International Association of Oil & Gas Producers

IOGP REPORT 690-2

Aircraft Operations

1. Air Operator Certificate

1A. Purpose

Ensuring operation with all necessary approvals and with an effective system of documented operational procedures

1B. Expectations

The aircraft operator holds a valid Air Operator Certificate (AOC) or equivalent, issued by the responsible regulatory authority, that covers the aircraft type(s), all aspects of the type of operation, the geographic area relevant to the contract, and up-to-date operations specifications.

1C. Processes and Practices

1C.1 The aircraft operator holds an AOC issued and approved by the National Aviation Authority (NAA). This includes aircraft types operated and the scope of the operation detailed in operations specifications.

1C.2 The aircraft operator has a suite of Operations Manuals (OM) with the necessary content, approved (or when applicable, accepted) by the NAA. This is in one or more volumes and includes or is supported by appropriate procedures. The OM covers normal and emergency operations and is suitable for the operational circumstances and the aircraft types operated.

1C.3 The aircraft operator demonstrates to the NAA that its management team, organizational structure, method of control and supervision of flight operations, training programs, ground handling, airworthiness and production arrangements meet the minimum standards defined by local regulations.

Guidance documents

- ICAO Annex 6
- HeliOffshore Safety Performance Model – Common enabler – Standards and oversight

2. Management of personnel

2A. Purpose

Ensuring operation with all necessary approvals and with an effective system of documented operational procedures

2B. Expectations

The Aircraft Operator has competent and experienced personnel in key management positions

2C. Processes and Practices

2C.1 The aircraft operator has the following management and operational positions:

- 2C.1.1 The Accountable Manager for the AOC
- 2C.1.2 A person with overall responsibility for managing the flight department
- 2C.1.3 A person responsible for managing flight training
- 2C.1.4 A person responsible for safety and quality assurance
- 2C.1.5 A person or third party responsible for managing continuing airworthiness requirements
- 2C.1.6 A person or third party responsible for aircraft maintenance
- 2C.1.7 A person responsible for managing ground operations
- 2C.1.8 Where the organization has more than one operating base, the management structure addresses the required responsibilities at all locations
- 2C.1.9 It is acceptable for a person to hold more than one of the above positions, if considered suitable and properly matched to the scale and scope of the operation

2C.2 The aircraft operator has a documented procedure for the assessment of competence and experience for the above management and operational positions.

2C.3 In case of change of key personnel, see 690-1 Safety Management Systems, Section 10, Management of Change.

Guidance documents

- ICAO Annex 6
- HeliOffshore Safety Performance Model

3. Operations in the vicinity of windfarms

3A. Purpose

Ensuring operations towards or in the vicinity of windfarms are done safely

3B. Expectations

The Aircraft Operator has adequate procedures to enable safe operations

3C. Processes and Practices

3C.1 The aircraft operator documents procedures for operations to offshore facilities adjacent or embedded in offshore windfarms. As a minimum, these procedures cover:

- 3C.1.1 Safe distances and heights during approach and departure from obstacles accounting for One Engine Inoperative (OEI) conditions and climb gradients.
- 3C.1.2 Required flight conditions for visibility and cloud base.
- 3C.1.3 The possible effect of wake turbulence of the operating wind farm.

3C.2 The aircraft operator documents procedures for operations overflying offshore windfarms during construction and operation. As a minimum these procedures cover:

- 3C.2.1 Minimum safe altitudes, taking into account required flight path deviations in case of emergencies.
- 3C.2.2 For helicopters certified for (limited) icing conditions, procedures to meet the requirements for shedding ice at lower altitudes.

3C.3 The flight crew has access to detailed information regarding the lay-out, position, height, lights and supporting facilities of the windfarm.

3C.4 The aircraft operator documents procedures to report obstacles which are not mapped or registered in the appropriate database.

Guidance documents

- Energy Institute G+ "Good practice guidelines for safe helicopter operations in support of the global offshore wind industry" Sections A and B
- HeliOffshore RP Practise for Wind Farm Operations (WinRep)

4. Drug and alcohol policy

4A. Purpose

Ensuring safety critical personnel are competent to fulfil their duties by having appropriate training, qualifications, knowledge, skill, and experience

4B. Expectations

The Aircraft Operator has a documented policy on the use/abuse of alcohol, medicines, and narcotics

4C. Processes and practices

4C.1 The policy establishes a pre-hire, post-accident, for cause, and random testing policy and is compliant with national legislation.

4C.2 The policy defines an acceptable level of alcohol consumption for staff in safety-critical roles, including an alcohol-free period before duty.

4C.3 The policy provides guidance on which over-the-counter and prescribed medication can impair an individual's ability to perform in the cockpit or workplace.

4C.4 The policy provides guidance on recognizing the signs of substance abuse and procedures to alert management for appropriate action to prevent staff from operating if necessary, including a method of confidential reporting.

Guidance documents

- BARSOHO Implementation Guidelines v4 1.6
- HeliOffshore Safety Performance Model – Common enabler – Standards and oversight

FLIGHT OPERATIONS

5. Automation

5A. Purpose

Ensuring controlled flight can be sustained with, or without, the use of automation.

5B. Expectations

The Aircraft Operator has defined automation procedures

5C. Processes and Practices

5C.1 The automation procedures contain requirements for the appropriate use of automation to reduce cockpit workload and increase standardization.

5C.2 The automation procedures are defined for all phases of flight. The automation procedures define flight conditions when the use of automation is mandatory.

5C.3 Type-specific procedures for the use of automation are based on those published in the Flight Crew Operating Manual (FCOM), if available.

5C.4 The automation procedures detail methods to maintain flight proficiency in manual control, including those conditions under which automation systems are deselected and manual flight undertaken.

5C.5 The Minimum Equipment List (MEL) has clear requirements for the Automatic Flight Control System (AFCS) to be serviceable for night or Instrument Flight Rules (IFR) flights.

5C.6 The pilot flying guards the flight controls at all times when not carrying out other essential tasks, when the aircraft is in a coupled autopilot mode.

5C.7 For equipment details, see 690-5 – Helicopter and equipment, Section 4.

Guidance documents

- BARSOHO Implementation Guidelines - Effective use of Automation
- HeliOffshore Flightpath Management Recommended Practices (latest version of HO-FPM-RP)
- HeliOffshore Safety Performance Model – Accident events – Aircraft upset

FLIGHT OPERATIONS

6. Helicopter terrain awareness warning systems

6A. Purpose

Preventing Controlled Flight into Terrain (CFIT) accidents.

6B. Expectations

The Aircraft Operator has documented procedures for the use of Helicopter Terrain Awareness Warning Systems (HTAWS).

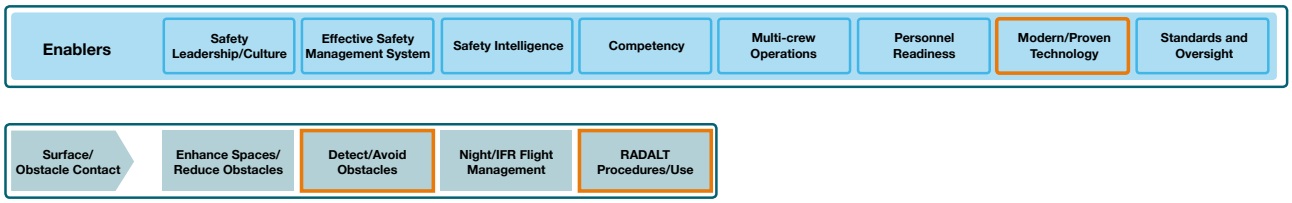
6C. Processes and practices

6C.1 Flight crew Standard Operating Procedures (SOPs) and training includes the response to HTAWS alerts.

6C.2 For equipment details, see 690-5 – Helicopter and equipment, Section 7.

Guidance documents

- BARSOHO Implementation Guidelines - Effective use of Automation
- HeliOffshore Safety Performance Model – Accident events – Surface/Obstacle Contact



FLIGHT OPERATIONS

7. Airborne collision avoidance systems

7A. Purpose

Preventing mid-air collisions

7B. Expectations

The Aircraft Operator has documented procedures for the use of Airborne Collision Avoidance Systems (ACAS).

7C. Processes and practices

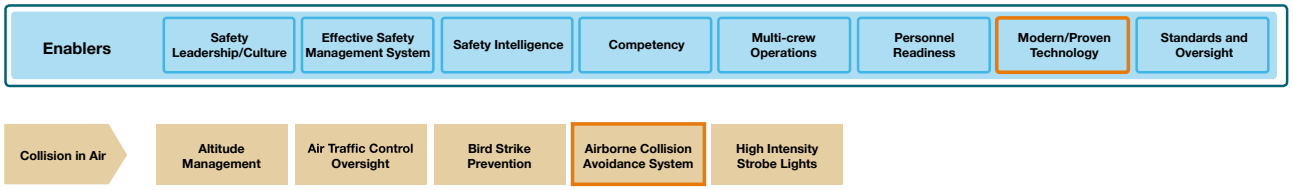
7C.1 Clear instructions and procedural guidance in the use of the ACAS for crews is documented.

7C.2 Flight crew training includes the response to ACAS alerts.

7C.3 For equipment details see 690-5 – Helicopter and equipment, Section 8.

Guidance documents

- BARSOHO Implementation Guidelines - Collision in the Air
- HeliOffshore Safety Performance Model



FLIGHT OPERATIONS

8. Helicopter flight data monitoring

8A. Purpose

Using flight data to obtain operational feedback and reduce risks.

8B. Expectations

A Helicopter Flight Data Monitoring (HFDM) programme is in place.

8C. Processes and practices

8C.1 An HFDM programme is established, documented, and aligned with appropriate industry standards such as UK CAA CAP 739 FDM, FAA AC 120-82 Flight Operational Quality Assurance and/or HeliOffshore HFDM Recommended Practices (latest version of HO-HFDM-RP), which is based upon a 'Just Culture'.

8C.2 Personnel are appointed to fill specific positions within the HFDM programme (such as analyst, gatekeeper or pilot liaison) and training is provided for all personnel appropriate to their responsibilities.

8C.3 HFDM data is downloaded from all aircraft daily as a minimum and a process for the review of the data is in place.

8C.4 HFDM event thresholds are implemented based on flight manual limitations, flight profiles, and SOPs:

- 8C.4.1 Data is analysed for threshold exceedance events daily (operational flight days) through either aircraft operator in-house data analysis or third-party services.
- 8C.4.2 At least three levels of operational risk for each event (low, medium and high) are set and assessed.
- 8C.4.3 Medium and High operational risk events which require flight crew contacts are validated.
- 8C.4.4 Tracked flight crew contacts are made for every Medium and High operational risk HFDM event.
- 8C.4.5 For those events assessed as Medium operational risk, the crew contact, is at a minimum, an advisory contact by email or other means, to alert the flight crew of the event.
- 8C.4.6 For those events assessed as High operational risk, a more comprehensive contact is made, which involves a meeting between the pilot liaison and the flight crew involved.
- 8C.4.7 Trend monitoring of events, including Low operational risk events, as a routine part of the HFDM process, is in place.
- 8C.4.8 With regards to event criteria and analysis, the aircraft operator differentiates:
  - 8C.4.8.1 Phase of flight.
  - 8C.4.8.2 Training vs Maintenance Flights vs Regular Public (Commercial Air) Transport.

FLIGHT OPERATIONS

8C.5 A process for communication and reporting of the HFDM data is established.

8C.6 The following Key Performance Indicators (KPIs) are established and tracked as a minimum:

- 8C.6.1 Data capture rate is minimum 95%
- 8C.6.2 Flight data to be available for analysis within 24 hours (working day)
- 8C.6.3 Initial analysis to be completed within 72 hours (working day)
- 8C.6.4 Identified crew contact to be completed within 7 working days
- 8C.6.5 100% crew contact for all 'medium' and 'high' risk events

8C.7 A HFDM review group meets at least quarterly to:

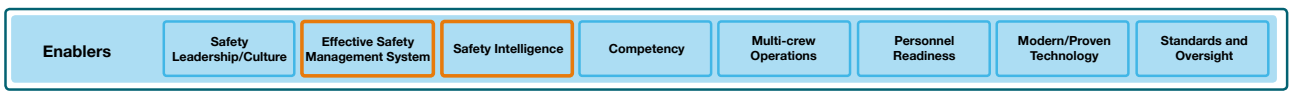
- 8C.7.1 Validate the reports, including a periodical review of de-identified HFDM data findings.
- 8C.7.2 Investigate significant events identified by the HFDM Programme.
- 8C.7.3 Reviews KPIs and trends.
- 8C.7.4 Make recommendations for suggested changes to operational procedures or the training syllabus and tracks their implementation.
- 8C.7.5 Periodically determine the effectiveness of thresholds.
- 8C.7.6 Meetings are minuted and actions are tracked to closure.
- 8C.7.7 An overview of all HFDM actions, together with the KPI's are discussed in the periodic Senior Management Reviews.

8C.8 Allow the Company the right to audit the HFDM programme, within the limitations of the operator's confidentiality agreement, to assure that it is effective. Such an audit does not require access to raw or identifiable data.

8C.9 For equipment details see 690-5 – Helicopter and equipment, Section 9.

Guidance documents

- ICAO Annex 6
- ICAO Doc 10000
- UK CAA CAP 739 FDM
- FAA AC 120-82 Flight Operational Quality Assurance
- HeliOffshore HFDM Recommended Practices
- BARSOHO Implementation Guidelines v4 1.2
- HeliOffshore Safety Performance Model



FLIGHT OPERATIONS

9. Helicopter performance class[2]

9A. Purpose

Ensuring flight operations and continuing airworthiness choices minimize the risk of critical failures and provide assurance of safe outcomes during all engine failure modes.

9B. Expectations

All offshore CAT operations are carried out in the appropriate performance class.

9C. Processes and practices

9C.1 Onshore take-offs, departures, approaches, and landings for the purpose of carrying passengers are conducted in accordance with PC1 criteria, unless specific circumstances dictate the use of PC2 criteria and then only when a safe forced landing can be assured in the event of a critical power unit loss.

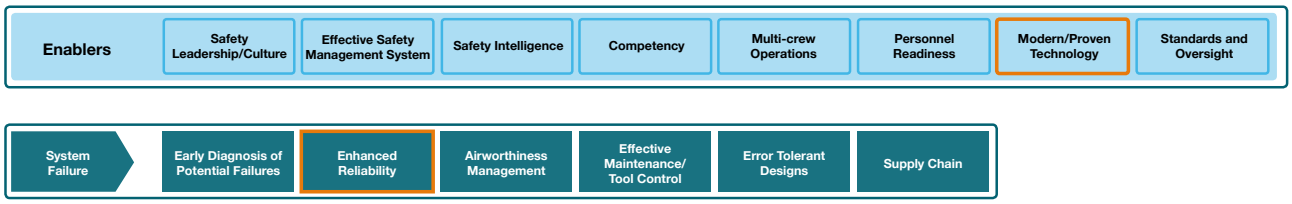
9C.2 The Rotorcraft Flight Manual (RFM) PC1/PC2E/PC2DLE/PC2 flight profiles are used onshore as appropriate.

9C.3 When pre-flight performance planning for offshore take-offs, departures, approaches and landings, there is no exposure to deck edge strike or to a forced landing in the event of a critical power unit loss.

9C.4 The RFM PC2E/PC2DLE[3] flight profiles are used offshore, as appropriate.[4]

Guidance documents

- ICAO Annex 6
- ICAO Helicopter Code of Performance Development Manual (Doc 10110)
- CASA Advisory Circular 133-02 v1.1. Performance Class 2 With Exposure Operations
- HeliOffshore Safety Performance Model – Accident events – System Failure



[2] For definitions of performance classes, see Definitions in RP69x, and for basic certification requirements, see 690-5 Helicopter and Equipment, Section 2, Certification Standards.
[3] For PC2DLE with no exposure to deck edge strike or forced ditching, the exposure period is set at 0 seconds.
[4] It is acceptable to vary from flight profiles, if published in the Operations Manual, provided that the aircraft mass is in accordance with the approved performance data.

FLIGHT CREW

10. Crew - personal protective equipment

10A. Purpose

Ensuring crew are suitably dressed for the environment.

10B. Expectations

Crew have suitable Personal Protective Equipment (PPE) for the environment.

10C. Processes and practices

10C.1 All crew wear lifejackets meeting ETSO-2C504 with Personal Locator Beacons (PLBs) and Compressed Air Emergency Breathing Systems (CA-EBS).

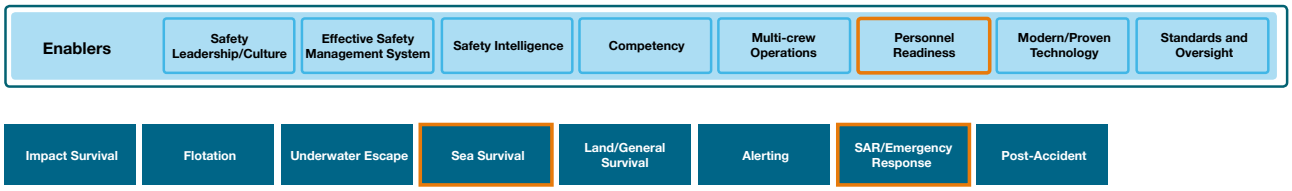
- 10C.1.1 PLBs have 121.5MHz, GPS and 406MHz capability
- 10C.1.2 Advanced Automatic Identification System (AIS) is desirable
- 10C.1.3 PLBs are assessed for compatibility with the aircraft Emergency Locator Transmitter (ELT)

10C.2 Immersion suits are worn when required by regulation or by contract.

- 10C.2.1 Immersion suits meet ETSO-2C502 or ETSO-2C503 or NAA approved Technical Standard Order (TSO) and which have been tested for compatibility with the lifejacket.

Guidance documents

- BARSOHO Implementation Guidelines v4 20.4 – Sea Survival
- ETSO-2C519, CA-EBS
- ETSO-2C520.PLB
- HeliOffshore Safety Performance Model – Accident survival goals – Sea Survival



FLIGHT CREW

11. Flight crew - experience and qualification

11A. Purpose

Ensuring flight crew are competent to fulfil their duties by having appropriate training, qualifications, knowledge, skill, and experience.

11B. Expectations

The operator demonstrates flight crew meet the required experience and qualification levels by entering at the appropriate stage in the process.

11C. Processes and practices

11C.1 The operator demonstrates recruitment is based on detailed psychometric and pilot aptitude testing, to include evaluation of language skills, cognitive abilities, hand-eye coordination, ability to apply theory, and team coordination, etc.

11C.2 The operator demonstrates compliance through its training and competence assurance processes and is able to demonstrate to the Company, on audit and on request, that:

- 11C.2.1 There is a formal competency-based progression scheme for pilots from basic (ab initio/new hire/conversion) to command and for aircraft type conversion based on the specifications in this section and the pilot aircraft conversion syllabus in 690-2, Section 45 - Introduction of new aircraft type.
- 11C.2.2 The content of the training syllabus, including comprehensive ground and flight training, is based on regulatory training schemes.
- 11C.2.3 If required, the operator has a documented night flying syllabus to train flight crew and trainers Line Training Captain (LTC), Type Rating Instructors (TRI) and Type Rating Examiner (TRE) to offshore night competence.
- 11C.2.4 There is a structured command course, including competencies to be achieved, and the associated checking process.
- 11C.2.5 There is a process for the selection, training, and designation of LTCs.
- 11C.2.6 All flight crew training staff have defined role competencies.
- 11C.2.7 Training records are maintained and available that demonstrate the competence checking processes and levels of competence achieved.
- 11C.2.8 There is documented evidence to support at which stage the pilot has entered Table 11-1.

FLIGHT CREW

Table 11-1: Progression-based programme

Stage	Entry level in license, flight hours or other experience	Subject	Content
1	Ab-Initio Entry	CPL(H) training at approved flight training organization (FTO) *(See Note 1)*	Air Transport Pilot Licence (Helicopter) (ATPL(H)) theory required for operations on multi-pilot helicopters
2	CPL(H) Entry More than 150 hours	IR(H) training at approved FTO	IR(H) Course completed successfully
3	CPL(H) with IR(H) More than 185 hours	Operator initial training programme	Multi Pilot Type Rating Course Multi-crew Co-operation Course (See Note 2) Type IR Course Licence Skill test including IR(H)
4	CPL(H) with IR(H) and Type rated on contracted type More than 212 hours	Operator conversion course	Operator Conversion Course on flight simulator, and, if required, on aircraft Operator Proficiency Check (OPC) Course on flight simulator, and, if required, on aircraft
5		Line Training Ground Course	Performance Class requirements Flight planning Simulator line flight, Line Oriented Flight Training (LOFT) (Not required if covered under stage 4 item OPC)
6		Non-passenger carrying, actual offshore deck landing training by day with TRI/TRE on aircraft type	Minimum 5 daytime approaches, landings and subsequent take-offs to and from an offshore facility Competence check by TRI/TRE for release to Line Training *(See Note 6)*
6-night		If night offshore is required, non-passenger carrying actual, offshore deck landing training by night with TRI/TRE on aircraft type	Ground course night flying offshore Minimum 5 night time approaches, landings and subsequent take-offs to and from an offshore facility (if possible different facilities should be visited) Competence check by TRI/TRE for release to night Line Training *(See Note 6)*
7		Line flying under supervision of a LTC or TRI	Minimum 10 hours and 10 offshore landings by day Progress report required for all flights *(See Note 6)*
7-night		If night offshore is required, line flying under supervision of a LTC or TRI	Minimum 10 hours and 10 offshore landings by night Progress report required for all flights *(See Note 6)*
8		Line check as co-pilot by different LTC	Includes at least two offshore landings and take-offs Line-check to be completed in the Pilot Monitoring (PM) and in the Pilot Flying (PF) role. If required, also in both seats *(See Note 6)*

FLIGHT CREW

Stage	Entry level in license, flight hours or other experience	Subject	Content
9		Progressive monitoring online as First Officer (FO) until 500 hours on type	Two qualifying flight reports per month with a training captain or LTC; Recurrent training and OPC/LPC checks 6-monthly progress reviews of pilots in this phase by chief pilot with all involved training staff Written records of above elements Rostered with experienced Pilot in Command (PIC) only, can be released to any PIC when has 500 hours on type
10	Experienced co-pilot hire enters here, has more than 500 hours Multi-Engine (ME) multi-crew helicopter		Needs to complete the following: • If not rated on type, stage 3 to 8 • If rated on type, stages 4, 5, 7 and 8
11			6-monthly progress reviews of all co-pilots by chief pilot with all involved training staff
12	Entered the program at stage 1, 2, 3, 4 or 10; And • Min 4-year offshore experience (note 5): AND • 1500 hrs ME multi-crew (note 4); AND • 1000 hrs ME Pilot-in-Command Under Supervision (PICUS) (note 4); AND • 100 hrs of night flight as pilot-in command or as co-pilot (note 7)	Operator Command Course	Minimum requirements – ATPL(H) Technical exam FFS Training and Assessment CRM assessment Command Line Training Command proficiency check in simulator as PM and PF Command Line Check by different LTC
12-night	A minimum of 25 hours of night offshore time (see note 3)	If night offshore is required	Command course includes night flying theory FFS training and assessments under simulated night conditions Night command line training Command proficiency check in simulator as PM and PF under night conditions Minimum 25 flight hours offshore night Command Line Check at night by different LTC. *(See Note 6)*
13	Experienced captain hire enters here meets: • All requirements stage 12 • In excess of 500 hours offshore command (see note 3)		Needs to complete from above: • If not rated on type, stage 3 to 7 and 12 • If rated on type, stage 4, 5 and 12

FLIGHT CREW

Stage	Entry level in license, flight hours or other experience	Subject	Content

Table notes:

1. The state-approved flight training school(s) and curriculum are to EASA, FAA, or equivalent standards.
2. For details on the multi-crew co-operation courses refer to EASA approved flight training establishments.
3. Offshore flight time/hours/experience means flight hours acting as PIC or SIC (including PICUS) as follows:
   a. Providing passenger transportation services over open water
   b. Helicopter hoist operations for sea pilot transfer services and wind farms offshore
   c. Offshore SAR
4. The 1500 hours ME multi-crew and the 1000 hours PICUS is reduced by 500 hours each, provided the candidate can provide evidence of 1000 hours offshore PIC.
5. For specific individuals with different prior experience, the 4 years offshore experience can be lowered to a minimum of two years offshore experience of which one full year in the specific region (all seasons) if the operator contacts the Company Aviation Advisor to agree the equivalent entry requirements based on previous experience (e.g., military, naval experience, ME multi-crew experience, or other acceptable relevant experience).
6. Records are maintained that reflect the results of each training session and include the standards to which the pilot was able to complete the exercise or flight requirement.
7. Deviation of the 100 hours night flying is approved if the NAA requirement for issue of an ATPL(H) license is less, but a minimum of 50 hours is required.

Guidance documents

- ICAO Annex 1 Personnel licensing
- BARSOHO Implementation Guidelines
- HeliOffshore Safety Performance Model – Common enabler – Competency

FLIGHT CREW

12. Flight crew experience - pilot in command under supervision flight time

12A. Purpose

Ensuring safety critical personnel are competent to fulfil their duties by having appropriate training, qualifications, knowledge, skill and experience.

12B. Expectations

That co-pilots are permitted to log PICUS time to meet the requirements of command time in Table 11.1

12C. Processes and practices

12C.1 In those countries where the NAA has an allowance for logging these hours, the aircraft operator uses the approved national programme.

12C.2 The logged time as PICUS meets the requirements of section 11, provided:

12C.2.1 The pilot has logged at least 500 hours ME multi-crew offshore.

12C.2.2 The aircraft operator has control and supervision over the programme.

12C.2.3 The flight time is recorded in the pilot's training records.

Guidance documents

- HeliOffshore Safety Performance Model

FLIGHT CREW

13. Medical certification

13A. Purpose

Ensuring safety critical personnel are competent to fulfil their duties by having appropriate training, qualifications, knowledge, skill and experience.

13B. Expectations

All pilots hold a valid medical certificate appropriate to their age and licence (e.g., CPL, ATPL) requirements.

13C. Processes and practices

13C.1 The local NAA and/or company policy determines the frequency of medical examinations.

Guidance documents

- ICAO Annex 1 Chapter 6
- HeliOffshore Safety Performance Model

FLIGHT CREW

14. Use of subcontracted pilots

14A. Purpose

Ensuring safety critical personnel are competent to fulfil their duties by having appropriate training, qualifications, knowledge, skill and experience.

14B. Expectations

The Aircraft Operator uses subcontracted pilots subject to certain conditions.

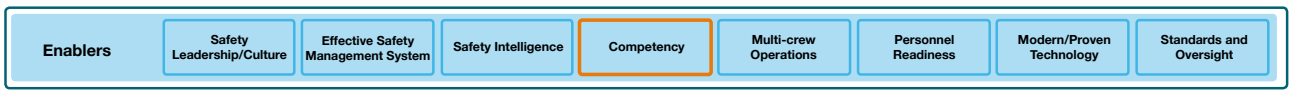
14C. Processes and practices

14C.1 Subcontracted pilot complies with all training, checking and recency requirements of the aircraft operator.

14C.2 Subcontracted pilots inform the aircraft operator of all their flight and duty times.

Guidance documents

- BARSOHO Implementation Guidelines.
- HeliOffshore Safety Performance Model.



FLIGHT CREW

15. Pilots flying more than one aircraft type

15A. Purpose

Ensuring safety critical personnel are competent to fulfil their duties by having appropriate training, qualifications, knowledge, skill and experience.

15B. Expectations

Pilots flying more than one type are subject to certain conditions.

15C. Processes and practices

15C.1 The aircraft operator has a written policy on the number of aircraft types pilots may fly in one day, which applies across their operations, and which complies with national legislation.

15C.2 The policy includes the requirement for the pilot to maintain recency and proficiency on those types on which the pilot is permitted to fly Commercial Air Transport (CAT).

15C.3 Recency and proficiency on multiple types is closely monitored.

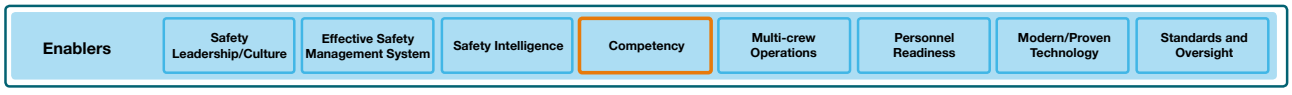
15C.4 The aircraft operator does not schedule pilots for operation on more than one type during the same duty period.

15C.5 Pilots operate a second type only as a result of on-the-day operational changes, such as unserviceability, and when the following have been complied with:

- 15C.5.1 The recency and competence qualification requirements on either type are met.
- 15C.5.2 The time between the types or variant is a minimum of 1-hour block time.
- 15C.5.3 Before operating a second type, the crew briefs the pertinent differences of fuel planning, performance, and weather minima.
- 15C.5.4 Any additional actions required by the "flying more than one aircraft type" risk assessments are met.

Guidance documents

- HeliOffshore Safety Performance Model



FLIGHT CREW

16. Composition of flight crew

16A. Purpose

Ensuring flight crew handling and monitoring duties are appropriately divided, defined, and conducted in line with human factors principles.

16B. Expectations

Aircraft are appropriately crewed for the task and environment.

16C. Processes and practices

16C.1 Two pilots operate the aircraft.

16C.2 The aircraft operator has procedures outlining the duties and responsibilities of all flight crew members, and the 'pilot flying' and 'pilot monitoring' roles and tasks are defined.

Guidance documents

- ICAO Annex 6
- HeliOffshore Safety Performance Model

17. Flight crew fatigue management - flight time limits

17A. Purpose

Ensuring flight crew personnel are alert and fit-for-work.

17B. Expectations

The Aircraft Operator has established limits for flight times.

17C. Processes and practices

17C.1 Additional restrictions are in place for particularly demanding flights, such as multiple short offshore shuttle flights between platforms, or for operations in local extreme ambient temperatures.

17C.2 Maximum flight times meet the criteria in the table 17-1:

Table 17-1: Maximum flight times

Period (consecutive days)	1	7	28	365
Maximum flight time in period for dual-pilot crew (hours)	10	45	120	1200

Guidance documents

- ICAO Annex 6
- ICAO Doc 9966
- HeliOffshore Safety Performance Model

FLIGHT CREW FATIGUE MANAGEMENT

18. Flight crew fatigue management - flight duty times and rest periods

18A. Purpose

Ensuring flight crew personnel are alert and fit-for-work.

18B. Expectations

The Aircraft Operator has established limits for flight crew duty times.

18C. Processes and practices

18C.1 The maximum Flight Duty Period (FDP) is 14 hours.

18C.2 This includes administrative/office time, flight planning, flight preparation, flight time, post-flight duties, completion of any associated maintenance or paperwork.

18C.3 The operations manual defines when the duty day starts and ends and how the FDP is calculated.

18C.4 The minimum rest period is 10 hours, or the length of the preceding FDP, whichever is the greater, unless the operator has an active and Company-accepted Fatigue Risk Management System (FRMS) which includes a means to proactively monitor fatigue risk. For operators that have an accepted FRMS, the rest period is not less than 10 hours.

18C.5 An extension to the FDP is permitted on condition that the aircraft operator has a FRMS .

18C.6 Rostering takes account of local traditions and/or religious practices that impact flight crew's ability to meet normal Flight Duty Time (FDT) limitations.

Guidance documents

- ICAO Doc 9966
- ICAO Annex 6
- ICAO Fatigue Risk Management System (FRMS) Implementation guide for aircraft operators
- HeliOffshore Safety Performance Model

19. Flight crew fatigue management - rest for rotating crews

19A. Purpose

Ensuring the flight crew are suitably rested for the type of operation.

19B. Expectations

The Aircraft Operator has established a rest policy for rotating crews, if applicable.

19C. Processes and practices

19C.1 Crews on rotating assignments that arrive following prolonged or overnight travel, or travel exceeding four time zone changes, are not rostered for flying duties until the minimum 10 hour rest period is met.

19C.2 Workload, roster schedules, and start times are considered to increase the minimum required rest period. Appropriate rest periods are established for all operations with guidance from the NAA and/or the Company's Aviation Advisor.

Guidance documents

- ICAO Annex 6 Vol 3 Chapter 2.8
- ICAO Doc 9966
- HeliOffshore Safety Performance Model

20. Flight crew fatigue management – night standby duty

20A. Purpose

Ensuring the flight crew are suitable rested for the type of operation.

20B. Expectations

The Aircraft Operator has established a policy for night standby duty, if applicable.

20C. Processes and practices

20C.1 After a day duty period, each pilot has at least 12 hours rest prior to being rostered for night standby duty.

20C.2 Pilots nominated for night standby duty (at their place of rest) who are not called out to fly, are considered available for duty in the following day period. If the pilots are called out to fly during the night, they have a minimum of 12 hours rest after completion of their FDP.

Guidance documents

- ICAO Annex 6
- ICAO Doc 9966
- HeliOffshore Safety Performance Model

AVIATION WEATHER

21. Aviation weather - IFR/VFR

21A. Purpose

Establishing weather limitations consistent with the capabilities of the aircraft and rescue assets are applied to each flight, with provision for appropriate training in anticipated conditions.

21B. Expectations

All CAT flights are conducted under IFR when possible.

21C. Processes and practices

21C.1 All CAT flights are conducted under IFR, unless Visual Flight Rules (VFR) is a safer option, or when IFR flight is not possible. VFR flights are carried out using multi-crew coordination procedures for the whole flight.

21C.2 IFR operations comply with local regulatory IFR weather minima unless more stringent Company requirements are issued.

21C.3 Onshore VFR operations comply with the local regulatory VFR operating minima but not below the minima in Table 21.1, Onshore VFR minima.

Table 21-1: Onshore VFR minima

	Minimum operating height (Feet)	Cloud Base (Feet)	Visibility (Meters)	Specific Requirements
Day	500	600	3000 (See note 1)	ICAO Minima
Night	1000	1500 (with 100 feet of vertical cloud clearance)	5000 (See note 1)	

Notes:
1. Minimum visibility is reduced to 1500m subject to NAA approval

21C.4 VFR/VMC on top operations are prohibited.

AVIATION WEATHER

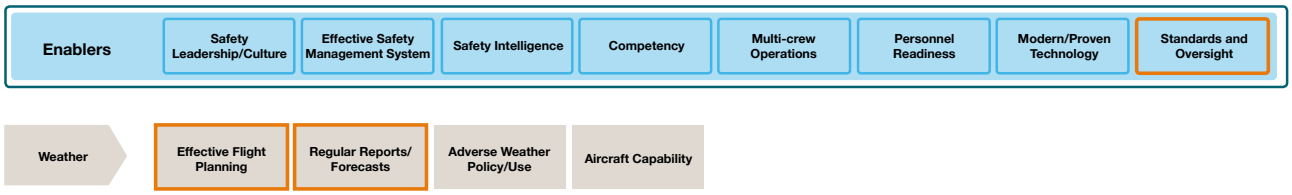
Table 21-2: Offshore VFR minima

	Minimum operating height (Feet)	Cloud Base (Feet)	Visibility (Meters)	Specific Requirements
Day	500	600	5000 (See note 1)	ICAO Minima
	300	400	2000	Offshore inter-field use only if destination or intermediate structure is continuously visible
Night	500	600	5000	Offshore inter-field use only if destination or intermediate structure is continuously visible

Notes:
1. Minimum visibility may be reduced to 1500 m subject to NAA approval.

Guidance documents

- ICAO Annex 6
- HeliOffshore Safety Performance Model



22. Aviation weather - adverse weather policy

22A. Purpose

Establishing weather limitations consistent with the capabilities of the aircraft and rescue assets are applied to each flight, with provision for appropriate training in anticipated conditions.

22B. Expectations

An adverse weather policy has been developed by the company in conjunction with the aircraft operator.

22C. Processes and practices

22C.1 An adverse weather policy is in place which has been developed by the Company in conjunction with the aircraft operator.

22C.2 The adverse weather policy clearly states under what conditions flying operations are to be restricted or temporarily halted and supported by appropriate procedures. The policy also contains instructions for en-route monitoring.

22C.3 For offshore helicopters, these situations include, but are not restricted to:

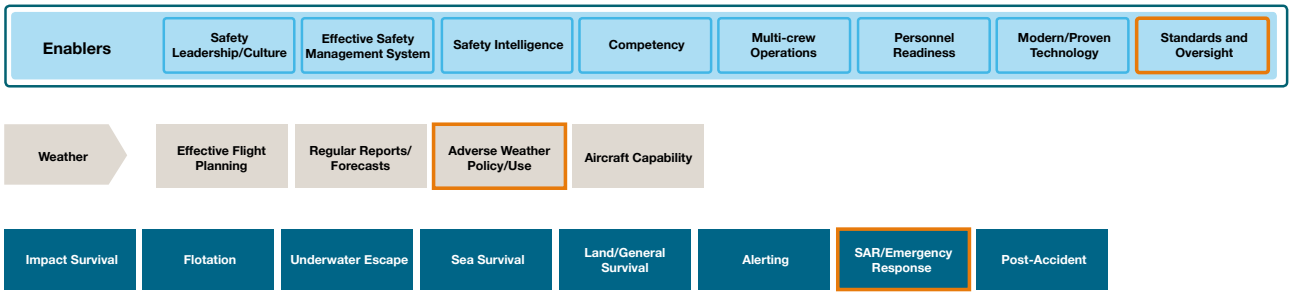
- 22C.3.1 Excessive wind over helidecks prohibiting personnel movement to and from the helicopter
- 22C.3.2 Adverse sea conditions resulting in an unacceptable risk of immediate capsizing, or preventing effective offshore search and rescue
- 22C.3.3 Significant Wave Height (SWH) over the ditching certified capability of the helicopter, see 690-5 – Helicopter and equipment, Section 17 C.2.
- 22C.3.4 Thunderstorms including lightning
- 22C.3.5 Hail
- 22C.3.6 Freezing rain
- 22C.3.7 Helicopter-triggered lightning
- 22C.3.8 Volcanic ash
- 22C.3.9 Low visibility

22C.4 The adverse weather policy considers the aircraft type and survival equipment in use, (see 690-5), the available Search and Rescue (SAR) capability and applicable Emergency Response Plans (ERP) (see 690-1 - *Safety Management Systems*, Section 5) and is revised when material changes to these considerations occur.

AVIATION WEATHER

Guidance documents

- ICAO Annex 6
- UK CAA CAP 641 Review of Helicopter Offshore Safety and Survival
- HeliOffshore Safety Performance Model



FLIGHT OPERATIONS – HELIDECKS

23. Helidecks - helideck landing limits

23A. Purpose

Ensuring a safe envelope for vessel movements to enable a safe landing and stability when on the helideck.

23B. Expectations

The aircraft operator has established pitch, roll, and heave limits for helideck operations.

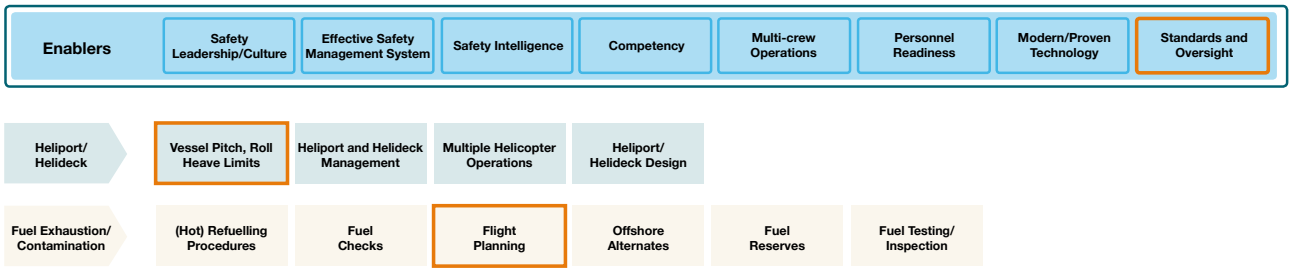
23C. Processes and practices

23C.1 Unless approved to operate to other NAA limits, the limits in the Helideck Certification Agency's (HCA) Helideck Limitations List (HLL) Part C, or the aircraft operator's OM (whichever are more stringent) are used.

23C.2 These limits are only applicable for landing, not for take-off.

Guidance documents

- UK CAA CAP 437
- Helicopter Safety Advisory Committee (HSAC) Recommended Practices 163
- ICS Guide to Helicopter-Ship Operations Chapters 3.7.3, 4.2.3
- HeliOffshore Safety Performance Model



FLIGHT OPERATIONS – HELIDECKS

24. Helidecks - Measurement of helideck motion

24A. Purpose

Ensuring a safe envelope for vessel movements to enable a safe landing and stability when on the helideck.

24B. Expectations

The Aircraft Operator only uses moving helidecks when the reported motion is within limits for the helicopter.

24C. Processes and practices

24C.1 When mandated by local operating requirements, and otherwise where available, electronic deck motion and wind monitoring equipment is used that meets the latest requirements of CAP 437 or an equivalent standard.

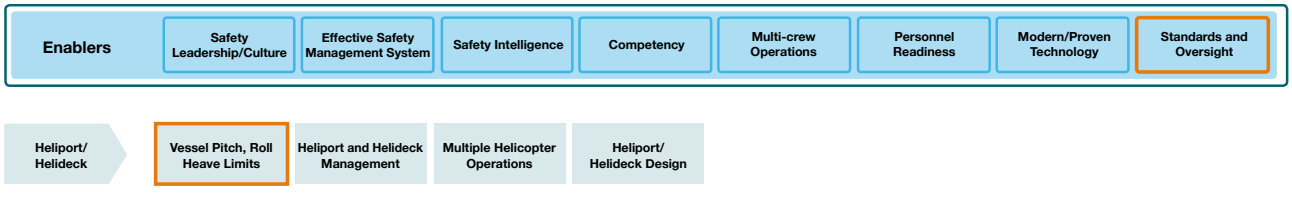
24C.2 The helideck motion and wind information is available to and used by pilots for pre-flight planning and updated information is passed to the crew before landing, and at any time there is a significant change in conditions (see 690-2, Section 25 – Helidecks - significant changes in helideck conditions).

24C.3 The flight crew verifies that the reported helideck motion is within limits detailed in the Air Operator's Operations Manual or the HCA - Helideck Limitations List Part C, whichever is the more stringent, before landing.

24C.4 When a vessel gives permission for a helicopter to land on deck, the vessel intends to maintain the existing heading while the helicopter remains on the deck. The monitoring station providing deck motion limits and wind data is manned during the entire time the helicopter is operating on the deck.

Guidance documents

- UK CAA CAP 437
- HSAC RP 163
- IOGP Report 697 – Helidecks and facilities
- ICS Guide to Helicopter-Ship Operations Chapters 3.7.3, 4.2.3.
- Helideck Certification Agency - Helideck Limitations List Part C
- HeliOffshore Safety Performance Model



FLIGHT OPERATIONS – HELIDECKS

25. Helidecks - significant changes in helideck conditions

25A. Purpose

Ensuring a safe envelope for vessel movements to enable a safe landing and stability when on the helideck.

25B. Expectations

The helicopter flight crew are informed if there are any significant changes to helideck conditions.

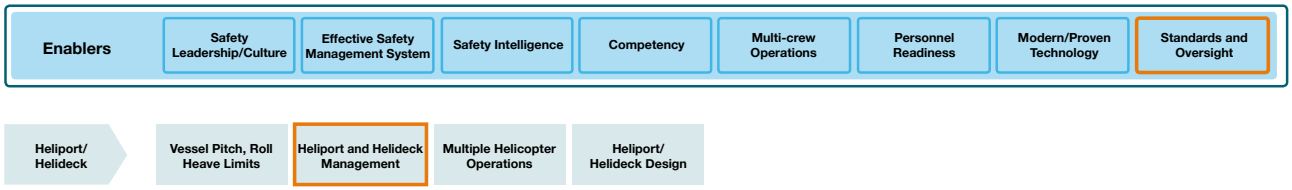
25C. Processes and practices

25C.1 The helicopter crew are notified immediately by radio if any of the following occurs:

- 25C.1.1 The vessel goes off heading by 10° or more.
- 25C.1.2 There is a vessel/installation or station keeping/handling problem.
- 25C.1.3 Helideck Motion exceeds the limits in the Helideck Certification Agency's Helideck Limitations List Part C or other national limits.
- 25C.1.4 There is a significant change in the relative wind direction of 30° or more.
- 25C.1.5 There is any other abnormal event, e.g., adverse weather conditions.

Guidance documents

- UK CAA CAP 437
- HSAC RP 163
- IOGP Report 697 – Helidecks and facilities
- ICS Guide to Helicopter-Ship Operations Chapters 3.7.3, 4.2.3.
- Helideck Certification Agency - Helideck Limitations List Part C
- HeliOffshore Safety Performance Model



FLIGHT PLANNING

26. Flight planning

26A. Purpose

Ensuring that a safe and efficient flight can be conducted.

26B. Expectations

The Aircraft Operator has established flight planning procedures.

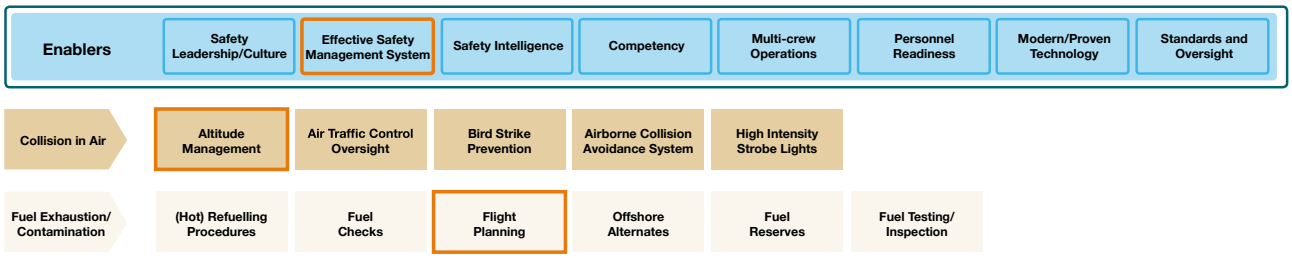
26C. Processes and practices

26C.1 Flight planning procedures take account of:

- 26C.1.1 The configuration and serviceability of the aircraft, including Minimum Equipment List/Minimum Departure Standard (MEL/MDS) items
- 26C.1.2 Weather conditions and performance
- 26C.1.3 Routing, manifest (see 690-3 Support Operations, Section 10), fuel requirements, and weight and balance
- 26C.1.4 Destination(s) and alternates
- 26C.1.5 Preparation of an Operational Flight Plan (OFP)[5]

Guidance documents

- UK CAA CAP 437
- ICS Guide to Helicopter-Ship Operations Chapters 3.7.3, 4.2.3.
- Helideck Certification Agency - Helideck Limitations List Part C
- HeliOffshore Safety Performance Model



[4] Aircraft operators use different formats, for OFPs which may contain the following information:
aircraft registration; aircraft type and variant; date of flight; flight identification; names of flight crew members; duty assignment of flight crew members; place of departure; place of arrival; type of operation (ETOPS, VFR, Ferry flight, etc.); route and route segments with checkpoints/waypoints, distances and tracks; planned cruising speed and expected wind components with estimated flying times between check-points/waypoints; safe altitudes and minimum levels; planned altitudes and flight levels; fuel calculations and estimated fuel remaining at each checkpoint/waypoint; alternate(s) for destination and, where applicable, take-off and en-route, including information on fuel burn, routes and safety altitudes

Items which are readily available in other documentation or from another acceptable source or are irrelevant to the type of operation may be omitted from the OFP.

FLIGHT PLANNING

27. Fuel planning

27A. Purpose

Ensuring aircraft depart with sufficient fuel reserves to avoid fuel exhaustion.

27B. Expectations

The Aircraft Operator has established flight planning procedures.

27C. Processes and practices

27C.1 Helicopter fuel planning for an IFR flight includes:

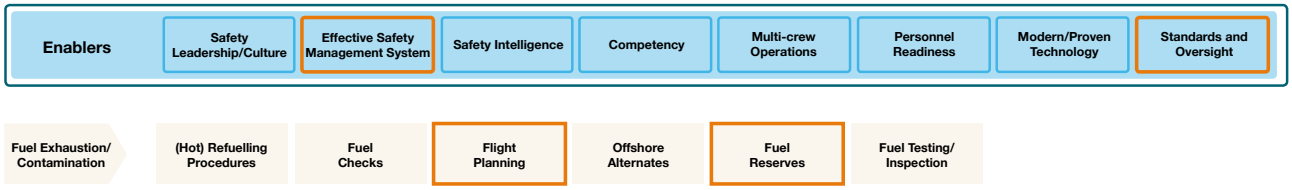
- 27C.1.1 Fuel used during start-up and taxi
- 27C.1.2 Fuel required for the route to the first point of intended landing
- 27C.1.3 Fuel required for ground running on helideck or helipad
- 27C.1.4 Fuel required for the route to onshore alternate heliport or offshore helideck
- 27C.1.5 Contingency fuel as defined by the NAA, plus 30 minutes final reserve

27C.2 Helicopter fuel planning for Visual Flight Rules (VFR) offshore flights includes:

- 27C.2.1 Fuel used during start-up and taxi
- 27C.2.2 Fuel required for the route to the first point of intended landing
- 27C.2.3 Fuel required for ground running on helideck or helipad
- 27C.2.4 Fuel required for the route to an onshore alternate heliport or offshore helideck, plus 30 minutes

Guidance documents

- ICAO Annex 6
- HeliOffshore Safety Performance Model



FLIGHT PLANNING

28. Offshore alternates - Planning

28A. Purpose

Ensuring offshore alternates are only used when One Engine Inoperative (OEI) performance and alternative decks are guaranteed

28B. Expectations

The Aircraft Operator has a documented policy on the use of offshore alternates, if applicable.

28C. Processes and practices

28C.1 Offshore installations are only used as alternates in exceptional circumstances and when agreed by the company. The following minimum requirements are applied before use of offshore alternates is approved:

- 28C.1.1 There is a procedure in the OM for the use of offshore alternates, and that procedure has been approved or accepted by the NAA.
- 28C.1.2 A Point of No Return (PNR) is established:
  - 28C.1.2.1 Before the PNR, an onshore alternate is available.
  - 28C.1.2.2 The PNR is within 30 minutes planned flying time from the destination calculated by using en-route weather reports.
- 28C.1.3 OEI landing capability is assured at the alternate.
  - 28C.1.3.1 The use of an offshore alternate is restricted to helicopters that can achieve OEI In Ground Effect (IGE) hover at an appropriate power rating at the offshore alternate.
  - 28C.1.3.2 Where the surface of the offshore alternate helideck, or prevailing conditions (especially wind velocity), precludes an OEI IGE hover, OEI Out of Ground Effect (OGE) hover performance at an appropriate power rating is used to compute the landing weight.
  - 28C.1.3.3 The landing weight is calculated from data provided in the aircraft flight manual. When calculating this landing weight, account is taken of helicopter configuration, environmental conditions and the operation of systems that have an adverse effect on performance.
  - 28C.1.3.4 The planned landing weight of the helicopter, including 30 minutes of final reserve fuel, does not exceed the OEI landing mass at the time of approach to the offshore alternate.
- 28C.1.4 Deck availability is guaranteed.
  - 28C.1.4.1 The dimensions, configuration, and obstacle clearance of individual helidecks or other sites is assessed in order to establish operational suitability for use as an alternate by each helicopter type used.

FLIGHT PLANNING

28C.1.4.2 In addition, the duty holder of the nominated offshore alternate has guaranteed the availability of the deck (no other planned helicopter operations, a clear deck, and no crane operations) before the flight is dispatched.

28C.1.5 The weather forecast for the offshore destination and offshore alternate is suitable.

28C.1.5.1 When use of an offshore alternate is planned, a helideck is not planned as a destination or offshore alternate unless the weather forecast indicates that, at ETA ±1 hour, the weather conditions are at or above the planning minima shown in table 28-1:

Table 28-1: Weather Minima

	Day	Night
Cloud Base	600 Ft	1000 Ft
Visibility	4000 m	5000

28C.1.5.2 Where fog is forecast, or has been observed within the last two hours within 60 NM of the destination or alternate, offshore alternates are not be used.

28C.1.6 When an offshore alternate is planned, the meteorological observations at the destination and alternate, are taken by a qualified observer, or Automatic Weather Observing System (AWOS) acceptable to the NAA.

28C.1.7 The helicopter MEL reflects essential requirements for this type of operation and there are no open defects relating to MEL items required for the use of offshore alternates.

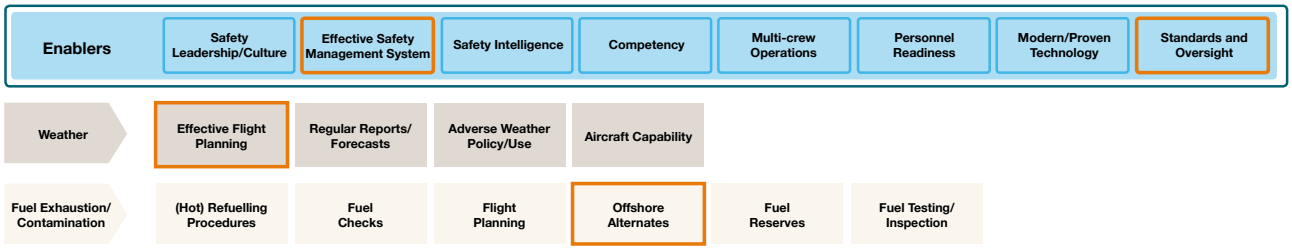
28C.1.8 Any spare payload capacity is used to carry additional fuel, if it would facilitate the use of an onshore alternate.

28C.1.9 The installation selected as suitable for nomination as an offshore alternate has an approved aircraft refuelling capability with all recent serviceability and fuel testing checks completed.

28C.1.10 Mechanical reliability of critical control systems and critical components are considered when determining the suitability of the alternate.

Guidance documents

- ICAO Annex 6
- HeliOffshore Safety Performance Model



FLIGHT PLANNING

29. Offshore alternates - execution

29A. Purpose

Ensuring offshore alternates are only used when OEI performance and alternative decks are guaranteed.

29B. Expectations

The Aircraft Operator has a documented policy on the use of offshore alternates, if applicable.

29C. Processes and practices

29C.1 Before passing the PNR, the following actions are completed:

29C.1.1 Confirmation that navigation to the destination and offshore alternate is assured.

29C.1.2 Radio contact with the destination and offshore alternate (or responsible radio operator) has been established.

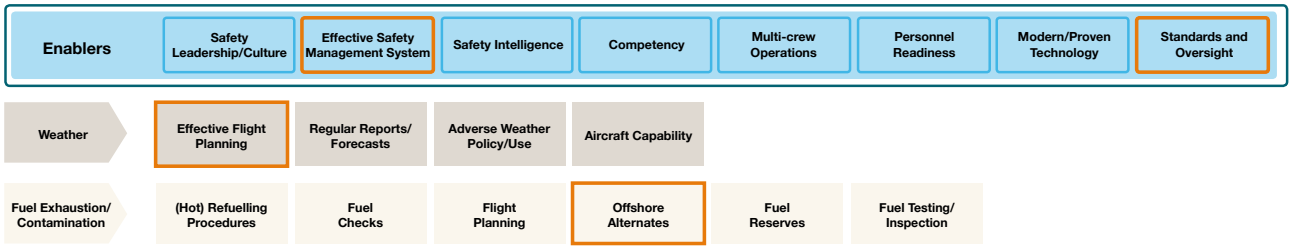
29C.1.3 The landing forecast at the destination and offshore alternate has been obtained and confirmed to be above the required minima as listed in Table 28.1.

29C.1.4 The requirements for an OEI landing have been checked to ensure that they can be met.

29C.1.5 The availability of the offshore alternate has been guaranteed by the duty holder (rig operator for fixed installations and the owner for mobiles or vessels) until landing at the destination, or the offshore alternate, has been achieved (or until offshore shuttling has been completed).

Guidance documents

- ICAO Annex 6
- HeliOffshore Safety Performance Model



FLIGHT PROCEDURES

30. Flight procedures – General

30A. Purpose

Ensuring a safe flightpath with early identification of deviations and timely corrective action.

30B. Expectations

The Aircraft Operator has developed appropriate flight procedures.

30C. Processes and practices

30C.1 Flight procedures (SOPs or OMs) are used by the flight crew in the performance of their duties. The flight procedures are developed in accordance with the RFM and references the FCOM when available.

30C.2 The flight procedures (SOPs or Operation Manuals) are documented concisely for all phases of flight (planning, pre-flight, in-flight and post-flight) and include appropriate Crew Resource Management (CRM) and Threat & Error Management (TEM).

30C.3 The documented flight procedures include specifically:

- 30C.3.1 Clear and detailed PF/PM task assignments, so that flight crew recognize and act on deviations from standards in a timely manner
- 30C.3.2 Identification of threats and errors and the strategies to counteract them, involving all relevant crew
- 30C.3.3 Situational awareness
- 30C.3.4 Identification of critical phases of flight and categorising threat levels for all flight phases with defined mitigations and limitations on crew actions
- 30C.3.5 Use of active monitoring and cross checking
- 30C.3.6 Use of standard flight deck procedural phraseology including 'Standard Call-Outs' for each phase of flight
- 30C.3.7 Application of Sterile Cockpit procedures during critical phases of flight (see 690-2, Section 31, Flight procedures – sterile cockpit)
- 30C.3.8 Use of checklists for all normal, abnormal and emergency procedures and a procedure for interruption of a checklist
- 30C.3.9 Automation policy (see 690-2, Section 5, Automation)
- 30C.3.10 Usage of the OFP (see 690-2, Section 26, Flight planning)
- 30C.3.11 Transfer of control
- 30C.3.12 Crew briefings for planning, pre-flight, departure, approach and post-flight. See 690-2, Section 34, Pre-flight and post-flight procedures

30C.4 LOSA, HFDM and/or Flight Operations Quality Assurance (FOQA) programmes are used to monitor trends regarding these procedures.

FLIGHT PROCEDURES

30C.5 Flight crew are trained in, and make active use of, the following techniques to identify and manage flight risk:

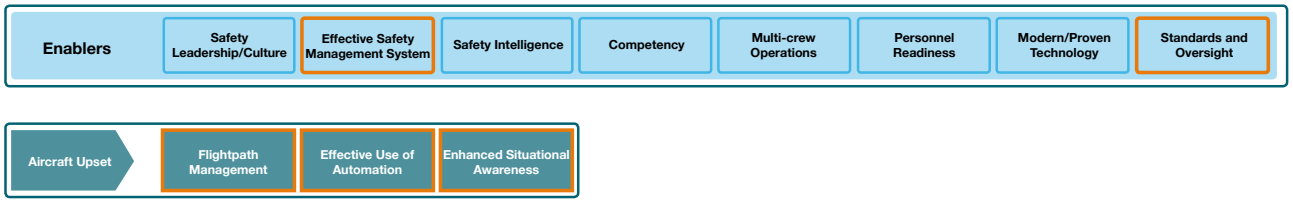
30C.5.1 CRM to develop and maintain efficient use and co-ordination of all flight crew members technical and non-technical skills. Key to good CRM is teamwork, situational awareness, communication, decision making, workload management and problem solving.

30C.5.2 TEM is embedded in all flight procedures, particularly those dealing with critical flight phases in order that threats which may endanger safe operations are recognized and managed. In the same way, the potential for errors by flight crew is recognized and managed.

30C.5.3 Aeronautical Decision Making (ADM) provides a systematic approach to processes used by pilots as they adapt to changing circumstances through the flight.

Guidance documents

- ICAO Annex 6
- FAA AC 120-51E (Crew Resource Management Training)
- HeliOffshore Safety Performance Model



FLIGHT PROCEDURES

31. Flight procedures – sterile cockpit

31A. Purpose

Ensuring a safe flightpath with early identification of deviations and timely corrective action.

31B. Expectations

The Aircraft Operator has established a sterile cockpit policy.

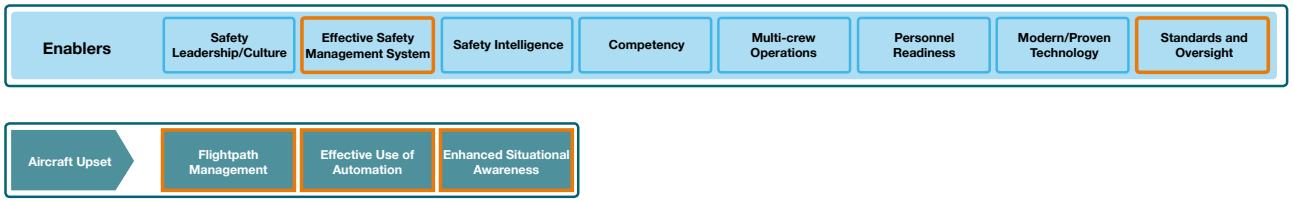
31C. Processes and practices

31C.1 There is a sterile cockpit policy covering, as a minimum, restrictions on unnecessary conversation, restricting activities to essential operational matters during critical phases of flight, use of Electronic Flight Bags (EFBs) or Personal Electronic Devices (PEDS), and paperwork, during flight below key altitudes, and during certain phases of flight or ground operations.

31C.2 The sterile cockpit policy contains Pilot Flying (PF)/Pilot Monitoring (PM) responsibilities.

Guidance documents

- FAA CFR 121.542.
- EASA Part ORO.GEN.110(f).
- Flight Safety Foundation Approach and Landing Accident Reduction Toolkit
- HeliOffshore Safety Performance Model.



FLIGHT PROCEDURES

32. Flight procedures – helicopter stabilized approaches

32A. Purpose

Ensuring a safe flightpath with early identification of deviations and timely corrective action.

32B. Expectations

The Aircraft Operator has established and documented stabilized approach procedures

32C. Processes and practices

32C.1 Stabilized approach procedures are documented that define when to conduct a missed approach or abort a landing if deviation criteria for a stabilized approach are not met.

32C.2 The development of these procedures are based on HeliOffshore Flightpath Management Recommended Procedures.

32C.3 Stabilized approach procedures are specific to the aircraft type or use a Type Certificate Holder-issued FCOM when available.

32C.4 Procedures are characterized by defined speeds, climb/descent rate, vertical flight-path and configuration, through a series of defined 'gates' as necessary.

32C.5 Stabilized approach criteria confirm that:

- 32C.5.1 The aircraft is on the correct flight path and only requires small changes in heading, attitude and power to remain on the correct flight path.
- 32C.5.2 The aircraft is in the correct landing configuration and all briefings and checklists have been conducted.
- 32C.5.3 The power setting is appropriate for the aircraft configuration, not below the manufacturer's minimum if specified in the RFM or FCOM, when available.
- 32C.5.4 Flight crew procedures include monitoring of the flight path and the requirement to announce deviations and subsequent actions using specified criteria.

32C.6 All instrument approaches are flown in accordance with the published instrument procedure. Unique approach procedures or abnormal conditions that require a deviation from stabilized approach criteria require a special briefing.

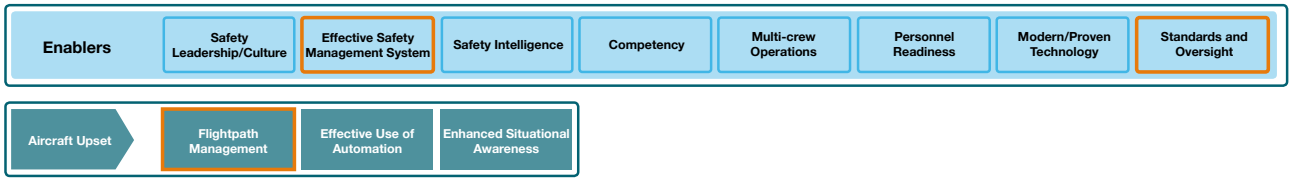
32C.7 Procedures are in place for no-fault, mandatory go-arounds if any approach not be stabilized, and pilots practice all-engine operating (AEO) go-arounds as part of their proficiency training.

32C.8 The aircraft operator uses HFDM and LOSA analysis of stabilized approaches, landings, and departures within its SMS to assist with the identification of specific risks in the conduct of flight procedures.

FLIGHT PROCEDURES

Guidance documents

- ICAO PANS OPS Vol 1 (Flight Procedures)
- ICAO Global Runway Safety Action Plan
- HeliOffshore Flightpath Management Recommended Practices
- HeliOffshore Safety Performance Model



FLIGHT PROCEDURES

33. Flight procedures – assessment of wrong deck landing risk

33A. Purpose

Ensuring a safe flightpath with early identification of deviations and timely corrective actions.

33B. Expectations

The Aircraft Operator has established a procedure for flight crew to confirm the location of offshore destinations.

33C. Processes and practices

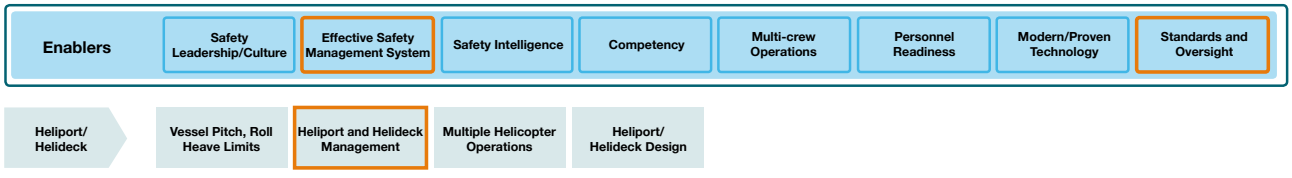
33C.1 There is a process to identify the relative risk (high, medium, or low) of a wrong deck landing at a particular destination or vessel during flight planning. This process considers factors such as the location of mobile installations and vessels, proximity of adjacent decks, physical similarity of adjacent installations or vessels, similarity in naming conventions, etc.

33C.2 Procedures are in place to review this risk during all pre-flight briefings and discuss in pre-landing briefings (unless the risk in that area is continuously low).

33C.3 There are procedures in the OM/normal checklists for verification of the destination position and facility name when approaching all vessels and installations.

Guidance documents

- CAP 437
- UK Health and Safety Executive Report OTO 2000/067 Review Of Wrong Helideck Landings, Status Lights and Signalling Lamps
- HeliOffshore Wrong Deck Landings Research and Investigation Report
- BARSOHO Section 3.3 - Assessment of Wrong Deck Landing Risk
- HeliOffshore Safety Performance Model



FLIGHT PROCEDURES

34. Pre-flight and post-flight procedures

34A. Purpose

Ensuring the aircraft and crew are correctly prepared for flight and any aircraft defects are properly recorded.

34B. Expectations

The Aircraft Operator has established procedures for the identification and management of flight risks and the use of the aircraft technical log and MEL/MDS.

34C. Processes and practices

34C.1 Flight crew pre-flight actions:

- 34C.1.1 Identify relevant flight risks and mitigation strategies by using appropriate TEM techniques
- 34C.1.2 Complete pre-flight planning, including selection of flight altitude, heliports, fuel requirements, aircraft performance, adverse weather avoidance and measures to manage potential bird strike risk
- 34C.1.3 Brief crew responsibilities and tasks
- 34C.1.4 Perform an exterior aircraft inspection prior to each flight, which is conducted by a member of the flight crew

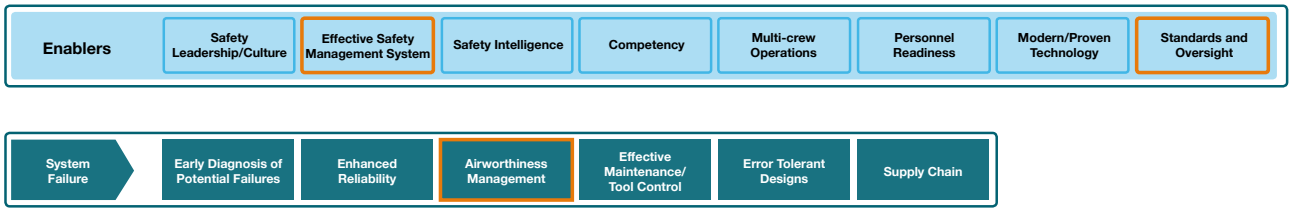
34C.2 Flight crew responsibilities for the use of the MEL/MDS and Aircraft Technical Log (ATL) are clearly defined.

34C.3 The aircraft is prohibited from departure with a defect that has not been processed in accordance with the MEL/MDS/CDL.

34C.4 Post-flight, the flight crew complete a debrief to ensure lessons from the flight are captured and any necessary safety reports are submitted. At a minimum, the debrief covers CRM/Human Factors (HF) performance, compliance with SOPs, recording of any aircraft defects, and debriefing maintenance personnel and operational facilities staff (management and infrastructure).

Guidance documents

- ICAO Annex 6
- HeliOffshore Safety Performance Model



FLIGHT PROCEDURES

35. Flight following

35A. Purpose

Ensuring timely alerting and location identification to aid SAR services.

35B. Expectations

The Aircraft Operator has established flight following procedures.

35C. Processes and practices

35C.1 Flight following is achieved by Air Traffic Control (ATC) delivered radar, voice or electronic surveillance. A satellite flight following system is installed that records aircraft position when the aircraft is outside an effective ATC surveillance service (Radar, Voice or Automatic Dependent Surveillance – Broadcast (ADS-B)).

35C.2 Satellite position reporting frequency is a maximum interval of two minutes.

35C.3 The system and processes in place are appropriate to the environment and mission. As a minimum the following is required:

35C.3.1 When satellite tracking is in use, the aircraft's position is shown on a monitor which is in direct view of trained operations personnel who keep the aircraft under constant surveillance during the whole flight.

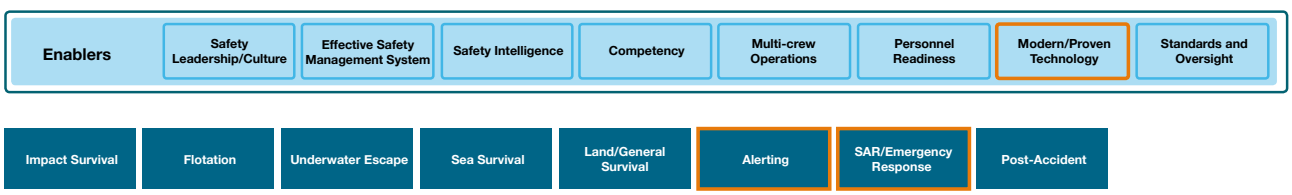
35C.3.2. When the aircraft is not under ATC surveillance, aircraft operator's flight following personnel are able to initiate the Emergency Response Plan if required. There is a reliable means of direct communication available between the aircraft and flight follower throughout the flight. Activation of an ERP occurs in event of distress or loss of communications.

35C.4 The flight following system is not to be unserviceable for more than one day. In the event of unserviceability, the following applies:

35C.4.1 When the aircraft is not under ATC surveillance and the satellite flight following system is inoperative, procedures are in place for regular "ops normal" radio calls at least every 15 minutes. Such calls include heading, speed, position and are recorded in a log.

Guidance documents

- ICAO Global Aeronautical Distress & Safety System (GADSS).
- HeliOffshore Safety Performance Model.



FLIGHT PROCEDURES

36. Specific offshore installation operations

36A. Purpose

Ensuring that helicopter operations are conducted safely during specific offshore installation operations.

36B. Expectations

Proper actions are taken to ensure safe helicopter operations.

36C. Processes and practices

36C.1 During perforation operations:

36C.1.1 Helicopter operations are prohibited.

36C.1.2 The aircraft operator respects the 500m safety zone and radio silence when perforating operations are in progress.

36C.2 During cold flaring operations:

36C.2.1 Transiting traffic is advised to avoid overflying the installation by either 3 nm laterally or 2000 feet vertically.

36C.2.2 Operations are permitted to offshore installations which are cold flaring provided an arc downwind of the flare boom ±30° can be avoided at all times to ensure the helicopter remains clear of the unlit plume. If the wind speed is equal to or greater than five knots, consider suspending operations. If separation from the plume cannot be guaranteed at all times, operations are not permitted.

Guidance documents

- HeliOffshore Safety Performance Model.

FLIGHT PROCEDURES

37. Bird strike avoidance

37A. Purpose

Ensuring effective bird control measures are in place to minimize bird strikes.

37B. Expectations

The Aircraft Operator has established procedures to minimize the risk of bird strikes.

37C. Processes and practices

37C.1 Aircraft routing considers bird sanctuaries, known nesting areas, and migratory bird paths, as far as practical.

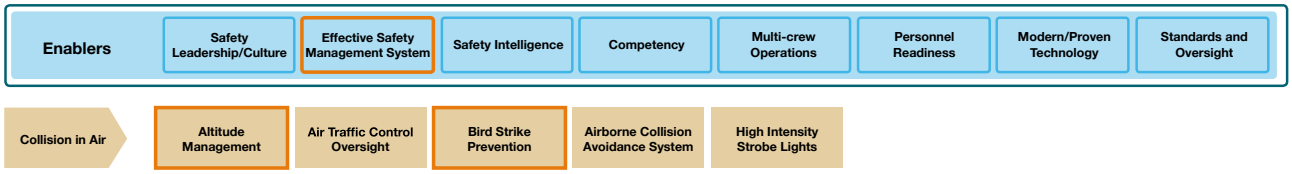
37C.2 In the area where bird strike risk is identified, mitigating actions are implemented by the aircraft operator including documented defined, speed and altitude limits and the use of personal safety equipment, if appropriate.

37C.3 Flight crews are trained in bird avoidance techniques.

37C.4 The aircraft routing and mitigation procedures are tracked in FDM.

Guidance documents

- HSAC-RP 2010-3
- HeliOffshore Safety Performance Model



FLIGHT PROCEDURES

38. Cabin area cargo

38A. Purpose

Ensuring the accurate and safe aircraft loading within approved limits.

38B. Expectations

Cabin area cargo is correctly secured.

38C. Processes and practices

38C.1 Cargo carried inside the passenger compartment is adequately secured.

38C.2 If cargo obstructs any normal or emergency exits, the passenger load is reduced to allow safe egress in the event of an emergency.

38C.3 Cargo carried in the cabin is subject to approval by the Company.

Guidance documents

- ICAO Annex 6
- HeliOffshore Safety Performance Model

FLIGHT CREW TRAINING

39. Flight crew training – records and programmes

39A. Purpose

Ensuring safety critical personnel are competent to fulfil their duties by having appropriate training, qualifications, knowledge, skills, and experience.

39B. Expectations

The Aircraft Operator maintains training documentation for flight crew.

39C. Processes and practices

39C.1 Comprehensive training documentation and competence assessment is maintained, including details of training programmes and the required training frequency.

Guidance documents

- ICAO Annex 6
- HeliOffshore Safety Performance Model

FLIGHT CREW TRAINING

40. Flight crew recency

40A. Purpose

Ensuring safety critical personnel are competent to fulfil their duties by having appropriate competence and recent experience.

40B. Expectations

The Aircraft Operator has a documented type and role programme for recency and absence of flight crew.

40C. Processes and practices

40C.1 Flight crew maintain the recency requirements in Table 40-1

Table 40-1: Flight crew competence and recency requirements

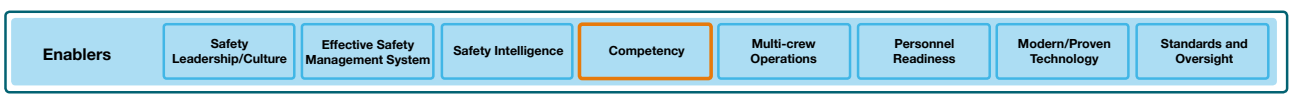
Requirement	Recency
Total hours previous 60 days	15 hours on contracted type (See Notes 1 and 6)
Offshore recency previous 60 days	3 cycles to an offshore helideck (see Notes 2 and 3, 4 and 6)
For night operations, night offshore recency previous 90 days	3 night offshore cycles on the contracted aircraft type or in the simulator of the same type or series being flown (See Notes 3, 4, 5, 6)
For night operations, night offshore recency previous 365 days	3 actual offshore cycles on the contracted aircraft type (see Notes 3, 4 and 6)

Table Notes:

1. If hours are not met, a recency check on the contracted type (a dedicated flight or a normal revenue flight) is conducted by a LTC/TRI. The flight includes at least a sector flying as PM and another sector as PF. Successful completion of a recency check re-establishes recency for 60 days. The Company Aviation Advisor is to be notified each time a recency flight was required.
2. If the day cycles are not met between 60 and 90 days, an offshore recency training flight (which may be a revenue flight) with a current LTC/TRI is made to regain offshore recency. Successful completion of a recency check re-establishes recency for 60 days.
3. If the day and/or night cycles are not met within 90 days (and 365 days for night offshore cycles), a non-passenger carrying line training flight with a current LTC/TRI is made to regain the appropriate offshore recency.
4. One cycle consists of a take-off, approach and landing on the contracted aircraft type.
5. Use of a simulator of the same type or series being flown is acceptable to meet the night recency requirements, provided this is acceptable under national legislation, and it has the visual fidelity to replicate landing on an offshore facility under the typical spread of local weather conditions. The simulator recurrent training sessions are to be supervised by a Simulator Flying instructor (SFI)/TRI/TRE.
6. The recency training flights, or line checks as mentioned in note 1, 2 and 3 above are to determine proficiency for the environment and operations carried out. They are not intended to be conducted routinely at the end of a recency period. In the cases where the recency requirements are regularly missed due to low contracted flight operational hours, a risk assessment with appropriate mitigation is presented to the Company Aviation Advisor.

Guidance documents

- ICAO Annex 6
- HeliOffshore Safety Performance Model



FLIGHT CREW TRAINING

41. Flight crew training – recurrent training and maintenance check flights

41A. Purpose

Ensuring safety critical personnel are competent to fulfil their duties by having appropriate training, qualifications, knowledge, skills, and experience.

41B. Expectations

The Aircraft Operator has established a recurrent training programme for flight crews.

41C. Processes and practices

41C.1 All pilots receive recurrent training and checking to the standards of the NAA, including a six-monthly aircraft OPC.

41C.1.1 One of these checks includes an annual instrument rating and licence renewal proficiency check.

41C.1.2 The aircraft operator training program covers all major emergencies of the contracted helicopter type in a 3-year rolling program.

41C.1.3 See 690-2, Section 43, Use of Flight Simulation Training Devices – General, 43C.1, and Section 44, Use of Flight Simulation Training Devices – Devices, item 44C.1

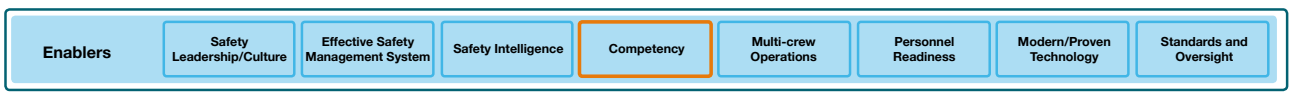
41C.2 Where distinct climatic seasons exist, training is related to seasonal changes.

41C.3 Before being scheduled for flight duties in a new location, all crew members undergo at least a documented orientation line check, including a review of local procedures and policies.

41C.4 The aircraft operator develops a specific training program for complex Maintenance Check Flights (MCF), appropriate for the complexity of the aircraft and the level of the MCF required. If required, the aircraft operator assigns this MCF training program to a specific selection of flight crew and as required, engineers. See 690-4, Engineering, Section 18 – Maintenance Check Flights.

Guidance documents

- ICAO Annex 6
- HeliOffshore Safety Performance Model



FLIGHT CREW TRAINING

42. Rostering flight crew

42A. Purpose

Ensuring safety critical personnel are competent to fulfil their duties by having appropriate training, qualifications, knowledge, skills, and experience.

42B. Expectations

The Aircraft Operator has established a rostering policy for flight crew.

42C. Processes and practices

42C.1 The operator has a rostering policy which covers at least:

- 42C.1.1 Rostering pilots who:
  - 42C.1.1.1 Hold a valid and current license as appropriate
  - 42C.1.1.2 Hold a valid aircraft rating and instrument rating
  - 42C.1.1.3 Meet the customer and operator recency requirements
  - 42C.1.1.4 Hold a valid medical certificate
  - 42C.1.1.5 Are competent for the rostered flight
  - 42C.1.1.6 Are compliant with all FDT and FTL limitations for the scheduled flight
- 42C.1.2 Rostering pilots in a new environment
- 42C.1.3 Not rostering co-pilots with less than 500 hours offshore multi engine and multi-crew with any commander who has less than 100 hours PIC since command appointment on the contracted type.
- 42C.1.4 Avoiding the rostering of pilots continuously together causing possible familiarity complacency on the base.
- 42C.1.5 Pilots have gained sufficient experience and competence before rostering for offshore night operations.
- 42C.1.6 When rostering crews for night operations, the "pairing" of crews avoids a crew having a low total or recent night experience.

Guidance documents

- ICAO Annex 6
- HeliOffshore Safety Performance Model

FLIGHT CREW TRAINING

43. Use of flight simulation training devices – general

43A. Purpose

Ensuring safety critical personnel are competent to fulfil their duties by having appropriate training, qualifications, knowledge, skills, and experience.

43B. Expectations

Flight Crews conduct training in suitable Flight Simulation Training Devices (FSTDs).

43C. Processes and practices

43C.1 Flight crews are to be seated at their normal flight control stations to receive credit for simulator time.

43C.1.1 Pilots who operate in either seat are trained and checked in both seats.

43C.2 FSTDs include landing area visual, weather experienced simulations that are representative of those being used by the aircraft operator, including for example, aerodrome and helideck visuals with markings representative of those being used in daily operations.

43C.3 Instructors can communicate effectively with the trainees.

43C.4 Where differences exist between the aircraft and training devices (e.g., equipment fit, software version), a gap analysis is conducted, and suitable mitigations applied.

Guidance documents

- ICAO Doc 9625 Vol 2
- HeliOffshore Safety Performance Model

FLIGHT CREW TRAINING

44. Use of flight simulation training devices – devices

44A. Purpose

Ensuring safety critical personnel are competent to fulfil their duties by having appropriate training, qualifications, knowledge, skills, and experience.

44B. Expectations

Flight Crews conduct training in suitable FSTDs every six months.

44C. Processes and practices

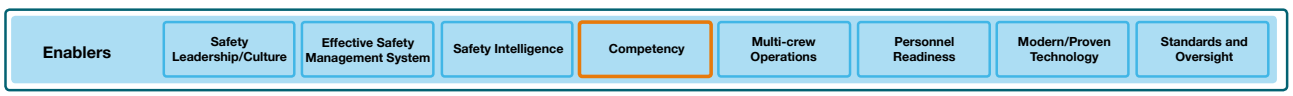
44C.1 Flight crew undergo recurrent training and checking (including OPC/LPC/IR check) in an approved FSTD at a frequency of at least every six months. Level C or Level D FFS (or type -specific Type III, IV or V devices as described in ICAO Doc 9625 Vol 2) are used where available for the type. See 690-2 Aircraft Operations, Section 41, Flight crew training – recurrent training and maintenance check flights, item 41C.1.

44C.2. The FSTD training syllabus incorporates Line Orientated Flight Training (LOFT) scenarios and TEM training, including those emergencies that cannot be practised in the air.

44C.3 Use of a simulator of the same type and series being flown with a lower certification/ specifications mentioned in 44C.1, is used if agreed by the Company, provided the device has the capability of simulating the approach and landing to an offshore helideck. In addition, the specific device to be used is approved for that use by the relevant NAA.

Guidance documents

- ICAO Doc 9625 Vol 2
- HeliOffshore Safety Performance Model



FLIGHT CREW TRAINING

45. Introduction of new aircraft types

45A. Purpose

Ensuring safety critical personnel are competent to fulfil their duties by having appropriate training, qualifications, knowledge, skills, and experience.

45B. Expectations

The Aircraft Operator has a documented conversion syllabus when introducing a new aircraft type.

45C. Processes and practices

45C.1 When new types are introduced into service, an introduction into service program is developed in conjunction with the Company.

45C.2 The programme is approved by the NAA and is run either by the OEM or by an approved and licenced Approved Training Organization (ATO); if applicable, it includes time spent in an FSTD.

Guidance documents

- ICAO Annex 6
- HeliOffshore Safety Performance Model

OTHER TRAINING

46. Other training - crew resource management

46A. Purpose

Ensuring safety critical personnel are competent to fulfil their duties by having appropriate training, qualifications, knowledge, skills, and experience.

46B. Expectations

The Aircraft Operator has a CRM training programme in place for all crew.

46C. Processes and practices

46C.1 CRM concepts are embedded in line operations including checklists, briefings, abnormal and emergency procedures The aircraft operator CRM system, approved by the NAA if required, includes the following components:

- 46C.1.1 Initial classroom-based training
- 46C.1.2 Annual recurrent training, including in-person classroom training and aircraft type training elements
- 46C.1.3 CRM command course training
- 46C.1.4 Periodic assessment and competency

46C.2 The CRM training programme provides the following:

- 46C.2.1 A standard training syllabus for every crew member
- 46C.2.2 An additional training programme tailored specifically to the operator

46C.3 The initial classroom-based training covers, as a minimum, the following topics:

- 46C.3.1 TEM procedures and techniques
- 46C.3.2 Effective communication and coordination, including the effects of cultural differences
- 46C.3.3 Situational awareness, information acquisition, and processing
- 46C.3.4 Pressure and stress
- 46C.3.5 Fatigue and vigilance
- 46C.3.6 Workload management, human performance and limitations
- 46C.3.7 Monitoring, intervention, decision building
- 46C.3.8 Leadership and team building
- 46C.3.9 Automation, philosophy on the use of automation and technology management
- 46C.3.10 Relevant case studies appropriate to the aircraft operator and type of operations
- 46C.3.11 Error avoidance
- 46C.3.12 Threat management
- 46C.3.13 Error management
- 46C.3.14 Undesired aircraft state management

OTHER TRAINING

46C.4 The annual recurrent CRM training covers, as a minimum, the following:

- 46C.4.1 TEM procedures and techniques
- 46C.4.2 In-depth review of a minimum of three core elements as found in 46C.3.2 – 46C3.10 above. On a three-year cycle, all nine topics are covered.
- 46C.4.3 Review and discussion of current safety trends with the Operator's specific operations and industry case studies.
- 46C.4.4 Crew member evacuation drills, including de-briefing.
- 46C.4.5 The recurrent training to be in-person classroom training every third year.

46C.5 The operator develops the above CRM training programme tailored to the size and scope of their operations and pays particular attention to the current state of human factors and technology interface in the operational environment.

46C.6 The CRM is integrated in every stage of training. Whenever practicable, parts of the CRM training are conducted in FSTDs that reproduce a realistic operational environment and permit interaction, this includes LOFT scenarios. The OPC to include a LOFT section during which a complementary CRM assessment is completed in conditions that reproduce a realistic operational environment.

46C.7 The non-technical skills are assessed, if possible.

46C.8 CRM training is reviewed at least every three years for effectiveness based on output from the operator's management system and is adjusted with the regular output/outcome of the FDM and LOSA programme (see 690-1 Safety Management Systems, Section 14, Line Operations Safety Audit).

46C.9 While CRM training can be delivered by different means, some components of training are facilitated using a specific training, e-learning, Computer Based Training (CBT), and self-study; however, these may only be used as a pre-requisite for classroom trainer/facilitation.

46C.10 The operator documents the competence and training requirements of the CRM trainer/facilitator. As a minimum, the CRM trainer/facilitator has:

- 46C.10.1 Adequate knowledge of CRM
- 46C.10.2 Adequate knowledge of Human Performance and Limitations (HPL)
- 46C.10.3 Completed CRM training themselves
- 46C.10.4 Adequate knowledge of the operational environment of the specific operator
- 46C.10.5 Adequate knowledge, skills and credibility required to deliver the CRM training elements in the non-operational environment

46C.11 The CRM trainer/facilitator competence to be assessed every three years through a documented aircraft operator procedure.

OTHER TRAINING

Guidance documents

- EASA ORO.FC.115 Crew resource management (CRM) training
- FAA AC 120-51E - Crew Resource Management Training
- ICAO Doc 9683 – Human Factors Training Manual
- HeliOffshore Safety Performance Model.

OTHER TRAINING

47. Other training – dangerous goods training

47A. Purpose

Ensuring only appropriately packaged and documented dangerous goods are carried in the appropriate aircraft hold locations.

47B. Expectations

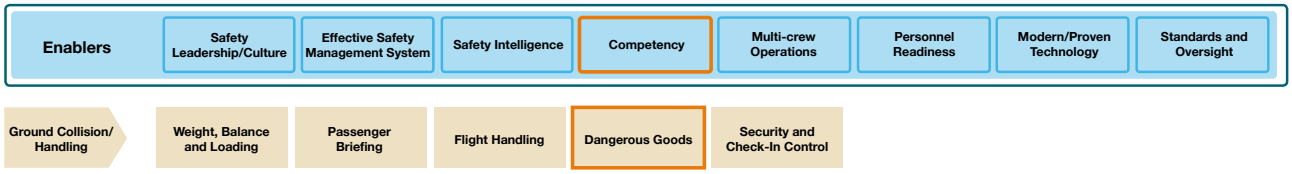
The Aircraft Operator has a dangerous goods training programme in place.

47C. Processes and practices

47C.1 Dangerous goods awareness training, compliant with NAA requirements, is in place for all flight crew, cabin crew, technical crew, and appropriate ground staff as mandated under ICAO/IATA Technical Instructions - at least every two years to ensure that they are aware of the requirements, including relevant legislation, limitations and documentation, for the carriage of hazardous materials.

Guidance documents

- ICAO Annex 18
- IATA Dangerous Goods Regulations
- HeliOffshore Safety Performance Model



ROLE SPECIFIC TRAINING

48. Role specific training – Helicopter Underwater Escape Training

48A. Purpose

Ensuring the occupants can escape in the event of a capsize or submersion.

48B. Expectations

Flight Crew are HUET trained.

48C. Processes and practices

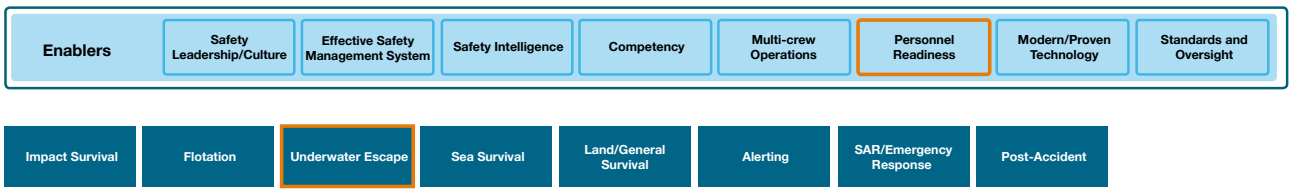
48C.1 Flight crew complete a Helicopter Underwater Escape Training (HUET) course to a recognized standard (e.g., OPITO) that includes the use of a Modular Egress Training Simulator (METS) at least every four years, unless local regulation requires greater frequency.

48C.2 In HUET devices the emergency exit types and sizes are representative of the aircraft flown in offshore operations.

48C.3 All HUET trained personnel or their companies maintain a documented record of the training completed.

Guidance documents

- OPITO Training Standard - Helicopter Underwater Escape Training (HUET) and Compressed Air Emergency Breathing System (CA-EBS).
- HeliOffshore Safety Performance Model.



ROLE SPECIFIC TRAINING

49. Role specific training – compressed air emergency breathing systems

49A. Purpose

Ensuring the occupants can escape in the event of a capsize or submersion.

49B. Expectations

Flight Crew are trained on the use of Compressed Air Emergency Breathing Systems (CA-EBS).

49C. Processes and practices

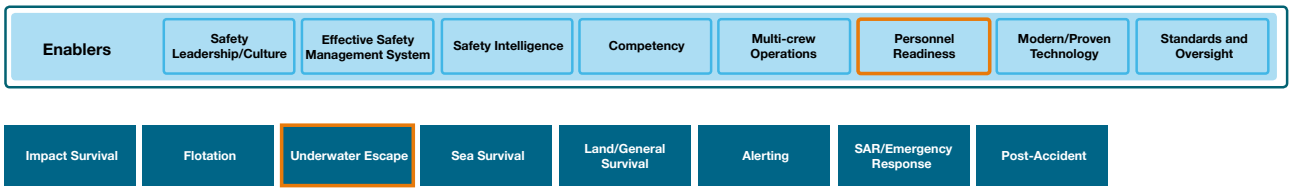
49C.1 HUET includes training in the use of the CA-EBS to develop and maintain user proficiency at least every four years, unless local regulation requires greater frequency.

49C.2 The CA-EBS is compatible with the lifejacket (and immersion suit, if required).

49C.3 An appropriate Maintenance Program (including pre-flight inspection) is in place for these items.

Guidance documents

- OPITO Training Standard - Helicopter Underwater Escape Training (HUET) with Compressed Air Emergency Breathing System (CA-EBS)
- EN4856:2018
- ETSO 2C519
- HeliOffshore Safety Performance Model



ROLE SPECIFIC TRAINING

50. Role specific training – helideck

50A. Purpose

Ensuring safety critical personnel are competent to fulfil their duties by having appropriate training, qualifications, knowledge, skills, and experience.

50B. Expectations

A programme for annual helideck training of flight crew is in place.

50C. Processes and practices

50C.1 An annual training programme includes as a minimum:

- 50C.1.1 Information on helideck design and markings, including the chevron, Touch Down/Positioning Markings (TD/PM), D value and t value, Limited Obstacle Sector (LOS), 1:5 falling gradient and Helideck Monitoring System (HMS).
- 50C.1.2 The significance of the alignment of the H with regard to the Obstacle Free Sector (OFS).
- 50C.1.3 The correct approach path.
- 50C.1.4 Correct use of the TD/PM circle and relative positioning to ensure clearance from obstacles and enable safe passenger movement on deck.

50C.2 In addition, there is a written syllabus for training of flight crew engaged in flights to small and medium size vessels while underway which includes:

- 50C.2.1 Differences in the location of the helideck (bow/stern/midships) and the effect this has on helideck movement.
- 50C.2.2 Differences in approach/departure procedures for vessels under way and the effect this has on relative wind and turbulence at the various helideck positions.

Guidance documents

- CAP 437
- HeliOffshore Safety Performance Model

ROLE SPECIFIC TRAINING

51. Role specific training – control guarding

51A. Purpose

Preventing injuries following an accidental flight control input while rotors running on the ground.

51B. Expectations

Flight controls are guarded during embarkation/disembarkation.

51C. Processes and practices

51C.1 When loading or unloading passengers from helicopters with rotors running, a member of the flight crew remains guarding the controls and only performs cockpit duties related to the identification of external hazards and passenger movement around the aircraft.

51C.2 Require and document that the Pilot Flying (PF) is to physically restrict the flight controls when the other pilot leaves or returns to his seat when the rotors are turning.

51C.3 Require and document that a pilot seat is occupied by a qualified person whenever an Auxiliary Power Unit (APU) is running, unless the Aircraft Flight Manual (AFM) allows for the APU to be run unattended.

Guidance documents

- HeliOffshore Safety Performance Model