

OLF

RECOMMENDED GUIDELINES

FOR

HELICOPTER FLIGHTS

TO

PETROLEUM INSTALLATIONS



CONTENTS

1 INTRODUCTION	4
1.1. General	4
1.2 Definitions.....	4
1.3 References	5
2 OBJECTIVE.....	5
3 OPERATING REQUIREMENTS	5
3.1 Weather conditions.....	5
3.1.1 General	5
3.1.2 Wind limitations on the helideck.....	5
3.1.3 Temperature limitations- de-icing equipment.....	6
3.1.4 Lightning/thunder/CB activities.....	6
3.2 Helicopter crew	6
3.2.1 Qualifications	6
3.2.2 Experience	6
3.2.3 Simulator training.....	7
3.3. Special missions	7
3.4 Medical evacuation/ambulance flights	7
3.5 Operational restrictions	8
3.6 Safety clauses	8
3.6.1 Maintenance management.....	8
3.6.2 Human factors	9
3.6.3 Technical maintenance training for certified technicians	9
4 TECHNICAL REQUIREMENTS	9
4.1 HUMS	9
4.2 PA – Public Address	10
4.3 Rescue equipment.....	11
4.4 Approval of passenger equipment.....	11
4.5 Seat configuration	11
4.6 Noise.....	11
5 OPERATIONAL REQUIREMENTS.....	12
5.1 Cargo in the helicopter	12
5.1.1. General	12
5.1.2 Cargo and passengers together in the helicopter cabin.....	12
5.2 Baggage free cabins.....	13
5.2.1 Transportation of cargo in a passenger seat.....	13
5.3 Safety briefings	13
5.4 Ventilation.....	14
5.5 Escape routes.....	14
5.6 Survival suits.....	14
5.6.1 Passengers.....	14
5.6.2 Helicopter crew	14
5.7 Size and weight of personal baggage	15
5.8 Use of hard-hat	15
5.9 Non-conformity reporting	15
5.9.1 General	15
5.9.2 Delays.....	15
5.9.3 Incidents	15
5.10 Reporting of oil spill	16

OLF recommended guidelines for helicopter flights to petroleum installations

No.: 066 Valid from: 1.12.2000 Revision no: 1 Rev. date: 07.09.2004Page: 3

5.11 Reports/evaluation.....	16
5.12 Interference with military aircraft	16

6 OPERATIONS WITH OTHER HELICOPTERS16

6.1 General	16
6.2. Armed forces	17

ATTACHMENTS:	1	Helicopter-pilot minimum experience requirements
	2	Standard seat configuration, Super Puma L/L 1
	3	Standard seat configuration, Super Puma L2
	4	Standard seat configuration, Sikorsky S-61N

1 INTRODUCTION

1.1 General

These guidelines have been prepared for use by OLF's member companies and other users (Companies) of Continental Shelf flights. The guidelines are intended for use vis-à-vis the helicopter companies (carriers) operating commercial flights on the Continental Shelf, both on long term, contractual and ad-hoc flights. In addition these guidelines include standards and requirements related to the companies' own activities and to passengers in connection with transportation to and from petroleum installations.

It is assumed that the carriers will incorporate these guidelines as a standard.

The guidelines shall contribute to increased safety and passenger comfort during Continental Shelf flights. This will be achieved by coordinating the companies' requirements vis-à-vis the carrier, including requirements related to technical and operational standards and procedures. This will contribute towards simplifying the tasks the passengers and carriers must carry out during helicopter transportation and emergency situations. The guidelines also include company-specific requirements for the helicopters, and the operations related to them. Coordinated requirements may also contribute to a more efficient operation, and a reduction in flight costs.

The Civil Aviation Authority (LT) is the supervisory and regulatory body for all Norwegian civil aviation. They are responsible for access control, audits and regulatory development - also for Continental Shelf flights. Carrier operations and Continental Shelf flights are governed by LT regulations. These guidelines are not intended to replace the authorities' requirements relating to this activity, but include additional requirements where the industry has found it to be expedient.

At the same time, Continental Shelf flight operations are defined as being part of the petroleum industry, which entails that the companies have a special responsibility for ensuring that this operation is monitored and subjected to quality control, in line with other offshore operations. The guidelines are intended to help companies handle this responsibility and as a means to assist the supervision of the carrier.

In order to meet the objective of these guidelines, harmonization, coordination and an overall follow-up from the companies are called for. Relevant groups within OLF will handle this follow-up.

1.2. Definitions

- I. Continental shelf flights:
Commercial flights to and from helicopter decks on fixed and mobile installations used for exploration/drilling, production and other activities in connection with

exploitation of petroleum deposits which are part of the Norwegian economic zone/Continental Shelf. Ref. also Provisions for Civil Aviation, BSL D 5-1-1.

1.3 References

- I. Civil Aviation Authority (LT): Provisions for Civil Aviation (BSL) D 2-1 (Operations regulations for commercial aviation with airplanes).
- II. LT: BSL D 5-1 (Regulations relating to Continental Shelf flights - commercial aviation to and from helicopter decks on fixed and mobile offshore installations)
- III. LT: BSL D 5-2 (Special operations provisions)
- IV. Joint Aviation Authorities (JAA): Joint Aviation Requirements (JAR) OPS 3 (Commercial air transportation (helicopters)).

2 OBJECTIVE

The overall objective of these guidelines is to enhance safety and comfort on Continental Shelf flights. This will be achieved by:

- I. Coordinating the operating companies' requirements vis-à-vis carriers, including requirements relating to technical concepts, operating requirements, operational requirements and procedures.
- II. Defining specific requirements for helicopters and the operations related to them.

3 OPERATING REQUIREMENTS

3.1 Weather conditions

3.1.1 General

Carriers will cooperate to define identical weather limitations for their operations to/from the installations on the Continental Shelf.

3.1.2 Wind limitations on the helideck

In consideration of the passengers' safety when walking to/from the helicopter on the helideck, restrictions have been set for personnel movement on the helideck in high winds, independent of the authority's and carriers' requirements:

Normal flying to the installations may be performed at wind speeds with gusts up to 60 knots. In addition, individual assessments must be made for each installation.

In emergencies where life and health are at stake, landing on a helideck must be evaluated in relation to the prevailing wind conditions.

3.1.3 Temperature limitations – de-icing equipment

Helicopters operating out of the Brønnøysund base or bases north of this, shall be equipped with de-icing equipment during the period 1 September - 1 May.

3.1.4 Lightning/thunder/CB activity

When planning routes, the carriers shall obtain relevant weather data, including thunderstorm/lightning data and any known CB activity. Carriers shall also have - or have access to - online systems which record and interpret such forecasts.

Carriers shall prepare procedures that provide clear and unambiguous limitations in helicopter flights during CB activities, including use of alternative flight patterns in order to avoid CB, and interruption of flights in certain cases. The flight shall have a minimum separation of 5 nm as the recommended distance to any CB activity.

3.2 Helicopter crew

3.2.1 Qualifications

In addition to governmental regulations and self-imposed requirements, helicopter crews on Continental Shelf flights must meet the following qualification requirements:

- Crew stationed offshore shall have completed the basic safety-training course, ref. OLF's "Guidelines for safety and emergency preparedness training"
- Helicopter underwater escape course.

3.2.2 Experience

Helicopter crews on Continental Shelf flights must have experience as shown in Attachment 1. The companies may issue necessary dispensations from the above-mentioned requirements based on an assessment of the candidate's actual experience level in each individual case.

Additionally, the following requirements apply:

- I. No pilot shall operate more than two different types of helicopters.
- II. If a pilot is to operate more than one helicopter type during a workday, the carrier shall have a procedure which regulates the planning of the transition between the helicopter types.
- III. The minimum crew on Continental Shelf flights is Pilot in-Command and Co-Pilot on all aircrafts and flights.

3.2.3 Simulator training

The pilots shall undergo simulator training at least once a year. The simulator program must be approved by the Company, consist of a minimum of 6 hours per crew, and satisfy the requirements of JAR-OPS 3 / JAR-FCL 2. The simulator must be approved by the civil aviation authorities for such training.

3.3 Special missions

In addition to governmental regulations, carriers must have a handbook system with procedures for handling special missions. The procedure will as a minimum define the requirements for:

- Division of responsibility
- Personnel qualifications and a list of qualified personnel
- Training program for helicopter crew and ground personnel
- Planning
- Safe job analysis (SJA)

When the procedure is used, the company's customer shall be kept informed, as well as receive a copy of the procedure after having approved/signed it.

3.4 Medical evacuation/ambulance flights

The carrier will prepare MEDEVAC procedures that shall be known, assembled and easily accessible during all flights for the companies. The procedures must safeguard the following items:

I. General

Definitions, information about doctors/medical arrangement, any wind and weather limitations, notification plans, responsibility for briefings, responsibility for re-configuration to ambulance flight, etc.

II. Pre-flight

Equipment, briefing, communication, etc.

III. During flights to the installation

Briefing, communication, limitations, etc.

IV. Landing on installation

Briefing of medic and doctor, limitations, stretcher position, responsibility, use of medical equipment, list of approved electrical medical equipment, communication, etc.

V. During flights to shore

Operational adjustment, limitations, use of medical equipment, communication, alternate landing site, coordinating towards ambulance/hospital, etc.

VI. Landing at airport/hospital

Limitations, approach maps to relevant hospitals/helipads, communication, normalisation, etc.

VII. Training

The company's basic ground training program, and annual training program, must include practical installation of stretcher and a review of the logistics and procedures related to a MEDEVAC.

3.5 Operational restrictions

The helicopters must always carry enough fuel to reach land with the required reserves. (In other words, use of "offshore alternate" is not permitted).

3.6 Safety clauses

3.6.1 Maintenance management

In their organisation, the carrier shall have personnel with enough expertise and capacity to process and manage work relating to airworthiness, maintenance program, configuration and modification status, non-conformity procedures and to render technical support to the

production units. In addition they will assist with the necessary professional advice to the company.

3.6.2 Human Factors

All of the carriers' technical and operational personnel must have the basic training regarding Human Factors (minimum two days), and a program for Continuation Training must be established.

The program must contain the following elements as a minimum:

- Behaviour
- Interruptive elements
- Responsibility/Pressure
- Stress/work load
- Cooperation/control

The requirement also includes contractors who work more than 50 % in the carrier's organisation.

3.6.3 Technical maintenance training for certified technicians

The carrier will establish a program for maintenance training to maintain and update the knowledge of technical systems and quality systems/procedures. A minimum of two days training per helicopter type per two-year period must also be given.

4 TECHNICAL REQUIREMENTS

4.1 HUMS

All helicopters flying Continental Shelf flights carrying passengers shall be equipped with a system for monitoring safety-critical parts of the helicopter - Health & Usage Monitoring System (HUMS). The companies consider HUMS monitoring as a safety improvement measure. There is a requirement for the different HUMS parameters to be functional. HUMS defects will be regarded as aircraft defects.

The carrier will have an established system (requirements and procedures) for the operation of HUMS, including personnel in its organization with sufficient specialist expertise and capacity to operate this system, as well as to provide professional support and instruction to other technical personnel.

Aeronautical education, specialist training and experience from work with HUMS is required. Operation/maintenance of HUMS will be described in the carriers' governing documentation, and must as a minimum contain the following:

- Strategic plan for HUMS operation

- Objective/requirements relating to functionality
- Responsibility for system operation and maintenance
- Which helicopter components to be monitored
- In-flight intervals for monitoring of individual HUMS sensors
- Program for daily and periodic maintenance of HUMS
- Pre-flight function testing of the system, which shall include requirements for functionality for each individual monitoring sensor. This will be systematized in line with the Minimum Equipment List (hereinafter referred to as Minimum Equipment Requirement - MER).
- Tolerance limits/requirements relating to functionality for the component readings
- System for and operation of trend analysis tool for analyzing monitored data from the helicopter's critical components, and procedure for management processing of data from such trend monitoring.

The following general requirements have been defined for HUMS' functionality:

- I. As a main rule, HUMS defects must be corrected as soon as they are discovered.
- II. MER may allow a controlled postponement of the corrective action if it is impossible to correct the defect the same day.
- III. Main rules for MER postponement is a limit of 25 flight hours. For areas with a high focus stricter requirements may be specified. Areas with no impact on flight safety may have a limit of 100 flying hours.
- IV. In the event of defects on HUMS equipment, compensatory monitoring measures may be evaluated.
- V. The carrier must keep records of the extent of HUMS defects and the use of MER/MEL dispensations.

4.2 PA - Public Address

The helicopter shall always be equipped with a fixed PA (public address) system with a sufficient number of loudspeakers installed in the cabin. In addition they may have a PA system, or combined IFE/PA system with IR-type headsets, or a similar system with cables. In that case, the cable must be equipped with two break-points, one at the headset and one at the cable outlet from the seat or cabin wall/ceiling.

The PA system must function according to its intention, with announcements from the pilots being audible at all times for all passengers onboard, whether they use the above-mentioned headsets or not.

4.3 Rescue equipment

For flights over open sea the helicopter shall be equipped with the following rescue equipment:

- One externally mounted Emergency Locator Transmitter that shall be ejectable from the cockpit and/or by external means
- Two life rafts , each with an emergency locator transmitter
- Accessible manual release device for life rafts if the helicopter is floating upside-down in the sea
- Automatic release of the flotation gear

4.4 Approval of passenger equipment

The carriers are responsible for verifying that the safety equipment installed on the survival suits and/or accompanies the passengers permanently, is not a potential safety hazard for the flight.

4.5 Seat configuration

Standard seat configuration for relevant, joint helicopter flights to/from offshore used on the Norwegian Continental Shelf is shown in Attachments 2-4. The relevant helicopters are (with the number of seats in parentheses):

- AS 332 Super Puma L/L1 (18)
- AS 332 Super Puma L2 (19)
- Sikorsky S-61N (19)
- Sikorsky S-92 (19)

4.6 Noise

The noise level in new helicopters must not exceed 85 db. Efforts should also be made to achieve this noise level in the remaining helicopter fleet. The noise level will be measured in the cabin at head level under the rotor head.

5 OPERATIONAL REQUIREMENTS

5.1 Cargo in the helicopter

5.1.1 General

Restrictions described in this section are valid for all helicopter types.

Cargo that is to be transported by helicopter must not exceed 15 kg per piece. Heavier items must be divided up. Exemptions can be granted for prioritised cargo. In that case the cargo shall be specially marked (heavy cargo with weight information for each item), and the installation shall be notified.

5.1.2 Cargo and passengers together in the helicopter cabin

As a main rule, cargo shall not be placed in the helicopter cabin on passenger flights. The following exemptions apply:

- Only prioritized cargo
- Cargo must not be placed in front of the cabin door(s)
- Emergency exits must not be blocked in the part of the cabin where passengers are seated
- Cargo must not be placed in such a way that passengers do not have direct access to alternative escape ways (push-out windows). Passengers cannot be placed in a seat where the adjacent push-out window is blocked, or in a seat where cargo obstructs the free access to the nearest push-out window.
- Cargo must not be placed in the aisle. The exemption is pipes with a diameter up to 10 cm.
- Cargo must not obstruct access to emergency equipment
- Cargo must be secured in accordance with the most rigorous regulatory requirements
- Cargo must primarily be placed in front of passengers in the cabin.

5.2 Baggage free cabins

Passengers are not allowed to bring hand baggage into the helicopter cabin. All kinds of bags or briefcases are considered hand baggage, and are therefore not allowed. Exceptions are magazines and newspapers.

5.2.1 Transportation of cargo in passenger seat

The following limitations apply for cargo placed in a passenger seat:

- Maximum one piece per seat with a maximum weight of 80 kgs
- The outer dimensions of the cargo must be less than the width and height of the seat.
- The cargo must be secured by means in addition to the seat belt, with a strap, cargo net or other approved means.

5.3. Safety briefing

Before each helicopter departure from a land base, the carrier will give a standard safety briefing. In addition to relevant requirements laid down in BSL D 2-1, the briefing will as a minimum give information on:

- The survival suit and correct use, including compulsory zip-up (see Section 5.6)
- Helicopter type
- Boarding/disembarkation and hazard zones during boarding/embarkation
- Baggage free cabin (ref. Section 5.2)
- Rescue equipment, location and use

Company-specific information will not be included in this safety briefing.

Information unrelated to helicopter transport shall not be shown in the departure hall at the helicopter terminal.

5.4. Ventilation

The helicopter shall be equipped with a functional heating and ventilation system. In addition, new helicopter models shall be equipped with an air conditioning system.

The helicopter shall also be equipped with adjustable ventilation nozzles for each seat.

5.5. Escape ways

Requirements relating to emergency exits in helicopters must be in accordance with BSL D 5-2/JAR-OPS 3. In addition, the following requirements apply in connection with evacuation:

- Push-out function for all windows in the cabin
- The helicopter's escape routes must be marked with fluorescent labels or lights (HEEL/EXIS or equivalent)
- Handrails will be fitted for the back rows (applies to AS332 L/L1/L2 and S76).
- The "Safety on board" leaflet shall always be updated and show all relevant escape routes, in addition to other information.
- For S-76: single action door release handle
- For Super Puma L/L1: larger window at both sides of the back seat row.

5.6 Survival suits

5.6.1 Passengers

Passengers on all Continental Shelf flights must wear survival suits, which must be in accordance with the industry standard. The suit shall always be zipped up when the helicopter is at altitudes of less than 500 ft. above the sea.

5.6.2 Helicopter crew

The helicopter crew shall have watertight flight-suits during flights. Watertight flight-suits shall be worn during the period 1 September - 1 May.

The flight-suit shall be of a colour that makes it easily visible in the water. In addition the crew shall wear life jackets during flights, or flight-suits with built-in buoyancy.

5.7. Size and weight of personal baggage

The size of bags or other items brought as personal baggage must not exceed 30 x 50 x 60 cm. Weight per item must under no circumstances exceed 10 kg. Heavier luggage will be turned away during check-in.

5.8 Use of hard hat

Passengers are not allowed to wear hard-hats in the helicopter cabin. Hard-hats must be placed in the baggage.

5.9 Non-conformity reporting

5.9.1 General

In this context, non-conformity means conditions/incidents that delay one or more flights for the company, and conditions/incidents during or in connection with a flight which deviate from the normal operation in such a way that the passengers (on board the helicopter or waiting at the helicopter terminal/platform) may be left with unanswered questions, a feeling of insecurity or anxiety because of the incident.

5.9.2 Delays

- I. Planned/expected delays 15 - 60 min.: - Communicated verbally to company representative and confirmed by E-mail indicating cause and action taken. – Verbal communication to the passengers with cause, actions taken and new estimated time of departure.
- II. Delays exceeding 60 min.: - Written E-mails indicating the consequences for the remaining trips that day. Passengers to be updated on a continuous basis.

5.9.3 Incidents

The company has the right to participate as observers in the investigation groups appointed by the carrier relating to incidents in connection with flights for the company. The company has the right to participate in that part of the investigation which aims at finding the cause of the incident, and defining actions to prevent it from being repeated.

I. Immediate reporting:

- 1) The pilot will give a short briefing to the passengers about the incident, with cause and actions taken. At landing facilities/heliport: if the situation calls for it, the passengers will be given detailed information immediately.
- 2) Verbal information is given immediately by the on-duty officer/flight office. Written info to follow as soon as possible within normal office hours, unless otherwise agreed in each case.

- II. Further follow-up after an incident: - The contact person in the company is given a written update on a continuous basis. Delays and incidents are permanent agenda items at operation meetings, and will be followed up as required.

5.10 Reporting of oil spills

Transportation, shuttle and SAR helicopters must report oil spills from installations, related satellites and in areas around liquid-carrying transport systems on the seabed. Reporting must be done via radio to the nearest installation with details of the spread, colour and position of the oil slick.

5.11 Reports/ evaluation

Evaluation reports regarding safety equipment/safety-related conditions (experience and proposals for improvement) must be prepared by the carrier at the companies' request.

5.12 Interference with military aircraft

The carrier must keep informed of planned military drills, and take measures to prevent operational conflict with military aircraft during the drills.

6 OPERATIONS WITH OTHER HELICOPTERS

6.1 General

Other helicopters means helicopters operated by the armed forces and other governmental and civil operators that do not operate under contract with the operating company.

It is the responsibility of the individual carrier to ensure that the crew is familiar with all relevant procedures for Continental Shelf flights and valid procedures for the relevant installation.

Before planning landing on an installation, the carrier will acquire the operating company's approval.

6.2 Armed Forces

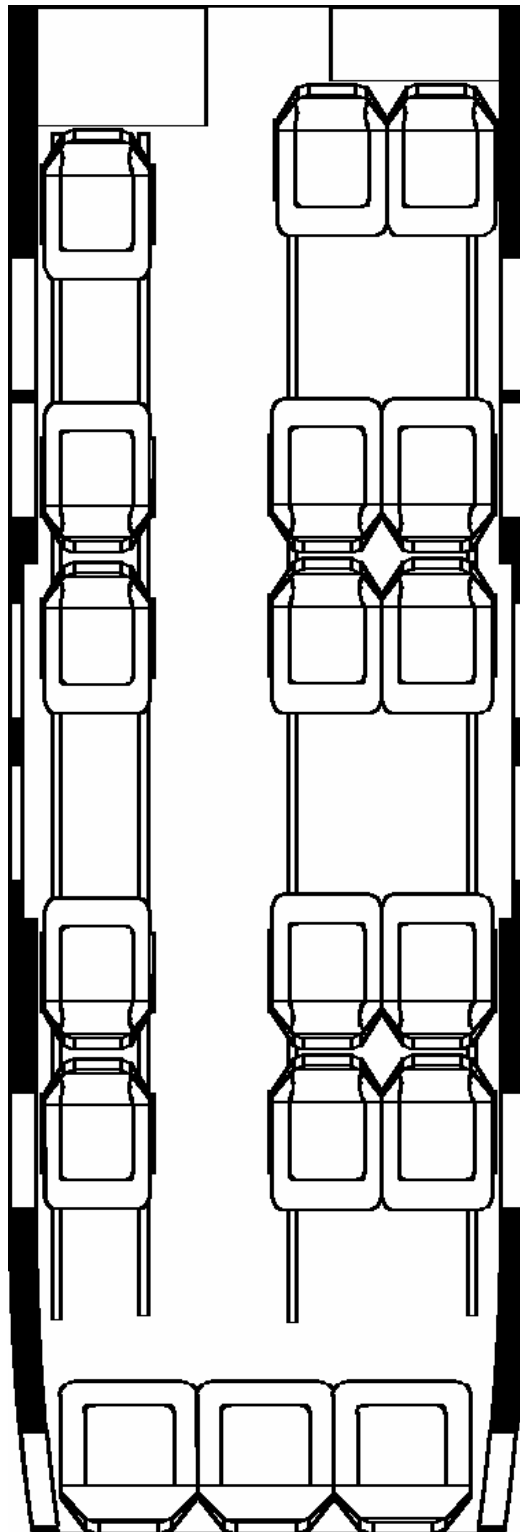
For flights to offshore petroleum installations, OLF's "Operating companies' guidelines for operations involving military helicopters on petroleum installations", dated 1 July 1997 shall apply.

Helicopter pilot minimum experience requirements

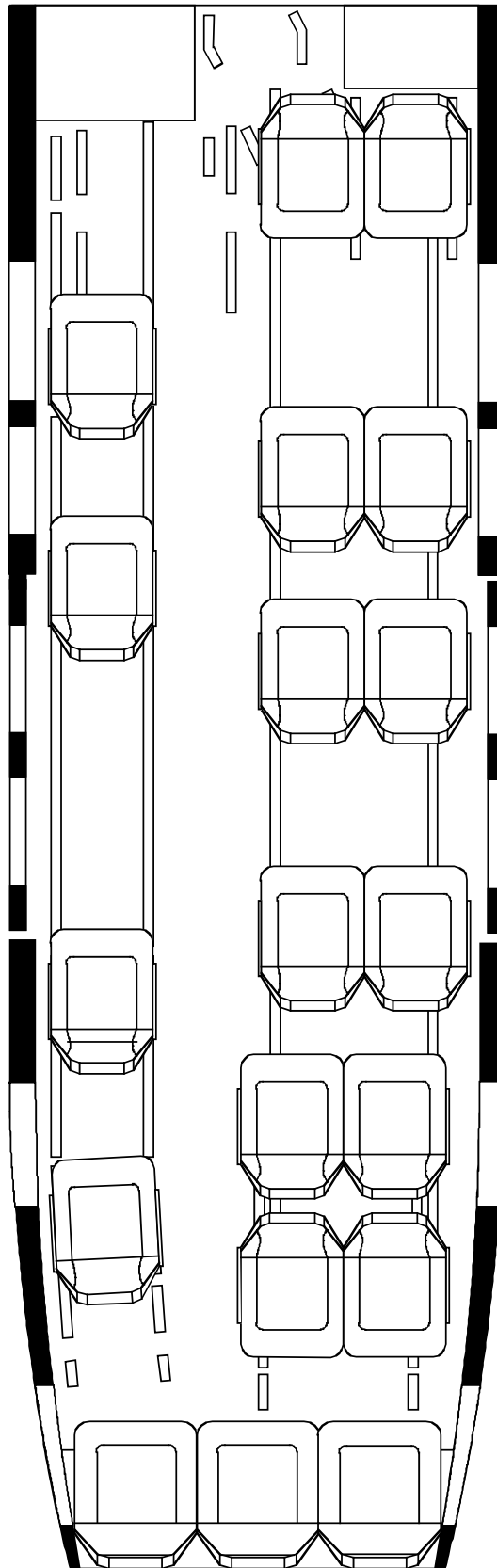
	Multi-engine > 5,700 kgs Max. All-Up Weight (MAUW)	Multi-engine < 5,700 kgs MAUW
COMMANDER QUALIFICATIONS		
Licences & Ratings Licences: Type Ratings: Instrument Rating: (1)	ATPL(H) Current Current	ATPL(H) Current Current
Experience Total hours: (2) Total hours in Command: (2) Total hours in Command - turbine engine: (2) Total hours in Command on contracted type(s): Total hours of operations to fixed and moving platforms:	3000 1500 1200 100 500	2000 1000 500 100 300
CO-PILOT QUALIFICATIONS		
Licences & Ratings Licences: Type Ratings: Instrument Rating: (1)	CPL(H) Current Current	CPL(H) Current Current
Experience Total hours: (2) Total hours in Command: (2) Total hours - turbine engine: (2) Total hours on contracted type(s): (3) Total hours offshore experience before operating under night conditions: Total hours offshore experience before landing on moving helideck as flying pilot: Total hours offshore experience before flying without instructor, training captain or senior commander: (4)	1000 100 500 100 200 200	500 100 400 100 200 200
TOTAL COCKPIT EXPERIENCE Min. Total Cockpit Experience on type:	150	150
PILOT CROSS QUALIFICATION:	Current on max. 2 helicopter types	Current on max. 2 helicopter types

- (1) Instrument ratings are required to be tested at periods not exceeding 13 months (instrument base checks should be at 6 monthly intervals).
- (2) These hours to be fully on helicopters. Up to 10% may be achieved in a flight simulator approved for the purpose by the regulatory authority.
- (3) According to training program approved by contracted oil-operator.
- (4) Required min. experience for instructor/training captain/senior commander:
 > 5700 kgs: 2000 hours as commander on type.
 < 5700 kgs: 1000 hours as commander on type.

STANDARD SEAT CONFIGURATION - SUPER PUMA AS 332L/L1



STANDARD SEAT CONFIGURATION - SUPER PUMA AS 332L2



STANDARD SEAT CONFIGURATION – S61N

