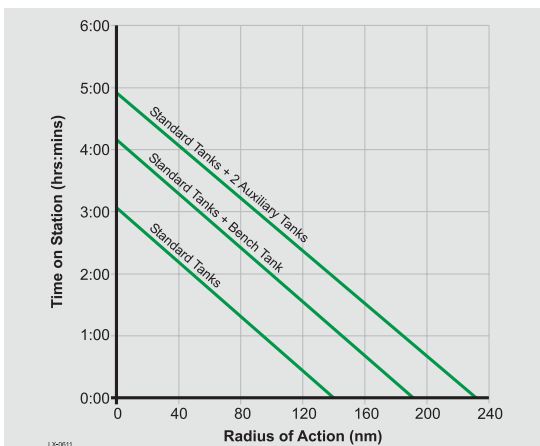
State	Conditions	Weight
Hover out of ground effect	ISA + 35° C	5330 kg

One Engine Inoperative

State	Conditions	Weight
Hover out of ground effect	ISA + 35° C	4146 kg
Hover out of ground effect	ISA	5142 kg
Safe fly-away from AEO hover	ISA + 35° C	4650 kg

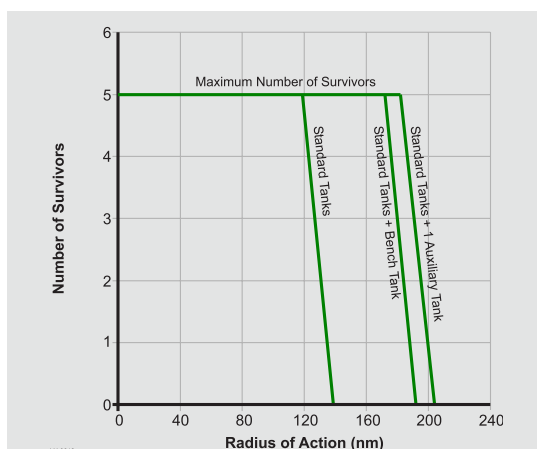
Maritime Patrol

- ISA to ISA + 35° C
- Patrol at 2000 ft, best endurance speed
- 20 minute reserve
- Maritime surveillance configuration



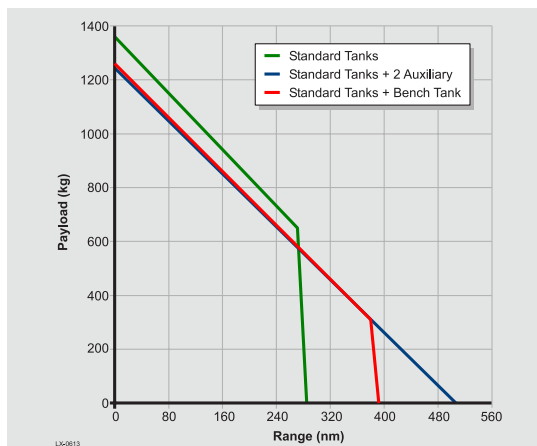
Search & Rescue

- ISA to ISA + 35° C
- Search at 2000 ft, best range speed
- 3 minutes hover per survivor
- 20 minute reserve
- Maritime surveillance + SAR configuration



Utility

- ISA to ISA + 35° C
- Cruise at 2000 ft, best range speed
- 20 minute reserve
- Multi-role utility configuration



Customer Support

Super Lynx 300 operators enjoy a comprehensive support service which has been developed over 25 years for a world-wide Lynx user base. This service is designed specifically for the wide ranging operational and maintenance requirements of our customers and often involves the employment of local industries in the process.



Reliability and Maintainability

Super Lynx 300 has been designed and built to meet modern requirements for ease of maintenance. Modern systems such as the CTS800-4N and core avionics provide excellent value for money in terms of operating and maintenance costs. Super Lynx 300 benefits from an on-condition maintenance policy with scheduled (preventative) maintenance kept to a minimum to reduce operating costs.

The Super Lynx 300 design evolution has incorporated many reliability improvements into the airframe, based on experience gained from customer feedback and logistics analysis from over 1.4 million flying hours.

The CTS800-4N engine was designed and built with reliability and maintainability (R&M) as high priority objectives to meet the exacting demands of the US DoD. The new core and mission avionics systems have been selected for their performance and for their good R&M characteristics.

Post-Design Services

The Technical Office provides the prime interface for Super Lynx 300 users to access all engineering and support resources, and provides:

- Technical advice on all airworthiness, operational and maintenance aspects
- Regular in-country liaison visits
- Service Bulletins, technical publication updates and product design information
- Design advice and quotations for modifications and system upgrades
- Advice on manpower and maintenance planning
- Facility surveys and advice on transition to Super Lynx 300 operations
- Field support services and contractor working parties



Material Support

Super Lynx 300 is supported by a cost effective initial spares package which is tailored to meet the customers' fleet availability and readiness requirements. To sustain operations, the Material Support service provides:

- Spares ordering service through on-line Spares Catalogue System
- AOG service for emergency spares supply
- Approvals for local component sourcing
- Repair and Overhaul (R&O) services for all aircraft components
- In-country logistics office to provide 'hole-in-the-wall' spares and R&O transactions
- Asset planning and management systems linked to maintenance management systems
- Establishment of local repair facilities



Training Services

Super Lynx 300 customers receive full maintainer and aircrew ground and flight training designed for their particular operations and maintenance regimes. This comprehensive introduction to service training is delivered from our modern Customer Training Centre incorporating the latest training systems:

- Experienced and nationally accredited instructors
- Wide range of courses, including deep maintenance and composite repair
- Multimedia Electronic Classrooms
- System emulation and Computer Aided Instruction
- Part Task Trainers

Courses are available at the Customer Training Centre throughout the life of the aircraft, along with a wide range of in-country training service options, including:

- Regular training planning reviews
- Training equipment, ranging from complete electronic classrooms, through cockpit procedures trainers and mechanical part task trainers, to full mission simulators
- Supply of complete integrated training packages
- Training delivery

Customer Benefits

Super Lynx 300 is the world's leading intermediate class maritime helicopter. It provides customers with a multi-role capability to meet a wide range of mission requirements.



Super Lynx 300 offers:

- New technology with future growth potential
- A fully marinised multi-role helicopter for the naval and littoral environments
- Fully integrated avionic and mission systems
- Low maintenance requirements
- Agile and responsive helicopter to meet the demanding, dynamic environment of deck operations
- Exceptional hot and high performance





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