PART690 Offshore Helicopters

Additional Compliance Criteria & Guidance Material

Shell Group Requirements for Aircraft Operations (SGRAO) Issue 02 Rev00

Document Revision Information

Version	Date	Amendment
1.0	20/09/2023	Initial Release

Contents

Introduction

SGRAO PART-690 is part of the SGRAO suite of documents and must be read in conjunction with:

SGRAO Implementation Guide

IOGP Report 690 Version 1.3 for "Offshore Helicopter Recommended Practices"

This document provides additional guidance and expectations on how the IOGP Report 690 Version 1.3 for "Offshore Helicopter Recommended Practices" (RP690) must be implemented by the Contracted Aircraft operators and Shell Businesses.

SGRAO PART-690 covers the operation of helicopters for offshore operations and is comprised of five modules:

1. Safety Management Systems,
2. Aircraft Operations,
3. Support Operations,
4. Engineering,
5. Helicopter and Equipment.

These modules are further divided into sections covering the main activities associated with the delivery of aviation services and within each section are technical elements. Each chapter in IOGP Report 690 is presented with a Title, Purpose, Expectations, Processes and Practices and Guidance documents. A 'responsible party' for each element is identified either as 'Company', meaning the entity which engages the services of an offshore helicopter operator, or 'Contractor' which may be the aircraft operator, vessel or rig operator, Aircraft Maintenance Organisation, or subcontracted parties (e.g., a provider of ground support services such as passenger check-in and processing).

List of Additional Compliance Criteria

Report	Chap	ACC	Description	ACC Threshold
690-2	9C.3	9ACC.1	Helicopter Performance Class	Shell requirements to meet 690-2, Section 9, MR9C.3 is a minimum of 15ft deck edge clearance, to avoid a Deck Edge Strike, and 35ft Sea Clearance, to avoid a forced landing, in the event of a critical power unit loss. • For definitions of performance classes, see Definitions in RP69x. • To ensure no exposure to deck edge strike or forced ditching while using PC2DLE, the exposure period is set at 0 seconds. • 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.
690-2	10C.2	10ACC.1	Crew - Personal Protective Equipment	Shell requirements to meet 690-2, Section 10, MR10C.2, are that immersion suits are to be worn, when the sea temperature is consistently at or below +15 °C for the predicted routes.
690-2	13B	13ACC.1	Medical Certification	Shell Requirements to meet 690-2, Section 13, MR13B, Medical Certification, are aligned with ICAO, these are: • Prohibit the use of pilots on Commercial Air Transport (CAT) helicopter operations who have reached 65 years of age. • Allow pilots that have attained the age of 60 years or have an operational multi-pilot limitation on their medical certificate, only to operate an aircraft with another pilot provided, when the other pilot is fully qualified and not also subject to an operational multi-pilot limitation; and the other pilot has not attained the age of 60 years.
690-2	13C.1	13ACC.2	Medical Certification	Shell requirement for 690-2, Section 13, MR13C.1: All pilots flying for the Company when over the age of 60, medicals include and electrocardiography at intervals not exceeding six months.
690-2	18C.1	18ACC.1	Flight Crew Fatigue Management - Flight Duty Times and Rest Periods	Shell requirements to meet 690-2, Section 18, MR18C.1, Flight Duty Periods (FDP), are maximum 12 Hour Flight Duty in a single Day, 84 hours in any 7 consecutive day period and 200 hours in any 28 consecutive day period.
690-2	18C.3	18ACC.2	Flight Crew Fatigue Management – Flight Duty Times and Rest Periods	Shell requirements to meet 690-2, Section 18, MR18C.3, Flight Crew • Do not work more than seven consecutive days between days off. • Have no less than two consecutive days off in 14 days. • Have at least eight days off in each consecutive five-week period averaged over three such periods.
690-3	6B	6ACC.1	Passenger - Personal Protective Equipment	Shell requirements to meet 690-3, Section 6, 6B, Passenger PPE, are that the relevant Shell Technical Authority — Air Transport, (TA/1) is to carry out a detailed SAR study, which includes an Overall Survival Equation and determination for the worst Credible Emergency Scenario and document an ALARP demonstration of exposure and sea temperatures. This study should be made available to the operator.

Report	Chap	ACC	Description	ACC Threshold
690-3	6B	6ACC.2	Passenger - Personal Protective Equipment	Shell requirements to meet 690-3, Section 6, MR6C.2, Passenger PPE, are that survival suits are to be worn when the sea temperature is consistently at or below +15 °C for the predicted routes.
690-5	2B	2ACC.1	Certification Standard	Shell requirements to meet 690-5, Section 2, 2B, are to only use helicopter types that have been assessed as acceptable by Shell Aircraft and are agreed with the relevant Shell Technical Authority - Air Transport (TA/1).
690-5	14B	14ACC.1	Seating Layout	Shell requirements to meet 690-2, Section 14, 2B, are that the Sikorsky S92A requires push out windows within the four, standard, cabin emergency exits — Sikorsky option No. 77005 to be installed, for full compliance.

Table 2; Additional Compliance Criteria

Guidance Material

Guidance Material (GM) is non-binding explanatory and interpretation material issued by Shell Aircraft which helps to illustrate the meaning of a requirement or specification in the IOGP Report 690 or the ACC. It contains information, including examples, historic context and considerations to assist the user in the interpretation and application.

IOGP R690 Bow-Tie Set

In addition to the GM a dedicated Bow-Tie Set is available, which has been developed by Shell Aircraft to provide understanding on how the barriers should work together. The set is based on the Heli-Offshore performance model and the IOGP Report 690 barriers.

Definitions & Acronyms

For definitions and acronyms used in the IOGP R690-series, IOGP R69X offers comprehensive explanation.

Variations

Variation means minor deviation to the mandatory requirements as defined in IOGP R690-series. Consult the SGRAO Implementation guide for more information.

TA2 variations are indicated in the split boxes in the Guidance section. These variations are locally managed and registered.

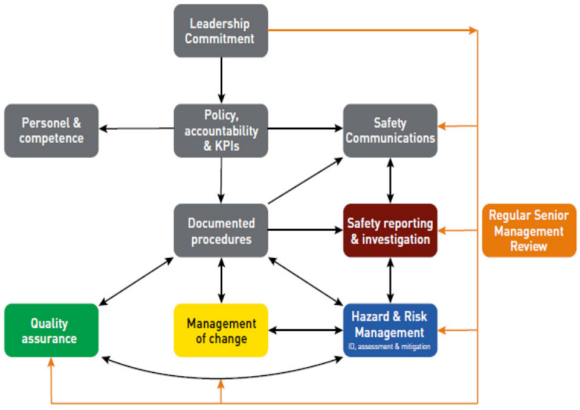
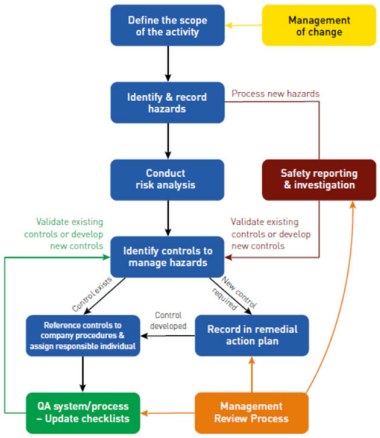
List of TA1 Variations

Report	Chap	Description	Variation Details
690-1	11	Continuous improvement - Assurance	The relevant Shell Technical Authority - Air Transport (TA/1), agrees 690-1, Section 11, 11C4.1 Relevant Contractors with the operator.
690-1	14	Line Operations Safety Audit	The relevant Shell Technical Authority - Air Transport (TA/1), can vary requirement 690-1, Section 14, MR14B, Implementation of a LOSA Program for Limited Exposure contracts if at the location no LOSA compliant operator is available.
690-2	7	Airborne Collision Avoidance Systems	The relevant Shell Technical Authority - Air Transport (TA/1), can vary requirement 690-2, Section 7, MR 7C.3. For Full details see 690-5, Helicopter and Equipment, Section 8, Helicopter and Equipment, Airborne Collision Avoidance Systems.
690-2	8	Helicopter Flight Data Monitoring	The relevant Shell Technical Authority - Air Transport (TA/1), is to review and agree, requirement 690-2, Section, 8, MR8C.1, Scope of Coverage, Event Sets and Documented Thresholds and the review details, are to be recorded.
690-2	9	Helicopter Performance Class	The relevant Shell Technical Authority — Air Transport (TA/1), can vary 690-2, Section 9, 9ACC.1, Deck Edge Clearance etc. after a detailed Risk Assessment has been completed and submitted to the TA/0 for acceptance.

Report	Chap	Description	Variation Details
690-2	11	Flight Crew - Experience and Qualification	The relevant Shell Technical Authority - Air Transport (TA/1) can vary requirement 690-2, Section 11, MR11C.1, for any instance where compliance with "Table 11-1: Progression-based program" occurs or it cannot be clearly demonstrated that operators can show an equivalent level of competence with the required step.
690-2	13	Medical Certification	The relevant Shell Technical Authority – Air Transport, (TA/1) can vary requirement 690-2, Section, 13, MR13B, Medical Certification, when there are locally allowed variances to the ICAO requirements, which Shell follows.
690-2	18	Flight Crew Fatigue Management - Flight Duty Times and Rest Periods	The relevant Shell Technical Authority - Air Transport, (TA/1) can vary 690-2, Section 18, 18ACC.1, Flight Duty Period (FDP), when a Fatigue Risk Management System (FRMS) is in place.
690-2	18	Flight Crew Fatigue Management - Flight Duty Times and Rest Periods	The relevant Shell Technical Authority - Air Transport, (TA/1) can vary 690-2, Section 18, 18ACC.2, for Flight Crew working a customized work schedule (14 days on/14 days off etc.) that have a (FRMS) system approved by the National Aviation Authority (NAA), which may allow deviation from the days off requirements.
690-2	21	Aviation weather - IFR/VFR	The relevant Shell Technical Authority - Air Transport, (TA/1) can apply the alleviation for Onshore IFR Alternates to requirement 690-2, Section 21, MR19C.2, IFR Planning, or helicopter flights to and from offshore locations.
690-2	28	Offshore alternates - Planning	The relevant Shell Technical Authority - Air Transport, (TA/1) can agree to requirement 690-2, Section 28, MR28C.1, Use of Offshore Alternates.
690-2	40	Recency Training Flights	The relevant Shell Technical Authority, (TA/1) can accept a risk assessment with appropriate mitigation presented by the operator to meet the requirements in, 690-2, Section 40, MR40C.1, Note 6.
690-2	44	Use of Flight Simulation Training Devices – General	The Shell Technical Authority - Air Transport, (TA/1), can agree to vary requirement 690-2, Section 44, MR44C.3, Simulator Specification, and the use of a simulator of the same type and series being flown with a lower certification/specification.
690-2	45	Introduction of New Aircraft Types	The relevant Shell Technical Authority – Air Transport, (TA/1), in agreement with TA/0, agrees to the introduction of any new type, to meet, 690-2, Section 45, 45C.1.
690-2	48	Role Specific Training – Helicopter Underwater Escape Training	The relevant Shell Technical Authority – Air Transport, (T/A1), can demonstrate and document equivalent to OPTIO standard to meet 690-2, Section 48, 48C.1.
690-2	49	Role Specific Training – Compressed Air Emergency Breathing Systems	The relevant Shell Technical Authority – Air Transport, (T/A1), can demonstrate and document equivalent to OPTIO standard to meet 690-2, Section 49, 49C.1.
690-3	18	Rotors Running Refueling	The relevant Shell Technical Authority - Air Transport, (TA/1), can approve requirement 690-3, Section 18, 18C.1, RRRF, after documented acceptance of a Rotors Running Refuel (RRRF) Risk Assessment.

Report	Chap	Description	Variation Details
690-4	4	Continuing Airworthiness - Maintenance Data	The relevant Shell Technical Authority - Air Transport, (TA/1), can require specific, company requested, Service Bulletins and Airworthiness Directives be complied with. to meet 690-4, Section 4, MR4B, Continuing Airworthiness - Maintenance Data.
690-4	11	Maintenance Management - Maintenance Records.	The relevant Shell Technical Authority – Air Transport, (TA/1), may vary 690-4, Section 11, MR11C.4, Staged Worksheets (SWS), for limited exposure contracts.
690-4	15	Maintenance Observation Programme	The relevant Shell Technical Authority – Air Transport, (TA/1), may vary requirement 690-4, Section 15, MR15B, Maintenance Observation Programme (MOP), for limited exposure contracts.
690-4	19	Maintenance Facilities - General	The relevant Shell Technical Authority (TA/1), may vary requirement 690-4, Section 19, MR19C.2, Component Workshops, for limited exposure contracts.
690-4	21	Aircraft Components/Material Management – Equipment and Tools	The relevant Shell Technical Authority – Air Transport, (TA/1), may vary 690-4, Section 21, MR21C.1, Company Owned Tooling, for limited exposure contracts, operations in remote locations, and small helicopter operators.
690-4	24	Maintenance - Aircraft Fuel Checks	The relevant Shell Technical Authority - Air Transport (TA/1), can vary 690-4, Section 24, 24.C.2, Daily Fuel Samples, for limited exposure contracts. To meet this alleviation, Fuel sample requirements are in place such that a comprehensive sample process is in place for the day of every Shell Flight.
690-4	25	Maintenance Personnel General Requirements – Fatigue Prevention	The relevant Shell Technical Authority – Air Transport (TA/1), can vary requirement 690-4, Section 25, MR25C.3, Days Off.
690-4	31	HUMS - Equipment	The relevant Shell Technical Authority — Air Transport (TA/1), may vary requirements 690-4, Section,31, MR31.B, 31C.2 and 31C.3, for Aftermarket Systems.
690-4	36	HUMS - Data Transfer	The relevant Shell Technical Authority - Air Transport (TA/1), may vary requirement 690-4, Section 36, MR36B, Data Transfer, if Inflight HUMS data transfer is available for the aircraft type and region.
690-5	8	Airborne Collision Avoidance Systems	The relevant Shell Technical Authority – Air Transport, (TA/1) may vary requirement 690-5, Section 8, MR8C.2, where operations are in low density air traffic areas and an agreed Risk Assessment is in place, for low exposure contracts.
690-5	12	Helicopter Cabin Push-out Windows	The relevant Shell Technical Authority – Air Transport, (TA/1), may vary 690-5, Section 12, MR12B, Sikorsky S92A push-out windows, for limited exposure contracts if no other compliant aircraft at location available.
690-5	15	Tail Camera	The relevant Shell Technical Authority – Air Transport, (TA/1) may vary requirement 690-5, Section 15, MR15B, Tail Camera for limited exposure contracts where no other compliant aircraft is available.
690-5	16	Cockpit Camera	The relevant Shell Technical Authority – Air Transport, (TA/1) may vary requirement 690-5, Section 16, MR16B, Cockpit Camera for low exposure contracts where no other compliant aircraft is available.

Table 3; List of TA1 variations

R690-1	Safety Management Systems
1	Safety Management Systems - General
MR	1B, 1C.1, 1C.2, 1C.3
	Guidance Material
1B	See 690-1B - An effective Safety Management System (SMS), appropriate to the size and complexity of the organisation is in place and for smaller organizations. The following is guidance on how SMS can be developed to meet this requirement: https://www.casa.gov.au/search-centre/safety-kits/resource-kit-develop-your-safety-management-system https://www.casa.gov.au/search-centre/safety-kits/resource-kit-develop-your-safety-management-system# https://vast.aero/Safety_Toolbox/SMS/2009_SMS_Toolkit_ed2_Final.pdf https://www.slideshare.net/IHSTFAA/ihst-sms-for-small-helicopter-fleets ALARP definition – see 7C.5.
1C.1	No Guidance.
1C.2	The SMS interlinks all of the elements listed in IOGP Report 690-1 – Safety Management, Figures 1, Overall MS and 2, Hazard Management, visualize this:  Figure 1 - Overall SMS  Figure 2 – Hazard Management
1C.3	An interface process can be controlled by contract, or separate documents and should only be applicable to sub-contractors that could be assessed as carrying risk on behalf of the company.
1ACC.1	None
1VAR.1	None

R690-1	Safety Management Systems
2	Management Commitment and Leadership
MR	2B, 2C.1, 2C.2, 2C.3, 2C.4
Guidance Material	
2B	The term "leaders" includes all management and supervisory positions in the organisation, including the chief executive and senior management team, middle management regional and base managers.
2C.1	Part of knowing the safety risks is engaging with sub-contractor management, local communities, and authorities. In addition, the operator should engage with Industry Associations, such a Heli-Offshore, Helicopter Safety Advisory Committee (HSAC), OEUK Aviation Technical Group (ATG), European Business Aviation Association (EBAA), National Business Aviation Association (NBAA), International Airborne Geophysics Safety Association (IAGSA) etc.
2C.2	A key element of leadership commitment is visible leadership, commonly demonstrated by leading by example, workplace and site visits. These should allow leaders to: • Get to know people working at the workplace and demonstrate care. • Talk about work activities that matter to people and embrace feedback. • Have a focus and purpose when engaging people; and, Focus on the behaviour of people during work site visits and recognise the right behaviours, including challenging business decisions
2C.3	Leaders should engage in conversations with personnel and asking authentic questions lets the workforce see the genuine interest and commitment of their leaders and allows the leaders to gain a better insight into their HSSE exposure..
2C.4	Leaders should strive to ensure that they receive regular feedback, and this means fostering an environment where feedback is actively sought on HSSE performance through open and honest conversations. It should be easier for people to provide feedback on a leader's HSSE behaviour if their leader has already established a feedback culture. Just Culture tools such as Baines Simmons FAIR Tool are used.
2ACC.1	None.
2VAR.1	None.

R690-1	Safety Management Systems	
3	Safety Accountabilities and Responsibilities	
MR	3B, 3C.1, 3C.2, 3C.3, 3C.4, 3C.5	
Guidance Material		
3B	No Guidance.	
3C.1	No Guidance.	
3C.2	The Accountable Executive should have full authority to ensure adequate staffing levels to provide the organisation with the capacity and capability to deliver all activities in line with the Policy, Objectives and Management Review	
3C.3	The Safety Manager should be a full-time employee although in a small non-complex organisation. They may also be the Compliance Monitoring/Quality Manager, but in such cases, there should be independent compliance monitoring of the SMS. The Safety Manager should be given appropriate status in the organisation to provide the necessary degree of authority when dealing with safety matters. They should: • Have defined competence requirements, sufficient resources, and safety structures to manage the implementation and maintenance of the SMS. • Act as the focal point and is responsible for the development, administration, maintenance, and promotion of the SMS; and, • Have direct access to the Accountable Executive.	
3C.4	Leaders should establish and maintain governance over the implementation of the SMS, by, where possible, defining the levels of management with authority to make decisions regarding safety risk tolerability, and they should ensure that the relevant department senior leader is involved with line leadership in decisions affecting safety management and performance.	
3C.5	No Guidance.	The relevant Shell Technical Authority - Air Transport (TA/1) is informed of the requirements in 690-2, 3C.5, Changes in Key Personnel. **This requirement is managed and recorded locally.**
3ACC.1	None.	
3VAR.1	None.	

R690-1	Safety Management Systems
4	Key Safety Personnel
MR	4B, 4C.1, 4C.2
Guidance Material	
4B	No Guidance.
4C.1	No Guidance.
4C.2	No Guidance.
4ACC.1	None.
4VAR.1	None.

R690-1	Safety Management Systems
5	Emergency Response Planning
MR	5B, 5C.1, 5C.2, 5C.3, 5C.3, 5C.4, 5C.5, 5C.6, 5C.7
Guidance Material	
5B	No Guidance.
5C.1	The ERP should contain: • Details of roles and responsibilities, including co-coordinators, Duty Managers etc. • List of Emergency Contacts, including Shell contract requirements. • Credible Scenarios are defined as: ○ A generalized detailed description of a hypothetical but credible incident. This is the result of an imagined sequence of events that could plausibly lead to an Incident requiring mitigation by emergency response. 5C.1 - The bridging process in this section, should meet the policy requirements in 690-1, 5C.7.
5C.2	No Guidance
5C.3	The Emergency Response Organisation should be able to demonstrate the required personnel levels to response to any Credible Emergency Scenarios.
5C.4	No Guidance.
5C.5	No Guidance.
5C.6	No Guidance.
5C.7	Contacts and contact requirements for local Shell Business Unit responsible managers, these should be defined in the contract, or similar formal document. The bridging process can be a contract, side letter, or a formal bridging document. 5C.7 - The bridging process in this section, should cover the policy requirements in 690-1, 5C.1.
5ACC.1	None.
5VAR.1	None.

R690-1	Safety Management Systems
6	SMS Documentation
MR	6B, 6C.1
Guidance Material	
6B	No Guidance.
6C.1	The documented procedures should be appropriate to the size, nature, and complexity of the company. SMS records, for example hazard logs, risk assessments, safety cases, meeting minutes should be included in the company records and document management process. Safety critical activities related to aircraft operations can be listed in the SMS manual or listed in other manuals or expositions and should be linked.
6ACC.1	None.
6VAR.1	None.

R690-1	Safety Management Systems
7	Safety Risk Assessment and Hazard Identification
MR	7B, 7C.1, 7C.2, 7C.3, 7C.4, 7C.5, 7C.6, 7C.7, 7C.8, 7C.9
Guidance Material	
7B	No Guidance.
7C.1	Previous versions of SGARO used Hazard and Effects Management Processes, (HEMP), 690 uses Hazard Risk Management, which is equivalent.
7C.2	Hazards should be identified using internal resources such as staff reviews, external resources such as accident and incident reports, environmental influences, geography etc.
7C.3	A Worst-Case Credible Scenario are defined as "An Event that could realistically occur and that has the worst outcome from release of a Hazard if the Controls fail".
7C.4	The Risk Assessment process should be used to compare the severity and likelihood of a hazard being released and information. Instruction, training, and supervision should be provided so that people are competent to apply the Risk Assessment Matrix (RAM). A Hazards and Effects Register is defined as *"A list of the Hazards that are associated with an activity, together with their potential Effects and assessed Risk".*
7C.5	ALARP could be defined as "The point at which the cost (in time, money and effort) of further Risk reduction is grossly disproportionate to the Risk reduction achieved"; and, Reasonably Practicable is defined as "In the context of Managing Risk achievable without a gross disproportion between the cost (in time, money and effort) and the benefit".
7C.6	Low risk, hazards may not be tracked in the Formal Risk Assessments. Hazards assessed as Medium risk, should eliminate or substitute the hazards where Reasonably Practicable, or identify and implement controls and recovery measures to manage the risks to ALARP. Hazards assessed as High risk, should have a Bowtie or equivalent analysis method applied, to demonstrate ALARP.
7C.7	See Incident Reporting, Investigation and Learning – Section 8
7C.8	The Remedial Action Plan (RAP) should be tied to the Documented Demonstration of ALARP process in 7C.5, and a RAP could be defined as "A plan to implement corrective action items".
7C.9	The HRM review process should contain a monitoring and verification process or method, which is tied to the company assurance process that validates the effectiveness of the controls and recovery measures. See also 690-1, 11C.5.
7ACC.1	None.
7VAR.1	None.

R690-1	Safety Management Systems	
8	Incident reporting, investigation, and learning	
MR	8B, 8C.1, 8C.2, 8C.3, 8C.4, 8C.5	
Guidance Material		
8B	No Guidance.	
8C.1	No Guidance.	
8C.2	Though often of a minor nature, reports can be indicative of a potential hazard or trend that will only be recognised through systematic investigation and data analysis.	
8C.3	Confirm Shell contacts and reporting lines are up to date.	
8C.4	The Risk Assessment Matrix (RAM), or process, should include the effects on People, Assets, Community, Environment (PACE), and be consistent throughout the company.	
8C.5	The scope of an internal safety investigations should be of a scale suitable to determine why an event occurred and validate or identify the underlying hazards and should take place as soon as possible after the event. The HFACS framework provides a tool to assist in the investigation process and target training and prevention efforts.	8C.5.4 - The relevant Shell Technical Authority - Air Transport (TA/1) and/or TA/0, can request involvement in investigations, to meet the requirements in 690-2, 8C.5, Joint Investigations, where possible. **<u>This requirement is managed and recorded locally.</u>**
8C.6	This element should be integrated such that it supports the effectiveness of the Safety Risk Management and Management Review processes as described in 690-1, Safety Management Systems - General	
8C.7	The investigation process should contain a monitoring and verification process or method, which is tied to the HRM process, that validates the effectiveness of the controls and recovery measures.	
8C.8	Personnel should have confidence in the Just Culture and the reporting system. They should know that confidentiality will be maintained and that the information they submit will be acted upon, otherwise they may decide that there is no benefit in their reporting. Just Culture process such as Baines Simmons FAiR®3 System, and tools should be used.	
8C.9	No Guidance.	
8ACC.1	None.	
8VAR.1	None.	

R690-1	Safety Management Systems
9	Safety Performance Monitoring
MR	9B, 9C.1
Guidance Material	
9B	No Guidance.
9C.1	Safety Performance Indicators (SPI) are developed and maintained appropriate to the size, nature, and complexity of the organisation and should typically, monitor data from various sources. SPIs should support the effectiveness of management review
9ACC.1	None.
9VAR.1	None.

R690-1	Safety Management Systems
10	Management of Change
MR	10B, 10C.1, 10C.2
Guidance Material	
10B	A documented Management of Change (MO process should be initiated, when appropriate, typically, for the following: • Significant personnel and organisational changes. • Introduction of a new base. • Introduction of a new aircraft type.
10C.1	An individual should manage each MOC process, and they should designate who is approved to sign off the change as completed.
10C.2	No Guidance.
10ACC.1	None.
10VAR.1	None.

R690-1	Safety Management Systems
11	Continuous Improvement - Assurance
MR	11B, 11C.1, 11C.2, 11C.3, 11C.4, 11C.5, 11C.6, 11C.7
Guidance Material	
11B	The system may also be called Compliance Monitoring, and some companies also use Quality Control processes as part of the system. These should be described in applicable manuals, which cover departmental procedures, duties, responsibilities, and reporting relationships.
11C.1	No Guidance.
11C.2	No Guidance.
11C.3	No Guidance.
11C.4	The programme of audits should monitor compliance with the operator's published manuals, as listed in 11C.4.1. In addition, any Shell additional items or contract requirements should also be covered. The company assurance process should contain a monitoring and verification process or method, which is tied to the Hazard Risk Management review process that validates the effectiveness of the controls and recovery measures. 11C4.1 – Contractors to be assessed against 69x are agreed with the relevant Shell Technical Authority - Air Transport (TA/1), See 14VAR.1
11C.5	The company assurance process that validates the effectiveness of the controls and recovery measures developed in the Hazard Risk Management. See 690-1, 7C.9.
11C.6	The records/data management system is appropriate to the size and complexity of the company.
11C.7	No Guidance.
11ACC.1	None.
11VAR.1	The relevant Shell Technical Authority - Air Transport (TA/1), agrees 11C4.1 Relevant Contractors with the operator.

R690-1	Safety Management Systems
12	Training, Competence, and Education
MR	12B, 12C.1, 12C.2, 12C.3, 12C.4
Guidance Material	
12B	No Guidance.
12C.1	No Guidance.
12C.2	No Guidance.
12C.3	No Guidance.
12C.4	Training should cover duties within the SMS and should consider everyone's level of involvement in the SMS and training records should record the assessment and relevant training, including the result.
12ACC.1	None.
12VAR.1	None.

R690-1	Safety Management Systems
13	Safety Communication
MR	13B, 13C.1, 13C.2, 13C.3, 13C.4, 13C.5, 13C.6
Guidance Material	
13B	No Guidance.

13C.1	The Safety Commitment and Policy Documents policy documents, typically should:
	• ICAO Guidance:
	  ○ The safety policy be developed and endorsed by senior management and is to be signed by the accountable executive.
	  ○ Seek to create an environment where safety management can be effective.
	  ○ Set out senior management's commitment to safety.
	  ○ Commit the allocation of resources. for the implementation of the safety policy.
	• Actively encouraging effective reporting by defining a Just Culture, see 690-8, 8C.8.
	• The Safety Commitment and Policy Documents should be communicated and be readily available to staff, e.g. By highlighting them in training and posting them at appropriate locations.
	• The safety policy should be reviewed at appropriate intervals, to ensure it remains relevant and appropriate to the company.

13C.2	The range of safety promotion and communication processes should. • Explain why particular safety actions are taken. • Explain why safety procedures are introduced or changed. • Seek feedback on safety issues or actions.
13C.3	The formal meetings could be appropriate safety committees. However, under the ICAO definitions of these meetings departmental Safety meetings are typically the Safety Action Group (SAG). It should be comprised of managers, supervisors and personnel from operational areas, and membership of the SAG and frequency of meetings should be defined. Dependent on the size of the organisation, separate meeting for each department may be required.
13C.4	The Accountable Executive Meeting under the ICAO definitions may be established as the Safety Review Board (SRB) and in small organisations, the SAG and SRB could be combined. The SRB should consist of Senior Leaders and the Accountable Manager or equivalent, should attend.
13C.5	Safety critical information can also be disseminated and conveyed, by, Presentations, Safety Notices, Websites and e-mails, and workplace meetings between staff and the accountable executive or senior managers.
13C.6	The read and acknowledge process could be digital or physical.
13ACC.1	None.
13VAR.1	None.

R690-1	Safety Management Systems
14	Line Operations Safety Audit
MR	14B, 14C.1, 14C.2, 14C.3, 14C.4, 14C.5, 14C.6, 14C.7, 14C.8
Guidance Material	
14B	LOSA requirement can be varied with agreement of the relevant Shell Technical Authority - Air Transport (TA/1), See 14VAR.1
14C.1	No Guidance.
14C.2	All LOSA programmes should be based upon an anonymous, confidential, and non-punitive approach, as highlighted in the ICAO and FAA Guidance and an appropriate feedback process to pilots is in place.
14C.3	No Guidance.
14C.4	Observation flights use specially trained observers. Observation flights are conducted on normal, routine, flights. A representative sample of company flights is carried out.
14C.5	No Guidance.
14C.6	No Guidance.
14C.7	The relevant Shell Technical Authority - Air Transport (TA/1) should secure seating capacity for a specific period for the observer to successfully complete the required LOSA flights: • Preference is that the LOSA program is shared at a base over multiple customers if possible. Operators should liaise on conducting LOSA flights in aircraft not equipped with jump seats and observers should be considered part of the flight crew
14C.8	No Guidance.
14ACC.1	None.
14VAR.1	The relevant Shell Technical Authority - Air Transport (TA/1), can vary requirement MR14B, Implementation of a LOSA Programme for Limited Exposure contracts if at the location no LOSA compliant operator is available.

R690-1	Safety Management Systems
15	Environmental management
MR	15B, 15C.1, 15C.2
Guidance Material	
15B	Environmental Management System (EMS) should align with ISO 14001.
15C.1	No Guidance.
15C.2	No Guidance.
15ACC.1	None.
15VAR.1	None.

R690-2	Aircraft Operations
1	Air Operator Certificate
MR	1B, 1C.1, 1C.2, 1C.3
Guidance Material	
1B	No Guidance.
1C.1	No Guidance.
1C.2	The hierarchy of manuals may be issued in separate parts corresponding to specific aspects of an operation. It should include the instructions and information necessary to enable the personnel concerned to perform their duties and all controlled documents should be read and understood by new employees and by all employees when amended.
1C.3	Some NAA's do not require "official NAA approval/nominations" for the operator management team, in all circumstances the aircraft operator should be able to demonstrate that it has sufficient competent management staff.
1ACC.1	None.
1VAR.1	None.

R690-2	Aircraft Operations
2	Management of Personnel
MR	2B, 2C.1, 2C.2, 2C.3
Guidance Material	
2B	No Guidance.
2C.1	No Guidance.
2C.2	No Guidance.
2C.3	No Guidance.
2ACC.1	None.
2VAR.1	None.

R690-2	Aircraft Operations
3	Operations in the Vicinity of Windfarms
MR	3B, 3C.1, 3C.2, 3C.3, 3C.4
Guidance Material	
3B	No Guidance.
3C.1	No Guidance.
3C.2	No Guidance.
3C.3	No Guidance.
3C.4	No Guidance.
3ACC.1	None.
3VAR.1	None.

R690-2	Aircraft Operations
4	Drug and Alcohol Policy
MR	4B, 4C.1, 4C.2, 4C.3, 4C.4
Guidance Material	
4B	For local/contract requirements, refer to relevant Shell Technical Authority - Air Transport (TA/1). This should apply to all staff involved in aircraft operations.
4C.1	Refer to Shell local/contract requirements.
4C.2	No Guidance.
4C.2	No Guidance.
4C.4	No Guidance.
4ACC.1	None.
4VAR.1	None.

R690-2	Aircraft Operations
5	Automation
MR	5B, 5C.1, 5C.2, 5C.3, 5C.4, 5C.5, 5C.6, 5C.7
Guidance Material	
5B	No Guidance.
5C.1	The procedures should describe the use of an appropriate level of automation for the task, including manual flying and the policy should include monitoring of the AFCS/Flight Management Systems (FMS) by: • Cross-checking the mode selection and the status, • Then observing the result of any change; and, • Supervising the resulting guidance and aircraft performance.
5C.2	No Guidance.
5C.3	No Guidance.
5C.4	No Guidance.
5C.5	No Guidance.
5C.6	Guarding the controls should be defined as "having the hands and feet resting near the cyclic, collective and pedals".
5C.7	No Guidance.
5ACC.1	None.
5VAR.1	None.

R690-2	Aircraft Operations
6	Helicopter Terrain Awareness Warning Systems
MR	6B, 6C.1, 6C.2, 6C.3, 6C.4
Guidance Material	
6B	No Guidance.
6C.1	No Guidance.
6C.2	No Guidance.
6C.3	No Guidance.
6C.4	No Guidance.
6ACC.1	None.
6VAR.1	None.

R690-2	Aircraft Operations
7	Airborne Collision Avoidance Systems
MR	7B, 7C.1, 7C.2, 7C.3
Guidance Material	
7B	No Guidance.
7C.1	The operator guidance should be part of an overarching collision avoidance policy that should details: • Crew should be required to maintain control and an effective lookout whilst one crew member is engaged in tasks inside the cockpit. • Specification of what TCAS mode is to be used, and, • When Traffic Alert (TA) ONLY (TCAS1) mode can be used.
7C.2	No Guidance.
7C.3	See 7 VAR.1.
7ACC.1	None.
7VAR.1	The relevant Shell Technical Authority - Air Transport (TA/1), can vary requirement MR 7C.3. For Full details see 690-5, Helicopter and Equipment, Section 8, Helicopter and Equipment, Airborne Collision Avoidance Systems.

R690-2	Aircraft Operations
8	Helicopter Flight Data Monitoring
MR	8B, 8C.1, 8C.2, 8C.3, 8C.4, 8C.5, 8C.6, 8C.7, 8C.8, 8C.9
Guidance Material	
8B	No Guidance.
8C.1	See 8VARACC.1.
8C.2	Training and competence of the FDM personnel should be tracked in an appropriate system and functional positions required for an Aircraft Operator FDM system are appropriate to the size of the operator. The person with overall responsibility for managing the FDM programme and the person responsible for FDM data analysis, should be able to demonstrate their competence, as defined in the competence requirements documented for the position.
8C.3	Data download requirements should cater for aircraft operating from remote bases, a means of downloading and transmitting the data daily is established.
8C.4	Flight crew contact should include. • A process for crews to request the analysis of specific flights or events. • For events assessed as operational risk, the more comprehensive process could use the software flight playback capability. • A contact process for crew conducting operations from bases where face-to-face briefing with pilot liaison personnel may not be possible.
8C.5	Communication of FDM data complies with the operator's confidentiality agreement, regular FDM reports, summarizing event activity within the organisation and highlighting learnings from the analysis, should be produced.
8C.6	No Guidance.
8C.7	No Guidance.
8C.8	No Guidance.
8C.9	No Guidance.
8ACC.1	None
8VAR.1	The relevant Shell Technical Authority - Air Transport (TA/1), is to review and agree, requirement MR8C.1, Scope of Coverage, Event Sets and Documented Thresholds and the review details, are to be recorded.

R690-2	Aircraft Operations
9	Helicopter Performance Class
MR	9B, 9C.1, 9C.2, 9C.3, 9.4
Guidance Material	
9B	No Guidance.
9C.1	No Guidance.
9C.2	No Guidance.
9C.3	See 9ACC.1 and 9VAR.1.
9C.4	See 9ACC.1 and 9VAR.1.
9ACC.1	Shell requirements to meet MR9C.3 is a minimum of 15ft deck edge clearance, to avoid a Deck Edge Strike, and 35ft Sea Clearance, to avoid a forced landing, in the event of a critical power unit loss. • For definitions of performance classes, see Definitions in RP69x. • To ensure no exposure to deck edge strike or forced ditching while using PC2DLE, the exposure period is set at 0 seconds. • 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.
9VAR.1	The relevant Shell Technical Authority — Air Transport (TA/1), can vary 9ACC.1 after a detailed Risk Assessment has been completed and submitted to the TA/0 for acceptance.

R690-2	Aircraft Operations	
10	Crew - Personal Protective Equipment	
MR	10B, 10C.1, 10C.2	
Guidance Material		
10B	No Guidance.	
10C.1	No Guidance.	
10C.2	See 10ACC.1 This is aligned 690-3, Section 6. A detailed SAR study, which includes an Overall Survival Equation and determination for the worst Credible Emergency Scenario, has been carried out, a documented ALARP – see 690-3 6ACC.1.	The relevant Shell Technical Authority - Air Transport (TA/1) can vary the requirement on when immersion suits in summer, high ambient cockpit temperatures etc. **<u>This variation is recorded and tracked locally.</u>**
10ACC.1	Shell requirements to meet MR10C.2, immersion suits are to be worn, when the sea temperature is consistently at or below +15 °C for the predicted routes.	
10VAR.1	None.	

R690-2	Aircraft Operations
11	Flight Crew - Experience and Qualification
MR	11B, 11C.1, 11C.2
Guidance Material	
11B	The changes in this requirement should be subject to a Management of Change within the operator, if a similar competence-based process has not been applied previously.
11C.1	This requirement should not be applied to pilots recruited before 01-01-2024.
11C.2	As this is a new requirement, it will take some time for operators to implement this section in full content. Air Operators should be able to comply with this requirement as of 01-07-2024.
11ACC.1	None.
11VAR.1	The relevant Shell Technical Authority - Air Transport (TA/1) can vary requirement MR11C.1, for any instance where compliance with "Table 11-1: "Progression-based programme" occurs or it cannot be clearly demonstrated that operators can show an equivalent level of competence with the required step.

R690-2	Aircraft Operations
12	Flight Crew Experience - Pilot in Command Under Supervision Flight Time
MR	12B, 12C.1, 12C.2
Guidance Material	
12B	No Guidance.
12C.1	No Guidance.
12C.2	No Guidance.
12ACC.1	None
12ACC.1	None.

R690-2	Aircraft Operations
13	Medical Certification
MR	13B, 13C.1
Guidance Material	
13B	International Civil Aviation Organization, (ICAO): November 2014 Amendment 172 to Annex 1 — Personnel Licensing became applicable, concerning the upper age limit for pilots engaged in international commercial air transport operations, as follows: • Limitation of privileges of pilots who have attained their 60th birthday and curtailment of privileges of pilots who have attained their 65th birthday. • A Contracting State, having issued pilot licenses, shall not permit the holders thereof to act as pilot of an aircraft engaged in international commercial air transport operations if the license holders have attained their 60th birthday or, in the case of operations with more than one pilot, their 65th birthday. • The Standard limits the privileges for pilots in single-pilot commercial air transport operations to 60 years of age, while extending that limit to 65 years of age for multi-pilot operations. This applies to operations conducted in all categories of manned aircraft and is valid for all pilot positions designated by an operator.
13C.1	ICAO specifies an annual medical assessment for those under 60 years who are engaged in two-pilot operations but when over 60, a six-monthly medical assessment is necessary.
13ACC.1	Shell Requirements to meet MR13B, Medical Certification, are aligned with ICAO, these are: • Prohibit the use of pilots on Commercial Air Transport (CAT) helicopter operations who have reached 65 years of age. • Allow pilots that have attained the age of 60 years or have an operational multi-pilot limitation on their medical certificate, only to operate an aircraft with another pilot provided, when the other pilot is fully qualified and not also subject to an operational multi-pilot limitation; and the other pilot has not attained the age of 60 years.
13ACC.2	Shell requirement to meet MR13C.1: All pilots flying for the Company when over the age of 60, medicals include and electrocardiography at intervals not exceeding six months
13VAR.1	The relevant Shell Technical Authority – Air Transport, (TA/1) can vary requirement MR13B, Medical Certification, when there are locally allowed variances to the ICAO requirements, which Shell follows.

R690-2	Aircraft Operations
14	Use of Subcontracted Pilots
MR	14B, 14C.1, 14C.2
Guidance Material	
14B	No Guidance.
14C.1	No Guidance.
14C.2	Subcontracted pilots should inform the aircraft operator of all their flight and duty times regardless of where these were accrued, other operator, private flying etc.
14ACC.1	None.
14VAR.1	None.

R690-2	Aircraft Operations
15	Pilots Flying More Than One Aircraft Type
MR	15B, 15C.1, 15C.2, 5C.3, 15C.4, 15C.5
Guidance Material	
15B	Type is defined as either: • An entry on the pilot's licence that allows them to act as pilot on the type of aircraft specified in the rating; or, • A specific manufacturer's type or variant, in those countries where some aircraft types are not required to be specified on the pilot's licence
15C.1	No Guidance.
15C.2	No Guidance.
15C.3	No Guidance.
15C.4	No Guidance.
15C.5	No Guidance.
15ACC.1	None.
15VAR.1	None.

R690-2	Aircraft Operations
16	Composition of Flight Crew
MR	16B, 16C.1, 16C.2
Guidance Material	
16B	No Guidance.
16C.1	No Guidance.
16C.2	No Guidance.
16ACC.1	None.
16VAR.1	None.

R690-2	Aircraft Operations
17	Flight Crew Fatigue Management - Flight Time Limits
MR	17B, 17C.1, 17C.2
Guidance Material	
17B	Flight Time Limits should be documented along with a process to record, track and prevent exceedance. See 18ACC.2 for Duty Periods.
17C.1	No Guidance.
17C.2	A daily record should be maintained of each Crew member's flying hours showing the cumulative totals for the past periods of 24 hours, 7 days, 28 days, and per year.
17ACC.1	None.
17VAR.1	None.

R690-2	Aircraft Operations
18	Flight Crew Fatigue Management - Flight Duty Times and Rest Periods
MR	18B, 18C.1, 18C.2, 18C.3, 18C.4, 18C.5, 18C.6 & 18ACC.1
Guidance Material	
18B	No Guidance.
18C.1	See 18ACC.1 and 18VAR.1- Maximum Shell FDP is 12 Hours in a single day.
18C.2	A daily record should be maintained for each Crew member's FDP showing the cumulative totals for the past periods of 7, 14, and 28 days, and this should not exceed the following FDP cumulative limits detailed in the operations manual.
18C.3	The operations manuals should define each Crew member's FDP permitted cumulative totals.
18C.4	No Guidance.
18C.5	No Guidance.
18C.6	No Guidance.
18ACC.1	Shell requirements to meet MR18C.1: Flight Duty Periods (FDP) are: • A Maximum 12 Hour Flight Duty in a single Day • 84 hours in any 7 consecutive day period • 200 hours in any 28 consecutive day period.
18ACC.2	Shell requirements to meet MR18C.3, Flight Crew are: • Do not work more than seven consecutive days between days off. • Have no less than two consecutive days off in 14 days. • Have at least eight days off in each consecutive five-week period averaged over three such periods.
18VAR.1	The relevant Shell Technical Authority - Air Transport, (TA/1) can vary 18 ACC.1, Flight Duty Period (FDP), when a Fatigue Risk Management System (FRMS) is in place.
18VAR.2	The relevant Shell Technical Authority - Air Transport, (TA/1) can vary 18 ACC.2, for Flight Crew working a customised work schedule (14 days on/14 days off etc.) that have a (FRMS) system approved by the National Aviation Authority (NAA), which may allow deviation from the days off requirements.

R690-2	Aircraft Operations
19	Flight Crew Fatigue Management - Rest for Rotating Crews
MR	19B, 19C.1, 19C.2
Guidance Material	
19B	No Guidance.
19C.1	No Guidance.
19C.2	See 18ACC.2, and 18VAR.2:
19ACC.1	None.
19VAR.1	None.

R690-2	Aircraft Operations
20	Flight Crew Fatigue Management - Night Standby Duty
MR	20B, 20C.1, 20C.2
Guidance Material	
20B	No Guidance.
20C.1	No Guidance.
20C.2	No Guidance.
20ACC.1	None.
20VAR.1	None.

R690-2	Aircraft Operations
21	Aviation weather - IFR/VFR
MR	21B, 21C.1, 21C.2, 21C.3, 21C.4 & 21ACC.1
Guidance Material	
21B	No Guidance
21C.1	For VFR flight planning, the weather should indicate that meteorological conditions along the route, departure point, and arrival destination are above local VFR weather minima. For MR21C.1, to meet Shell requirements the following alleviation for Onshore IFR Alternates, can apply, with agreement from the relevant Shell Technical Authority - Air Transport, (TA/1): IFR helicopter flights from offshore locations to an onshore destination, no alternate is required, provided, the following criteria are met: • The destination aerodrome has a published instrument approach. • The flight time is less than three hours; and • The published weather forecast valid from 1-hour prior, and 1-hour after the expected landing time specifies that the cloud base is at least 700 feet above the minima associated with the instrument approach, or 1000 feet above the destination aerodrome, whichever is the higher and visibility is at least 2500 meters.
21C.2	See 21ACC.1 and 21VAR.1
21C.3	No Guidance.

21C.3 Table 21.1	**Note 1 – Day VFR Limit Visibility is incorrect – 5000M is the correct figure.**
	Guidance from ICAO on Low Visibility Flights:
	• When so prescribed by the appropriate ATS (NAA) authority:
	  ○ Flight visibilities reduced to not less than 1 500 m may be permitted for flights operating:
	  ▪ At speeds that, in the prevailing visibility, will give adequate opportunity to observe other traffic or any obstacles in time to avoid collision; or
	  ▪ In circumstances in which the probability of encounters with other traffic would normally be low, e.g., in areas of low volume traffic and for aerial work at low levels.
	• HELICOPTERS may be permitted to operate in less than 1500 m flight visibility, if maneuvered at a speed that will give adequate opportunity to observe other traffic or any obstacles in time to avoid collision.

21C.4	No Guidance.
21ACC.1	None.
21VAR.1	The relevant Shell Technical Authority - Air Transport, (TA/1) can apply the alleviation for Onshore IFR Alternates to requirement MR19C.2, IFR Planning, or helicopter flights to and from offshore locations.

R690-2	Aircraft Operations
22	Aviation Weather - Adverse weather policy
MR	22B, 22C.1, 22C.2, 22C.3, 22C.4
Guidance Material	
22B	No Guidance.
22C.1	No Guidance.
22C.2	No Guidance.
22C.3	No Guidance.
22C.4	No Guidance.
22ACC.1	None.
22VAR.1	None.

R690-2	Aircraft Operations
23	Helidecks - Helideck Landing Limits
MR	23B, 23C.1, 23C.2
Guidance Material	
23B	No Guidance.
23C.1	No Guidance.
23C.2	No Guidance.
23ACC.1	None.
23VAR.1	None.

R690-2	Aircraft Operations
24	Helidecks - Measurement of Helideck Motion
MR	24B, 24C.1, 24C.2, 24C.3, 24C.4
Guidance Material	
24B	No Guidance.
24C.1	No Guidance.
24C.2	No Guidance.
24C.3	The operator should consider guidance on start and shutdown limit according to RFM, QRH, etc. for helideck operations.
24C.4.	No Guidance.
24ACC.1	None.
24VAR.1	None.

R690-2	Aircraft Operations
25	Helidecks - Significant Changes in Helideck Conditions
MR	25B, 25C.1
Guidance Material	
25B	No Guidance.
25C.1.	The helicopter crew should be notified immediately by radio if there is any other abnormal event, loss of Dynamic Positioning etc.
25ACC.1	None.
25VAR.1	None.

R690-2	Aircraft Operations
26	Flight Planning
MR	26B, 26C.1
Guidance Material	
26B	No Guidance.
26C.1.	Enroute contingencies and subsequent diversion planning, should also be considered. **26C.1.5 – Guidance Note in 690 text is incorrect, listed a Note 5, guidance is Note 4**.
26ACC.1	None.
26VAR.1	None.

R690-2	Aircraft Operations
27	Fuel Planning
MR	27B, 27C.1, 27C.2
Guidance Material	
27B	All flights should consider: • Extra fuel, at the discretion of the Pilot-in-Command (PIC) to cover deviations from planned operations. • Additional fuel should the aircraft operator's fuel policy includes planning to an isolated aerodrome.
27C.1	Guidance on terms for IFR Flights: ***27C1.1: Fuel used during start-up and taxi "Taxi Fuel";*** Typically, this should be total amount of fuel expected to be used for start-up and taxi including allowances for operation of ancillary equipment, local conditions at departure site, ice protection systems and APU if applicable, and any foreseeable delays prior to take-off. ***27C1.2: Fuel required for the route to the first point of intended landing "Trip Fuel";*** Typically flight to the intended destination including take-off, climb, cruise, descent, approach, and landing, considering departure and arrival routings, meteorological conditions and foreseeable delays due to air traffic routing or other situations. ***27C.1.4: Fuel required for the route to onshore alternate heliport or approved offshore alternate helideck "Alternate Fuel";*** Typically Fuel for missed approach from the applicable MDA/DA at destination aerodrome to the missed approach altitude and transit to alternate, including climb, cruise, descent and approach and landing at the alternate, considering departure and arrival routings. ***27C.1.5: Contingency Fuel - Typically represents 10% of the trip fuel;*** Final Reserve Fuel - Fuel should be sufficient to hold for of 30 minutes at holding speed at 1500ft above the destination in ISA calculated with the estimated landing mass on arrival above the destination or the alternate destination. Any additional/discretionary fuel should be based on the rules of the State of the operator but typically 5% of the planned trip fuel should be considered, this could be following a risk assessment based on an analysis of low fuel incidents in the operating area.
27C.2	Any additional/discretionary fuel should be based on the rules of the State of the operator but typically 5% of the planned trip fuel should be considered, this could be following a risk assessment based on an analysis of low fuel incidents in the operating area.
27ACC.1	None.
27VAR.1	None.

R690-2	Aircraft Operations
28	Offshore alternates - Planning
MR	28B, 28C.1
Guidance Material	
28B	If the offshore alternate is mobile, the operator should determine additional barriers to ensure position accuracy and appropriate deck movement limits to manage the risk that deck movement will not be out of limits.
28C.1	28C.1.1 - Procedures should include calculation and application of minimum approach speeds based on arrival weight and conditions. 28C.1.3 - To address the event of an engine failure beyond the PNR the Aircraft Operator should establish and document procedures for offshore OEI landings and include these procedures in initial and recurrent pilot training. 28C.1.4 - To the extent possible, the availability of the offshore alternate should be guaranteed by the duty holder (the operator in the case of fixed installations and the owner in the case of mobiles) until landing at the destination, or the offshore alternate, has been achieved (or until offshore shuttling has been completed), and the use of offshore helidecks by multiple aircraft should be coordinated to ensure they are available when needed.
28ACC.1	None.
28VAR.1	The relevant Shell Technical Authority - Air Transport, (TA/1) can agree to requirement MR28C.1, Use of Offshore Alternates.

R690-2	Aircraft Operations
29	Offshore alternates - Execution
MR	29B, 29C.1
Guidance Material	
29B	No Guidance.
29C.1	See 28VAR.1.
29ACC.1	None.
29VAR.1	No Guidance.

R690-2	Aircraft Operations
30	Flight Procedures – General
MR	30B, 30C.1, 30C.2, 30C.3, 30C.4, 30C.5
Guidance Material	
30B	No Guidance.
30C.1	No Guidance.
30C.2	Threat and Error Management (TEM) is central to contemporary CRM and could be considered as "defensive flying". It equips a pilot with skills and behavior to recognize and avoid problems which, if ignored or left unattended, could result in an undesired aircraft state, and possibly lead to an incident or accident. TEM proposes that threats, errors, and even undesired aircraft states (such as an altitude deviation) are everyday occurrences that pilots must manage to maintain safety. TEM stresses three basic concepts to manage threats and errors – anticipation, recognition, and recovery. Many of the best practices advocated by CRM can be considered threat and error management countermeasures. However, to take full effect, TEM needs to be not only defined as a framework, but also fully integrated in an operator's procedures, training and checking. While TEM has been predominantly in use with Air Traffic Control and Flight Operations, the concept can have equal value in other areas, such as engineering, ground operations, etc.
30C.3	No Guidance.
30C.4	No Guidance.
30C.5	No Guidance.
30ACC.1	None.
30VAR.1	None.

R690-2	Aircraft Operations
31	Flight Procedures – Sterile Cockpit
MR	31B, 31C.1, 31C.2
Guidance Material	
31B	No Guidance.
31C.1	The sterile or focused cockpit policy should also include: • Intra-cockpit communication protocols during critical phases of flight. • Altitude and level changes, and initiation of changes in route clearances until the new routing is confirmed and established. • Restriction of activities to essential operational matters during critical phases of flight, which should include: ○ All ground operations. ○ Take-off until the departure phase is considered complete. ○ Approach and landing from when the approach and landing phase commence; and, ○ The Aircraft Operator should document the commencement and conclusion of the phases described above.
31C.2	No Guidance.
31ACC.1	None.
31VAR.1	None.

R690-2	Aircraft Operations
32	Flight procedures – Helicopter Stabilized Approaches
MR	32B, 32C.1, 32C.2, 32C.3, 32C.4, 32C.5, 32C.6, 32C.7, 32C.8
Guidance Material	
32B	No Guidance.
32C.1	Landings should only be made from a stabilized approach.
32C.2	• Operator should document deviations from the Heli-Offshore Flightpath management RP. • Typically approaches should be stabilized by 1000 feet above approach minima on an IFR approach; and on a VFR approach should be no later than 500 feet above the landing site elevation. (Heli-Offshore Flightpath Management Recommended Practices, Annex B - Recommended guidance points on stabilized approaches)
32C.3	No Guidance.
32C.4	No Guidance.
32C.5	Crews should brief specifically what the helicopter configuration is to be and by when, and to be clear of what is expected of the crew if those targets are not met. This could be considered a gate prior to a stabilized approach gate on an instrument approach.
32C.6	• Instrument approaches such as ILS, LPV, LNAV/VNAV and LOC/VOR should be flown within half a dot of the glideslope and/or localizer (or course deviation indicator). (Heli-Offshore Flightpath Management Recommended Practices, Annex B - Recommended guidance points on approaches). • A circling approach may require a special briefing, in any instance the bank angle should not exceed 20°, and the helicopter should be wings level on final by no later than 200 feet above airport elevation. (Heli-Offshore Flightpath Management Recommended Practices, Annex B - Recommended guidance points on stabilized approaches).
32C.7	No Guidance.
32C.8	FDM should be used to validate the stabilized approach procedures, including the identification of any specific risks in the conduct of the flight procedures.
32ACC.1	None.
32VAR.1	None.

R690-2	Aircraft Operations
33	Flight Procedures – Assessment of Wrong Deck Landing Risk
MR	33B, 33C.1, 33C.2, 33C.3
Guidance Material	
33B	There should be requirement to report a wrong-deck landing via the Air Operator's event reporting system to the helideck owner/operator and client including circumstances and learnings from the event.
33C.1	No Guidance.
33C.2	The procedures to apply, in case of a wrong deck landing has occurred, should include the communications and preparations for a subsequent safe departure.
33C.3	No Guidance.
32ACC.1	None.
33VAR.1	None.

R690-2	Aircraft Operations
34	Pre-Flight and Post-Flight Procedures
MR	34B, 34C.1, 34C.2, 34C.3, 34C.4
Guidance Material	
34B	No Guidance.
34C.1	No Guidance.
34C.2	No Guidance.
34C.3	No Guidance.
34C.4	No Guidance.
34ACC.1	None.
34VAR.1	None.

R690-2	Aircraft Operations
35	Flight Following
MR	35B, 35C.1, 35C.2, 35C.3, 35C.4
Guidance Material	
35B	No Guidance.
35C.1	Effective Air Traffic Control (ATC) surveillance services can vary by country and region. The operator should be able to provide evidence that the system is effective.
35C.2	No Guidance.
35C.3	Dedicated trained, personnel should be available to monitor and intervene when Satellite Flight Following System (SFFS) polling is interrupted (loss of reports) or if SFFS distress modes are activated. All relevant personnel should be trained and competent. **See 690-5, Section 18, Flight Following for equipment fit requirements.**
35C.4	No Guidance.
35ACC.1	None.
35VAR.1	None.

R690-2	Aircraft Operations
36	Specific Offshore Installation Operations
MR	36B, 36C.1, 36C.2
Guidance Material	
36B	The helicopter operator should have procedures to approve all helidecks.
36C.1	No Guidance.
36C.2	No Guidance.
36ACC.1	None.
36VAR.1	None.

R690-2	Aircraft Operations
37	Bird Strike Avoidance
MR	37B, 37C.1, 37C.2, 37C.3, 37C.4
Guidance Material	
37B	No Guidance.
37C.1	Transit levels should be at the highest practicable altitudes above the areas identified along the aircraft routing, except during take-off and landing. As part a Risk Assessment, any bird migration in the operating area should be published in the relevant National Aeronautical Publication (AIP) section should be addressed.
37C.2	Where a Bird Strike risk is identified the mitigations could include: • Use of CS/FAR Part 29 Helicopters fully compliant with Amendment 45, Para 29.631. • Airspeed could be reduced to below 100kts • Pulsed landing lights, where available, are switched on when transiting risk areas. • If helicopters are not Part 29 etc., pilots should wear safety glasses for all flights in multi-crew operations, unless wearing helmets with visors down. • Replacement windscreens should be supplied by the Original Equipment Manufacturer (OEM). Windscreens that have not demonstrated compliance with the original certification requirements should not be used, regardless of whether an approved Supplemental Type Certificate (STC) is in place; and, • Where is not practically achievable, e.g., for operations operating in a heavily regulated radar or congested terminal environments, the inclusion of bird hazards in an airport categorisation, risk, and threat assessment process maybe an acceptable means of compliance.
37C.3	No Guidance.
37C.4	No Guidance.
37ACC.1	None.
37VAR.1	None.

R690-2	Aircraft Operations	
38	Cabin Area Cargo	
MR	38B, 38C.1, 38C.2, 38C.3	
Guidance Material		
38B	See 38ACC.1.	
38C.1	No Guidance.	
38C.3	No Guidance.	
38C.3	No Guidance.	The relevant Shell Air Technical Authority - Air Transport, (TA/1) approve any cargo carried in the cabin in accordance with NAA requirements. **This variation is managed and recorded locally.**
38ACC.1	None.	
38VAR.1	None.	

R690-2	Aircraft Operations
39	Flight Crew Training – Records and Programmes
MR	39B, 39C.1
Guidance Material	
39B	No Guidance.
39C.1	Training records should demonstrate structured courses, competencies to be achieved and the associated checking process.
39ACC.1	None.
39VAR.1	None.

R690-2	Aircraft Operations	
40	Flight Crew Recency	
MR	40B, 40C.1	
Guidance Material		
40B	This section may not be used in isolation, all other sections of 690 referring to Crew Experience and Scheduling should be compliant	
40C.1 Note 1.	No Guidance.	To meet Note 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 relevant Shell Technical Authority, (TA/1) is to be notified each time a recency flight was required. **This is requirement managed and recorded locally.**
40C.1 Note 6.	To meet 690-2, 40C.1, Note 6: The recency training flights, or line checks as mentioned in note 1, 2 and 3, of 690-40, 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 and accepted by, the relevant Shell Technical Authority, (TA/1). See 40VAR.1	
40ACC.1	None.	
40VAR.1	The relevant Shell Technical Authority, (TA/1) can accept a risk assessment with appropriate mitigation presented by the operator to meet the requirements in, 690-2, 40C.1, Note 6.	

R690-2	Aircraft Operations
41	Flight Crew Training – Recurrent Training and Maintenance Check Flights
MR	41B, 41C.1, 41C.2, 41C.3, 41C.4
Guidance Material	
41B	No Guidance.
41C.1	No Guidance.
41C.2	No Guidance.
41C.3	No Guidance.
41C.4	No Guidance.
41ACC.1	None.
41VAR.1	None.

R690-2	Aircraft Operations
42	Rostering Flight Crew
MR	42B, 42C.1
Guidance Material	
42B	No Guidance.
42C.1	No Guidance.
42ACC.1	None.
42VAR.1	None.

R690-2	Aircraft Operations
43	Use of Flight Simulation Training Devices – General
MR	43B, 43C.1, 43C.2, 43C.3, 43C.4
Guidance Material	
43B	No Guidance.
43C.1	43C.1.11 - The operator should specify what is training is done in each seat during simulator sessions.
43C.2	No Guidance.
43C.3	No Guidance.
43C.4	Significant differences covering cockpit design and autopilots, minor equipment differences should be briefed during training and a training standardisation process should verify that training facilities, devices and course materials reflect the configuration of the aircraft for which the training is being provided.
43ACC.1	None.
43VAR.1	None.

R690-2	Aircraft Operations
44	Use of Flight Simulation Training Devices – devices
MR	44B, 44C.1, 44C.2, 44C.3
Guidance Material	
44B	No Guidance.
44C.1	See 44VAR.1.
44C.2	No Guidance.
44C.3	The use of a simulator of the same type and series being flown with a lower certification/specification as described in 44C.1, is used if agreed by the relevant Shell Technical Authority - Air Transport, (TA/1). See 44VAR.1.
44ACC.1	None.
44VAR.1	The Shell Technical Authority - Air Transport, (TA/1), can agree to vary requirement MR44C.3, Simulator Specification, and the use of a simulator of the same type and series being flown with a lower certification/specification.

R690-2	Aircraft Operations
45	Introduction of New Aircraft Types
MR	45B, 45C.1, 45C.2
Guidance Material	
45B	No Guidance.
45C.1	Introduction into service programme agreed with the relevant Shell Technical Authority – Air Transport (TA/1), see 45VAR.1
45C.2	No Guidance.
45ACC.1	None.
45VAR.1	The relevant Shell Technical Authority – Air Transport, (TA/1), in agreement with TA/0, agrees to the introduction of any new type.

R690-2	Aircraft Operations
46	Other Training - Crew Resource Management
MR	46B, 46C.1, 46C.2, 46C.3, 46C.4, 46C.5, 46C.6, 46C.7, 46C.8, 46C.9, 46C.10, 46C.11
Guidance Material	
46B	No Guidance.
46C.1	No Guidance.
46C.2	No Guidance.
46C.3	No Guidance.
46C.4	No Guidance.
46C.5	No Guidance.
46C.6	No Guidance.
46C.7	No Guidance.
46C.8	No Guidance.
46C.9	No Guidance.
46C.10	No Guidance.
46C.11	No Guidance.
46ACC.1	None.
46VAR.1	None.

R690-2	Aircraft Operations
47	Other Training - Dangerous Goods Training
MR	47B, 47C.1
Guidance Material	
47B	No Guidance.
47C.1	No Guidance.
47ACC.1	None.
47VAR.1	None.

R690-2	Aircraft Operations
48	Role Specific Training – Helicopter Underwater Escape Training
MR	48B, 48C.1, 48C.2, 48C.3
Guidance Material	
48B	No Guidance.
48C.1	Training providers should be certified to OPITO, or a demonstrated equivalent standard, via an assessment carried out by relevant Shell Technical Authority – Air Transport, (T/A1). An assessment should be carried out against the latest OPTIO requirements. See also 690-3, 11C.1 – same (T/A1) requirements apply. See 48VAR.1
48C.2	The OPITO requirements detail suitable Modular Egress Training Simulator (METS). The HUET trainer should meet the following minimum requirements: • In regions where only one type of helicopter is flown, the dimensions of the interior of the simulator should be representative of the interior of the cabin. • Ideally the simulator should replicate the cabins of the commonly used offshore helicopter types. • The cabin and cockpit sections should be fitted with seats and harnesses that are representative of the aircraft flown in offshore operations. • The force required to remove a push-out window should also be representative of the type of push-out window used. • The roll rate of the simulator should be representative of the roll rate of the actual helicopter such that the trainee is introduced to the feeling of disorientation associated with being turned upside down during the in-rush of water; and, • Where possible the emergency egress lighting fitted to the helicopter emergency exits should also be fitted to the HUET simulator.
48C.3	No Guidance.
48ACC.1	None.
48VAR.1	The relevant Shell Technical Authority – Air Transport, (T/A1), can demonstrate and document equivalent to OPTIO standard to meet 690-2, 48C.1.

R690-2	Aircraft Operations
49	Role Specific Training – Compressed Air Emergency Breathing Systems
MR	49B, 49C.1, 49C.2, 49C.3
Guidance Material	
49B	No Guidance.
49C.1	Training providers should be certified to OPITO, or a demonstrated equivalent standard, via an assessment carried out by relevant Shell Technical Authority – Air Transport, (T/A1). See also 690-3, 12C.1 – same T/A1 requirements apply. See 48VAR.1
49C.2	No Guidance.
49C.3	No Guidance.
49ACC.1	None.
49VAR.1	The relevant Shell Technical Authority – Air Transport, (T/A1), can demonstrate and document equivalent to OPTIO standard to meet 690-2, 49C.1.

R690-2	Aircraft Operations
50	Role Specific Training – Helideck
MR	50B, 50C.1, 50C.2
Guidance Material	
50B	The helicopter operator should have a procedure to approve helidecks it uses.
50C.1	• Guidance should be provided on manoeuvring, ground taxing on helidecks, and this should include the use of any helideck parking areas that may be available. • When repositioning to clear the tail rotor of the helicopter from access points or to align the aircraft for passenger/cargo loading or refuelling should normally be conducted in the hover, using the TD/PM circle as a manoeuvre reference, and observing any crosswind limitations. • The training should also cover other markings that are specific to the region and local requirements in place and be recorded in an appropriate system.
50C.2	No Guidance.
50ACC.1	None.
50VAR.1	None.

R690-2	Aircraft Operations
51	Role specific training – control guarding
MR	51B, 51C.1, 51C.2
Guidance Material	
51B	No Guidance.
51C.1	No Guidance.
51C.2	No Guidance.
51ACC.1	None.
51VAR.1	None.

R690-3	Support Operations
1	Passenger Check-In
MR	1B, 1C.1
Guidance Material	
1B	No Guidance.
1C.1	No Guidance.
1ACC.1	None.
1VAR.1	None.

R690-3	Support Operations
2	Offshore Passenger Holding Areas
MR	2B, 2C.1
Guidance Material	
2B	No Guidance.
2C.1	No Guidance.
2ACC.1	None.
2VAR.1	None.

R690-3	Support Operations
3	Alcohol and Drugs
MR	3B, 3C.1, 3C.1
Guidance Material	
3B	No Guidance.
3C.1	No Guidance.
3C.2	No Guidance.
3ACC.1	None.
3VAR.1	None.

R690-3	Support Operations
4	Passenger and Baggage Weights
MR	4B, 4C.1, 4C.2
Guidance Material	
4B	No Guidance.
4C.1	No Guidance.
4C.2	No Guidance
4ACC.1	None.
4VAR.1	None.

R690-3	Support Operations
5	Passenger Handling
MR	5B, 5C.1, 5C.2, 5C.3, 5C.4 & 5ACC.1
Guidance Material	
5B	See also 690-5, Section 12, Helicopter Cabin Push-out Windows, R690-5 12VAR.1 and R690-5 12ACC.1.
5C.1	Airbus H175 allows, two Normal Pax, plus an "Extra Broad" - XBR, or four Normal Pax to escape out the front two push windows. These meet the requirements of SPA.HOFO. 165 (H), (C, 2), which in an exit can accommodate "two ellipses" (equivalent to two normal pax). This has been accepted as compliant. See also 690-5, Section 12, Helicopter Cabin Push-out Windows.
5C.2	No Guidance.
5C.3	No Guidance.
5C.4	No Guidance.
5ACC.1	None.
5VAR.1	None.

R690-3	Support Operations
6	Passenger - Personal Protective Equipment
MR	6B, 6C.1, 6C.2, 6C.3, 6C.4 & 6ACC.1
Guidance Material	
6B	The relevant Shell Technical Authority — Air Transport, (TA/1) is to carry out a detailed SAR study, see 6ACC1.
6C.1	CA EBS should meet the requirements of European Technical Standard Order ETSO-2C519.
6C.2	Shell requirements are for survival suits to be worn when the sea temperature is consistently at or below +15 °C for the predicted routes. Consideration should also be given to wearing immersion suits when the expected rescue time (for all survivors), even in tropical conditions, in sea temperatures of +15°C and above for the predicted routes, exceeds the expected survival time. Suits with additional extra insulation or a suitable Thermal Insulating Garment (TIG) or thermal liners should be worn in addition to the immersion by flight crew and passengers when the sea temperature is consistently at or below +10° for the predicted routes. See 6ACC.1, and 6ACC.2.
6C.3	Three layers of clothing, one long sleeved, are generally worn when travelling offshore. Individual Businesses should provide detailed advice, based on current temperatures in the location. This can in the form of flyers, posters at check in or information can be displayed in the heliport and passenger briefing rooms, etc.
6C.4	No Guidance.
6ACC.1	Shell requirements to meet 690-3, Section 6, 6B, Passenger PPE, are that the relevant Shell Technical Authority — Air Transport, (TA/1) is to carry out a detailed SAR study, which includes an Overall Survival Equation and determination for the worst Credible Emergency Scenario and document an ALARP demonstration of exposure and sea temperatures. This study should be made available to the operator
6ACC.2	Shell requirements to meet MR6C.2, Passenger PPE, are that survival suits are to be worn when the sea temperature is consistently at or below +15 °C for the predicted routes.
6VAR.1	None.

R690-3	Support Operations
7	Passenger Briefing
MR	7B, 7C.1, 7C.2, 7C.3, 7C.4, 7C.5, 7C.6, 7C.7
Guidance Material	
7B	No Guidance.
7C.1	No Guidance.
7C.2	No Guidance.
7C.3	The safety briefing for the type aircraft to be flown should be given prior to the passenger's first flight of the day even if this is less than 24 hours since the last briefing.
7C.4	No Guidance.
7C.5	No Guidance.
7C.6	7C.6.6 Proper use of seat belts should be included in the passenger briefing in addition to when they must be worn. 7C.6.7 Where Personal Electronic Devices are allowed to be carried, guidance on their use and stowage should be included. 7C.6.14 The recognized brace position for helicopters is based on Transport Canada, FAA, EASA research and has been confirmed by UK CAA Safety Research Committee, and Helicopter OEM.
7C.7	No Guidance.
7ACC.1	None.
7VAR.1	None.

R690-3	Support Operations
8	Cargo - Weighing and Documentation
MR	8B, 8C.1, 8C.2, 8C.3
Guidance Material	
8B	No Guidance.
8C.1	No Guidance.
8C.2	No Guidance.
8C.3	No Guidance.
8ACC.1	None.
8VAR.1	None.

R690-3	Support Operations
9	Cargo – Dangerous goods
MR	9B, 9C.1, 9C.2, 9C.3, 9C.4
Guidance Material	
9B	No Guidance.
9C.1	No Guidance.
9C.4	No Guidance.
9C.4	No Guidance.
9C.4	No Guidance.
9ACC.1	None.
9VAR.1	None.

R690-3	Support Operations
10	Manifests
MR	10B, 10C.1, 10C.2, 10C.3, 10C.4
Guidance Material	
10B	No Guidance.
10C.1	Manifests should also list: • Date of Flight. • Destination. • Authorized Dangerous Goods/Hazardous Materials.
10C.2	Pilots and/or designated personnel should check actual passenger names against the original booking to verify that only authorized passengers are carried.
10C.3	No Guidance.
10C.4	No Guidance.
10ACC.1	None.
10VAR.1	None.

R690-3	Support Operations	
11	Passenger Training – Helicopter Underwater Escape Training	
MR	11B, 11C.1, 11C.2, 11C.3, 11C.4	
Guidance Material		
11B	No Guidance.	
11C.1	Non-HUET trained passengers travelling with a waiver should be identified visually such and they are should not be seated between an emergency exit and a passenger in date for HUET training.	The relevant Shell Technical Authority (TA/1) can vary the requirement for HUET, for Government Officials, Law Enforcement officers, VIPs, and Specialists, who do not normally travel offshore, but not for Shell Staff or Regular Contractors. Shell Staff and Contractors, who's HUET has expired, and it has not been possible to reschedule training, may also be allowed to travel if permitted by local procedures. **This variation is managed and recorded locally.**
		The relevant Shell Technical Authority (TA/1) can review and accept Training Certificates from other Countries, that have an equivalence to local requirements. **This variation is managed and recorded locally.**
11C.2	No Guidance.	
11C.3	The OPITO requirements detail suitable METS. Passengers HUET Training providers should be certified to OPITO or a demonstrated equivalent standard – see 690-2, Operations, 48C.1 and 48VAR.1.	
11C.3	No Guidance.	
11C.4	No Guidance.	
11ACC.1	None.	
11VAR.1	None.	

R690-3	Support Operations
12	Passenger Training – Compressed Air Emergency Breathing System
MR	12B, 12C.1, 12C.2, 12C.3
Guidance Material	
12B	No Guidance.
12C.1	Training providers should be certified to OPITO or a demonstrated equivalent standard. Should the provider not be certified to OPITO, to demonstrate equivalence assessment should be carried out against the latest OPTIO requirements – see 690-2, Operations, 49C.1 and 49VAR.1.
12C.3	No Guidance.
12C.3	No Guidance.
12C.3	No Guidance.
12ACC.1	None.
12VAR.1	None.

R690-3	Support Operations
13	Helideck Management – General
MR	13B, 13C.1, 13C.2
Guidance Material	
13B	No Guidance.
13C.1	No Guidance.
13C.2	No Guidance.
13ACC.1	None.
13VAR.1	None.

R690-3	Support Operations
14	Helideck – Reporting
MR	14B, 14C.1
Guidance Material	
14B	Also covered by UK CAA CAP437, HSAC RP and other regulators.
14C.1	No Guidance.
14C.2	No Guidance.
14C.3	Helicopter Operators should have a process to approve Helidecks.
14C.4	No Guidance.
14ACC.1	None.
14VAR.1	None.

R690-3	Support Operations
15	Crane Operations
MR	15B, 15C.1, 15C.2, 15C.3
Guidance Material	
15B	Also covered by UK CAA CAP437, HSAC RP, and other regulatory requirements.
15C.1	Local requirements around crane operations should be documented and agreed with the air operator,
15C.3	No Guidance.
15C.3	No Guidance.
15ACC.1	None.
15VAR.1	None.

R690-3	Support Operations
16	Helideck - Staff training
MR	16B, 16C.1, 16C.2, 16C.3
Guidance Material	
16B	Also covered by UK CAA CAP437, HSAC RP, and other regulatory requirements.
16C.1	No Guidance.
16C.3	No Guidance.
16C.3	No Guidance.
16ACC.1	None.
16VAR.1	None.

R690-3	Support Operations
17	Helideck - passenger control
MR	17B, 17C.1
Guidance Material	
17B	Also covered by UK CAA CAP437, HSAC RP and other regulatory guidance.
17C.1	No Guidance.
17ACC.1	None.
17VAR.1	None.

R690-3	Support Operations
18	Rotors Running Refueling
MR	18B, 18C.1, 18C.2, 18C.3
Guidance Material	
18B	No Guidance.
18C.1	Documented Rotors Running Refueling (RRRF) procedures, which should include both onshore and offshore refueling, should: • Where available, a 'closed loop' system, in which fuel vapor is not expelled from the refueling point, should be used. • RRRF using a gravity system, should only be used on aircraft unable to accept pressure refueling. • The use of pressure (closed system) refueling where such equipment and facilities are available should be required. • The use of fuel delivery nozzles which can be fixed open through ratchets or equivalent devices should be prohibited. • All staff involved in RRRF to be trained and competent. • Detail the control and containment of any potential fuel spillage. • A secondary exit should be clear when RRRF with passengers embarking, on board, or disembarking. A formal risk assessment is to be completed by air operator for RRRF and accepted by the relevant Shell Technical Authority – Air Transport, (T/A1). See 18VAR.1
18C.2	No Guidance.
18C.3	No Guidance.
18ACC.1	None.
18VAR.1	The relevant Shell Technical Authority - Air Transport, (TA/1), can approve requirement 18C.1, Rotors Running Refueling (RRRF), after documented acceptance of a RRRF Risk Assessment.

R690-3	Support Operations
19	Ground Operations Staff – Training and Competence
MR	19B, 19C.1, 19C.2, 19C.3, 19C.4, 19C.5, 19C.6
Guidance Material	
19B	No Guidance.
19C.1	No Guidance.
19C.2	No Guidance.
19C.3	No Guidance.
19C.4	No Guidance.
19C.5	No Guidance.
19C.6	No Guidance.
19ACC.1	None.
19VAR.1	None

R690-4	Engineering
1	Basic Principles
MR	1B, 1C.1, 1C.2, 1C.3, 1C.4, 1C.5
Guidance Material	
1B	No Guidance.
1C.1	No Guidance.
1C.2	No Guidance.
1C.3	The AMO should provide the relevant or detailed maintenance records of all performed maintenance to the operator. The maintenance records belong to the aircraft and the operator; not the AMO. See 690-4, 6C.6. Contractual requirements should be specified in a separate document that details the activities and obligations of the contractor in the performance of the activity. Quality Assurance/Compliance processes should cover all the activities defined in the MCM or equivalent document including contracted services: Short-term tasks (e.g., an aircraft repair, a Non-Destructive Test (NDT) inspection or an aircraft weighing), an appropriate level of oversight should be performed. The processes should determine that the contractor is suitably approved and has the required certification for the task. The safety and general HSSE expectations of the contractor should be addressed by the operator
1C.4	The operator should be responsible for providing the AMP to the AMO. The AMO does not own or control the AMP.
1C.5	No Guidance.
1ACC.1	None.
1VAR.1	None.

R690-4	Engineering
2	Continuing Airworthiness - Management
MR	2B, 2C.1, 2C.2, 2C.3, 2C.4, 2C.5, 2C.6, 2C.7. 2C.8, 2C.9, 2C.10, 2C.11
Guidance Material	
2B	The operators should employ in-house, or contract, competent personnel to manage the Continuing Airworthiness (CA) function. The CA process should be commensurate with the size and complexity of the operation.
2C.1	AMP is approved by NAA where applicable and should be type-specific and should include the OEM minimum requirements.
2C.2	Subscriptions with OEMs, or similar processes, to receive revisions to all technical data and information related to the maintenance of the aircraft or its components should be in place.
2C.3	No Guidance.
2C.4	MEL should be NAA approved. If no MEL is in place, all defects should be cleared before flight. See 2C.5.
2C.5	See Section 6, Continuing Airworthiness – Aircraft Maintenance Records. See 2C.4.
2C.6	See Section 10, Maintenance Management – Maintenance Planning.
2C.7	No Guidance.
2C.8	See 690-4, 6C.7. 8.
2C.9	See Section 6, Continuing Airworthiness – Aircraft Maintenance Records.
2C.10	A system of control should be in place, which allows only parts, meeting the aircraft maintenance programme, to be fitted to company operated aircraft by the AMO.
2C.11	The documented continuing airworthiness and maintenance procedures within an operator may be known as the Maintenance Management Manual, (MMM), Continuing Airworthiness Manual (CAM) or the Maintenance Control Manual (MCM) and contained within the MMM/CAM/MCM may be the processes which produce the AMP.
2ACC.1	None.
2VAR.1	None.

R690-4	Engineering
3	Continuing Airworthiness - Approved Maintenance Programme
MR	3B, 3C.1, 3C.2, 3C.3
Guidance Material	
3B	Management of the Approved Maintenance Programme (AMP) could be in-house or contracted to a Continuing Airworthiness Management Organisation (CAMO).
3C.1	None.
3C.2	None.
3C.3	There should be documented procedures for the review interval and data criteria for the AMP effectiveness review.
3ACC.1	None.
3VAR.1	None.

R690-4	Engineering
4	Continuing Airworthiness - Maintenance Data
MR	4B, 4C.1, 4C.2, 4C.3, 4C.4, 4C.5, 4C.6
Guidance Material	
4B	The relevant Shell Technical Authority, (T/A1) can require specific, company requested, Service Bulletins and Airworthiness Directives be complied with. See 4VAR.1
4C.1	Compliance with Airworthiness Directives (AD), Alert Service Bulletins (ASB), Service Bulletins (SB) and other similar requirements, should include the implementation of any actions that are considered necessary and within the specified timescale.
4C.2	A documented review process, or similar, for all incoming directives and bulletins should be maintained.
4C.3	Decisions on SB that the company chooses not to embody should be tracked. An SB is mandatory when accompanied by an AD.
4C.4	This compliance list should also indicate the most current revision of the relevant AD, ASB, SB, etc., regardless of whether any physical action is required.
4C.5	No Guidance.
4C.6	No Guidance.
4ACC.1	None.
4VAR.1	The relevant Shell Technical Authority - Air Transport, (TA/1), can require specific, company requested, Service Bulletins and Airworthiness Directives be complied with. to meet 690-4, 4B, Continuing Airworthiness - Maintenance Data.

R690-4	Engineering
5	Continuing airworthiness – minimum equipment list/minimum departure standard
MR	5B, 5C.1, 5C.2, 5C.3, 5C.4, 5C.5
Guidance Material	
5B	If no MEL is in place, then all systems must be serviceable for flight. See 690-5, Helicopter and Equipment, Section 1, Equipment Serviceability.
5C.1	No Guidance
5C.2	A Non-Essential Furnishings (NEF) list, or Configuration Deviation List (CDL) may also be separate documents.
5C.3	No Guidance
5C.4	No Guidance
5C.5	All recurring defects should be recorded, and the relevant maintenance organisation should monitor and manage these.
5ACC.1	None.
5VAR.1	None.

R690-4	Engineering
6	Continuing airworthiness – aircraft maintenance records
MR	6B, 6C.1, 6C.2, 6C.3, 6C.4, 6C.5, 6C.6 6C.7, 6C.8
Guidance Material	
6B	Sufficient competent staff should be employed to maintain the record-keeping process. Staff numbers and records should be appropriate to the size and complexity of the company. See also 690-4, 2C.11 Procedures are developed to be included in a manual approved by the NAA, to identify the numbers, duties and responsibilities, qualifications and competence of the staff employed.
6C.1	Airworthiness Review Certificates (ARC), if applicable, may be issued, using appropriate processes.
6C.2	No Guidance
6C.3	No Guidance
6C.4	No Guidance
6C.5	No Guidance
6C.6	The system should show the receipt and management of all completed maintenance paperwork including work orders, work packages, aircraft technical log entries and component serviceability data and should allow an auditable record. Records may be maintained and kept by a subcontracted organisation on behalf of the Continuing Airworthiness Management Organisation (CAMO), which remains the owner of these documents. See 690-4, 1C.1.
6C.7	Internal Quality Control (QC) procedures should review that all records of performed maintenance from the Aircraft Maintenance Organisation (AMO) are complete and the aircraft is appropriately released to service. See 690-4, 2C.8 and 8C.8.
6C.8	No Guidance.
6ACC.1	None.
6VAR.1	None.

R690-4	Engineering
7	Continuing airworthiness – reliability programme
MR	7B, 7C.1, 7C.2, 7C.3
Guidance Material	
7B	Reliability Programmes as detailed, should be in place for large offshore helicopter operators. Small offshore helicopter operators may monitor reliability by a simple Excel spreadsheet, and this should be a "fit for purpose" process.
7C.1	As above.
7C.2	For small offshore helicopter operators, this information may not be required, asked for, or acted upon, by the OEM/TC/STC holder and it is not practical to track it.
7C.3	As above.
7ACC.1	None.
7VAR.1	None.

R690-4	Engineering
8	Continuing airworthiness – workplace
MR	8B, 8C.1, 8C.2
Guidance Material	
8B	No Guidance.
8C.1	No Guidance.
8C.2	See also 690-4, 6C.7.
8ACC.1	None.
8VAR.1	None.

R690-4	Engineering
9	Maintenance Management - Aircraft Maintenance Organization Procedures
MR	9B, 9C.1, 9C.2, 9C.3
Guidance Material	
9B	No Guidance
9C.1	The manual could also be called a Company Maintenance Manual (CMM) and the contents are generally defined by the local NAA.
9C.2	See 690-1, Section 11. Continuous Improvement – Assurance. The company assurance programme should cover all contracted services and that the surveillance of the contracted maintenance should be appropriate for the scale and scope of work.
9C.3	Contracted Maintenance could cover: Lifejackets; NDT; Aircraft weighing; Aircraft Painting; Large maintenance checks; HUMS. See also 690-4, 1C.3.
9ACC.1	None.
9VAR.1	None.

R690-4	Engineering
10	Maintenance Management - Maintenance Planning
MR	10B, 10C.1, 10C.2
Guidance Material	
10B	Processes are appropriate to the size and complexity of the company.
10C.1	No Guidance.
10C.2	See also 690-4, 1C.4.
10ACC.1	None.
10VAR.1	None.

R690-4	Engineering
11	Maintenance Management - Maintenance Records
MR	11B, 11C.1, 11C.2, 11C.3, 11C.4, 11C.5, 11C.6, 11C.7, 11C.8, 11C.9
Guidance Material	
11B	Retention and transfer of the records should be such that, when required, the status of the aircraft and its components can be readily established.
11C.1	Work cards, worksheets, etc. should contain and make clear references to the maintenance data required for the task(s) and should be protected against unauthorised alteration
11C.2	No Guidance.
11C.3	Maintenance records should also clearly identify any Independent Inspection requirements that may require certification. See 11C.5, and Section 13. Maintenance Management - Independent Inspections.
11C.4	SWS should be sub-divided into clear stages allowing a record of accomplishment at each stage in the process. The SWS should seek to minimise the risk of maintenance error by including or identifying lessons learned from previous maintenance error investigations. See 11VAR.1.
11C.5	See Section 13. Maintenance Management - Independent Inspections.
11C.6	No Guidance.
11C.7	No Guidance.
11C.8	No Guidance.
11C.9	No Guidance.
11ACC.1	None.
11VAR.1	The relevant Shell Technical Authority – Air Transport, (TA/1), may vary MR11C.4, Staged Worksheets (SWS), for limited exposure contracts.

R690-4	Engineering
12	Maintenance Management - Foreign Object Debris Checks
MR	12B, 12C.1, 12C.2, 12C.3, 12C.4, 12C.5
Guidance Material	
12B	Foreign Object Debris (FOD) is defined as items that may cause damage to aircraft or its components and any substances or items that have been allowed to invade the aircraft or aircraft components.
12C.1	No Guidance.
12C.2	No Guidance.
12C.3	No Guidance.
12C.4	Leak checks should be recorded and certified appropriately.
12C.5	FOD walks, FOD boxes and controls around aircraft platforms and tool control.
12ACC.1	None.
12VAR.1	None.

690-4	Engineering
13	Maintenance Management – Independent Inspections
MR	13B, 13C.1, 13C.2, 13C.3, 13C.4, 13C.5, 13C.7, 13C.8, 13ACC.1
Guidance Material	
13B	The principle of additional inspections on Critical Maintenance Tasks (CMT) on aircraft systems is well understood and accepted. National Aviation Authorities (NAA) have given these additional inspections different titles: Duplicate Inspections by the UK CAA; Independent Inspections by CASA and EASA; Required Inspection Items (RII) by the FAA; and Dual Inspection or Independent Check by Transport Canada.
13C.1	The scope and content of duplicate inspections, and how the recording and certification of duplicate inspections is carried out as part aircraft's maintenance records should be defined.
13C.2	The content and scope of a duplicate inspection check should include, where applicable. • Correct assembly and locking of all parts that were disconnected or disturbed. • Full and free movement of the system over the complete range. • Correctly tensioned cables with correct clearances at secondary stops. • Operation of the control system to ensure operation in the correct sense. • Separate system checks if the control system is duplicated to provide redundancy; and, • That, where different control systems are interconnected such that, they affect each other, all interactions are checked through the full range of movement.
13C.3	The training, competence and authorisation procedures should demonstrate that: • The authorised signatories for duplicate inspections are trained and have gained experience on the specific control systems being inspected. • That any staff authorised as a "second signatory" are suitably qualified by the company to carry out the inspection. • That the training and authorisation process can be applied to flight crew when operational requirements exist, such as when away from normal maintenance facilities, and should only cover "limited and simple tasks" such as when minor adjustment of a control is required.
13C.4	In small helicopter operators, this information may not be required, asked for, or acted upon, by the OEM/TC/STC holder and it is may not be practical to track or supply the information.
13C.5	Secondary Inspections called up by the operator where maintenance tasks have been identified as prone to error by the operator, may not require the certifying staff to have Independent Inspection approvals.
13C.7	No Guidance.
13C.8	Single engineer independent inspection may be permitted by the relevant NAA at normal operating bases. As example of a single person independent inspection is where an engineer, signs both inspections, the second after having a break. This prohibition does not preclude innovative processes that may be employed, such as remote inspections, and approved, for remote locations and part of processes such as Helicopter Offshore Unserviceable Recovery (HOUR) processes. These instances should be clearly detailed and as an example, the aircraft may be required to return without passengers.
13ACC.1	None.
13VAR.1	None.

R690-4	Engineering
14	Maintenance Management - Release to Service
MR	14B, 14C.1, 14C.2, 14C.3, 14C.4, 14C.5
Guidance Material	
14B	No Guidance.
14C.1	No Guidance.
14C.2	The procedures should require that no aircraft are "Released to Service" unless they are: • Airworthy. • Appropriately equipped, configured, and maintained for their intended use; and, • Have a valid Certificate of Airworthiness (C of A), Airworthiness Review Certificate (ARC, if applicable).
14C.3	No Guidance.
14C.4	No Guidance.
14C.5	Remote locations could include offshore installations.
14ACC.1	None.
14VAR.1	None.

R690-4	Engineering
15	Maintenance Observation Programme
MR	15B, 15C.1, 15C.2, 15C.3, 15C.4
Guidance Material	
15B	General description of Maintenance Observation Programme (MOP) process: The MOP programme involves an additional review of any work process within a maintenance organisation and is considered complementary to the normal supervision activity. It is expected that this activity should be, or is, performed by peers who understand the task at hand and/or have the experience with it. The MOP programme should contain the following elements: • **Aim**: Identify and mitigate the causal factors that encourage staff to ignore or work round existing procedures and systems, but also to learn from all operations, including good practices. . • **Process**: Describe the MOP processes, procedures, and forms in use and, • **System Review**: Determine the effectiveness with the opportunity to improve where considered necessary. See 15VAR.1.
15C.1	The MOP programme should involve maintenance personnel at all levels. Individual engagement, communication and buy-in should be considered when the MOP programme is launched and thereafter.
15C.2	"Regular Intervals" typically should mean bi-monthly or more frequently and cover all locations that maintenance is performed.
15C.3	All plans should be tracked to closure.
15C.4	No Guidance.
15ACC.1	None.
15VAR.1	The relevant Shell Technical Authority – Air Transport, (TA/1), may vary requirement MR15B, Maintenance Observation Programme (MOP), for limited exposure contracts.

R690-4	Engineering
16	Quality (Compliance Monitoring) System
MR	16B, 16C.1, 16C.2
Guidance Material	
16B	The process should be appropriate to the size and complexity of the company.
16C.1	No Guidance.
16C.2	No Guidance.
16ACC.1	None.
16VAR.1	None.

R690-4	Engineering
17	Occurrence Reporting System
MR	17B, 17C.1, 17C.2
Guidance Material	
17B	The process should be appropriate to the size and complexity of the company.
17C.1	No Guidance.
17C.2	No Guidance.
17ACC.1	None.
17VAR.1	None.

R690-4	Engineering
18	Maintenance Check Flights
MR	18B, 18C.1, 18C.2, 18C.3
Guidance Material	
18B	Maintenance Check Flights (MCF) guidance should be documented in both maintenance and operations procedures,
18C.1	No Guidance.
18C.2	No Guidance.
18C.3	The need for additional crew and/or task specialists should be identified before each intended maintenance check flight, and accounted for in the Risk Assesment, taking into consideration the expected workload and any risk assessment.
18ACC.1	None.
18VAR.1	None.

R690-4	Engineering
19	Maintenance Facilities - General
MR	19B, 19C.1, 19C.2, 19C.3, 19C.4, 19C.5
Guidance Material	
19B	Line Maintenance may be performed without a hangar.
19C.1	No Guidance.
19C.2	Aircraft component workshops should be large enough to accommodate the components that are planned to be maintained. This may be varied with the agreement of the relevant Shell Technical Authority (TA/1).
19C.3	See Section 8. Continuing Airworthiness – Workplace.
19C.4	Protection from inclement weather means the hangar or component workshop structures should be to a standard against extreme temperatures, precipitation, dust/sand, etc. but also against noise, insects, wildlife, etc.
19C.5	See Section 12, Maintenance management - Foreign Object Debris Checks.
19ACC.1	None.
19VAR.1	The relevant Shell Technical Authority (TA/1), may vary requirement MR19C.2, Component Workshops, for limited exposure contracts.

R690-4	Engineering
20	Maintenance Facilities - Working Conditions
MR	20B, 20C.1, 20C.2, 20C.3, 20C.4, 20C.5 & 20ACC.1
Guidance Material	
20B	No Guidance.
20C.1	No Guidance.
20C.2	PPE requirements should meet local regulatory, company and aircraft OEM requirements, will typically address the use of: • Eye, Hand, and Foot Protection. • Head Protection, in conjunction with Working at Height (WAH) requirements. • Clothing policy.
20C.3	Working At Height (WAH) is defined in the IOGP Life Saving Rules as being above 1.8 Meters, or 6 Feet. The WAH policy, including any associated Risk Assessments, should also meets Shell local regulatory requirements, and typically should cover: • WAH, without a work stand during line operations/ramp maintenance using the designed and installed maintenance access steps and platforms on the aircraft for documented, short duration, simple tasks. • WAH in the hangar or similar maintenance facility, using suitable Aircraft Docking Stations. • WAH at offsite locations, such as emergency landing sites, remote helipads, and helidecks. Whilst operating for Shell detailed WAH guidance is available via the local Shell Technical Authority (TA/1), particularly, if aircraft lands at an offsite location (helideck, remote location) and requires maintenance.
20C.4	See Section 19: Maintenance Facilities – General.
20C.5	Guidance on the use of Mobile Phones and other PED, should be provided.
20ACC.1	None.
20VAR.1	None.

R690-4	Engineering
21	Aircraft Components/Material Management – Equipment and Tools
MR	20B, 20C.1, 20C.2, 20C.3, 20C.4, 20C.5
Guidance Material	
21B	No Guidance.
21C.1	Only the special tooling or test equipment specified by the aircraft or engine manufacturer, or its equivalent, should be used to perform maintenance on an aircraft, unless the use of alternative tooling has been agreed with the relevant Shell Technical Authority – Air Transport, (TA/1), See 21VAR.1. Privately Owned Tooling is allowed for tooling, other than the above, if the following is in place: • Tools kits should have a contents list and any unserviceable tools are identified on this list. • Tool kits should be arranged so it is immediately obvious if a tool is missing at the end of a duty period. • Tools should be marked with a unique identifier and that can be traced to their owner and/or tool kit.
21C.2	All equipment used in the performance of maintenance should be inspected prior to use on aircraft to ensure it is serviceable and free from foreign objects. The control system should include the following control processes: • Tools kits should have a contents list and any unserviceable tools are identified on this list. • Tool kits should be arranged so it is immediately obvious if a tool is missing at the end of a duty period.
21C.3	The control system should include the tools and specialised kits located in workshops.
21C.4	Tool calibration records should be retained in accordance with local requirements.
21C.5	No Guidance.
21C.6	No Guidance.
21ACC.1	None.
21VAR.1	The relevant Shell Technical Authority – Air Transport, (TA/1), may vary MR21C.1, Company Owned Tooling, for limited exposure contracts, operations in remote locations, and small helicopter operators.

R690-4	Engineering
22	Aircraft Components/Material Management – Bonded, Quarantine, and Inflammables storage areas
MR	22B, 22C.1, 22C.2, 22C.3, 22C.4, 22C.5, 22C.6, 22C.7, 22C.8, 22C.9
Guidance Material	
22B	Procedures for all aspects of the stores, and a records/control programme should be in place.
22C.1	A demonstrated control process for any components, which due to their size, are held in a location outside the secure storage facility should be in place.
22C.2	No Guidance.
22C.3	No Guidance.
22C.4	No Guidance.
22C.5	No Guidance.
22C.6	A register for all items in the quarantine area should be maintained.
22C.7	No Guidance.
22C.8	No Guidance.
22C.9	No Guidance.
22ACC.1	None.
22VAR.1	None.

R690-4	Engineering
23	Aircraft Components/Material Management – Responsibilities of stores personnel
MR	23B, 23C.1, 23C.2
Guidance Material	
23B	No Guidance.
23C.1	Training should cover the inspection and acceptance of the relevant parts as per the operators "Goods Inward" or "Receiving Inspection" processes.
23C.2	By name or company identifier of the inspector. There should be full traceability of each item to its source provider.
23ACC.1	None.
23VAR.1	None.

R690-4	Engineering	
24	Maintenance - Aircraft Fuel Checks	
MR	24B, 24C.1, 24C.2, 24C.3, 24C.4, 24C.5 & 24ACC.1	
Guidance Material		
24B	The Aircraft Operator should maintain quality assurance over and test all Bulk Storage and Delivery Systems in accordance with documented procedures. These procedures could reference the following: • The Shell Aviation "Shell Airport Operations Manual" (SAOM) • "Shell Aviation Quality Assurance Manual" (SAQSM), or an equivalent international standard, such as the Joint Inspection Group (JIG) requirements.	The relevant Shell Technical Authority - Air Transport (TA/1) agrees and accepts the processes, if the Aircraft Operator owns or manages the fuel and/or installation (onshore, offshore or both). **This variation is managed and recorded locally.**
24C.1	No Guidance.	
24C.2	Detailed requirements of where and what aircraft need fuel samples taken. See 24VAR.1.	
24C.3	Sample jars should be sealed and designed such that a "swirl test" can be carried out.	
24C.4	No Guidance.	
24C.5	Sample jars should be stored in compliance with local Health, Safety & Environment (HSE) requirements for the storage of flammable liquids.	
24ACC.1	None.	
24VAR.1	The relevant Shell Technical Authority - Air Transport (TA/1), can vary 24.C.2, Daily Fuel Samples, for limited exposure contracts. To meet this alleviation, Fuel sample requirements are in place such that a comprehensive sample process is in place for the day of every Shell Flight.	

R690-4	Engineering
25	Maintenance Personnel General Requirements – Fatigue Prevention
MR	25B, 25C.1, 25C.2, 25C.3, 25C.4, 25C.5, 25C.6
Guidance Material	
25B	It should be the responsibility of the individual concerned to ensure that he/she does not report for duty or certify if he is genuinely unfit. Issues associated with mental and physical fitness, fatigue, stress, medication, alcohol, and drug use may all have a bearing on "fitness to work". Other than any specific local labor laws, maintenance personnel are not regulated by duty hour limitations. It is incumbent on the management and supervisors of the AMO to locally manage their personnel with due consideration to fatigue and the potential for human factors provoking errors in maintenance.
25C.1	Risk Assessments that allow staff working extending hours on tasks with a higher risk should be documented.
25C.2	For locations where shifts can be regularly rostered with a heavy maintenance workload to be completed through the night. The bulk of work should be completed by the staff on duty up to midnight with the residue being completed by a staff covering the period from approximately 2300 to 0700 hrs.
25C.3	With agreement with the relevant Shell Technical Authority – Air Transport (TA1), this requirement can be varied, subject to the following guidance: • Operations where personnel are working a back-to-back roster, e.g., a four on/four off working cycle. • At field locations where only basic accommodation is provided, a regular "time on-site, time off-site" routine should be established to ensure maintenance personnel working under these conditions are not in the field for prolonged periods. The minimum acceptable ratio of time on-site to time off-site is 2:1 and the maximum period on-site does not exceed 2 months. • The period spent commuting to and from the operational location should be considered work time when part of a regular "time on-site, time off-site" routine. • See 25VAR.1.
25C.4	No Guidance.
25C.5	No Guidance.
25C.6	No Guidance.
25ACC.1	None.
25VAR.1	The relevant Shell Technical Authority – Air Transport (TA/1), can vary requirement MR25C.3, Days Off

R690-4	Engineering
26	Maintenance Personnel – Qualifications and Experience
MR	26B, 26C.1, 26C.2, 26C.3, 26C.4, 26C.5, 26C.6.
Guidance Material	
26B	No Guidance.
26C.1	No Guidance.
26C.2	No Guidance.
26C.3	No Guidance.
26C.4	No Guidance.
26C.5	Formal type training should be provided by a suitably approved training organisation, Part 147 Organization etc., not necessarily by the OEM.
26C.6	Training records should track: • The person's name and, where applicable, personnel National Aviation Authority (NAA) license number and company authorizations. • The dates when training and competency has been successfully completed. • The assessment and relevant training, including the result. • Course certificates for all relevant training; and, • The expiry and renewal dates for the authorizations granted.
26ACC.1	None.
26VAR.1	None.

R690-4	Engineering
27	Maintenance Personnel – Competence and Training
MR	27B, 27C.1, 27C.2, 27C.3, 27C.4, 27C.5, 27C.6, 27C.7, 27C.8, 27C.9
Guidance Material	
27B	No Guidance.
27C.1	The induction training programme should also cover suitable management training for all managers, supervisors as well as any contractors;
27C.2	No Guidance.
27C.3	No Guidance.
27C.4	No Guidance.
27C.5	Continuation training typically includes: • Modification standard of the aircraft and components maintained. • Human factors issues identified by relevant findings from Quality Assurance audits and the Maintenance Observation Process (MOP) process.
27C.6	Continuing Airworthiness personnel could have certification authorisations, Certificate of Airworthiness Review, ARC review etc.
27C.7	The training programme should provide sufficient knowledge of applicable regulations, standards, procedures, and the operated aircraft types as well as general organisational training on SMS, company procedures and internal systems/programmes linked to aircraft maintenance, any individual roles and job descriptions.
27C.8	Support staff could include stores, ramp, refuellers etc.
27C.9	No Guidance.
27ACC.1	None.
27VAR.1	None.

R690-4	Engineering
28	Reserved for future use

R690-4	Engineering
29	Reserved for future use

R690-4	Engineering
30	Supervision of unlicensed and recently licensed maintenance personnel
MR	30B, 30C.1
Guidance Material	
30B	No Guidance.
30C.1	No Guidance.
30ACC.1	None.
20VAR.1	None.

R690-4	Engineering
31	HUMS - Equipment
MR	31B, 31C.1, 31C.2, 31C.3, 31C.4
Guidance Material	
31B	In exceptional circumstances after market HUMS can be fitted to legacy aircraft, where no appropriate OEM system is available. This may be accepted by the relevant Shell Technical Authority — Air Transport (TA/1), See 31VAR.1.
31C.1	No Guidance.
31C.2	After market systems may not meet this requirement. See 31VAR.1.
31C.3	After market systems may not meet this requirement. For aftermarket HUMS systems, an agreement should be in place with the OEM for the installed system that mirrors the agreements in place for systems installed by the aircraft OEM. Both agreements should contain the following elements: • The requirement to pass aircraft data to the aircraft OEM. • Contact methods and defined communication protocols, and • Threshold setting and amendment protocols. See 31VAR.1.
31C.4	Documented HUMS procedures should cover the areas detailed in the HeliOffshore HUMS Recommended Practice, latest version, Sections 2-12, see also 35C.2.
31ACC.2	None.
31VAR.1	The relevant Shell Technical Authority — Air Transport (TA/1), may vary requirements MR31.B, 31C.2 and 31C.3, for Aftermarket Systems.

R690-4	Engineering
32	HUMS - Download and Primary Analysis
MR	32B, 32C.1, 32C.2
Guidance Material	
32B	No Guidance.
32C.1	Some regulatory authorities or company procedures may not allow certification in the Aircraft Technical Log (ATL), in these circumstances, similar documents are multi-use workcards, or other formally tracked documentation can be used.
32C.2	No Guidance.
32ACC.1	None.
32VAR.1	None.

R690-4	Engineering
33	HUMS – download periodicity – Normal monitoring
MR	33B, 33C.1, 33C.2, 33C.3
Guidance Material	
33B	No Guidance.
33C.1	33C.1.1 - Main Operating Bases are defined in Shell contracts, or formally agreed by the relevant Shell Technical Authority (TA1). The process for the download and initial line analysis of HUMS data, should include all supplementary software applications, toolbars, or special checks. 33C.1.2 - High frequency is generally defined as every 30 minutes or so, where the aircraft does not shut-down to refuel or pick up passengers, examples being BSP Operations, SUKEP SNS Operations.
33C.2	Automated Detection Tools, Heli-Offshore HUMS Recommended Practice, Latest Version, Definitions and Section 7. • Leonardo Systems — Advanced Vibration Data Mining — AVDM. • Airbus System — Flyscan; and, • Sikorsky — System built into Ground station.
33C.3	Communications, Heli-Offshore HUMS Recommended Practice, Latest Version, Section 6.
33ACC.1	None.
33VAR.1	None.

R690-4	Engineering
34	HUMS - Unserviceability
MR	34C, 34C.1, 34C.2, 34C.3 & 34ACC.1
Guidance Material	
34B	No Guidance.
34C.1	No Guidance.
34C.2	The operator should have procedures in place to address card or download failures.
34C.3	No Guidance.
34ACC.1	None.
34VAR.1	None.

R690-4	Engineering
35	HUMS - Support Processes – Training and Data Management
MR	35C, 35C.1, 35C.2
Guidance Material	
35B	No Guidance.
35C.1	No Guidance.
35C.2	It is expected that an operator's HUMS procedures and processes fully follow the latest version of Heli-Offshore HUMS Recommended Practice. This section simply details this.
35ACC.1	None.
35VAR.1	None.

R690-4	Engineering
36	HUMS - Data Transfer
MR	36C, 36C.1, 36C.2, 36C.3
Guidance Material	
36B	If Inflight HUMS data transfer is available for the aircraft type and region. The fitment of the system may be varied by the relevant Shell Technical Authority - Air Transport (TA/1), See 36VAR.1
36C.1	Wireless download and analysis meet between flight requirements, however, if the system is unserviceable, procedures in Section 32 HUMS – Download and Primary Analysis and Section 33 – Download periodicity – Normal monitoring should be in place. HUMS In-Flight data transfer systems may be unserviceable if the download procedure in 33C.1 is applied.
36C.2	Procedures should be developed in conjunction with aircraft Original Equipment Manufacturer (OEM) and based on its recommendations. Heli-Offshore RP states: Para 5.10: At this time, the data is not of sufficient integrity to make in-flight decisions, and therefore, should not be shared with crews in flight.
36C.3	See 36C.2.
36ACC.1	None.
36VAR.1	The relevant Shell Technical Authority - Air Transport (TA/1), may vary requirement MR36B, Data Transfer, if Inflight HUMS data transfer is available for the aircraft type and region.

R690-5	Helicopter and Equipment	
1	Equipment Serviceability	
MR	1B, 1C.1, 1C.2, 1C.3, 1C.4	
Guidance Material		
1B	If no Minimum Equipment List is in place, all systems must be serviceable for flight.	The Shell Technical Authority — Air Transport (TA/1) demonstrates that additional equipment, that has been requested by, and detailed in contract requirements, is controlled via the Minimum Departure Standard (MDS), or equivalent. **This Variation is managed and recorded locally.**
1C.1	No Guidance	
1C.2	No Guidance	
1C.3	No Guidance	
1C.4	No Guidance	
1C.5	No Guidance	
1ACC.1	None.	
1VAR.1	None.	

R690-5	Helicopter and Equipment
2	Certification Standard
MR	2B, 2C.1 & 2ACC.1
Guidance Material	
2B	Refer to Shell Aircraft “Assessed Aircraft Listing”. See 2ACC.1.
2C.1	No Guidance
2ACC.1	Shell requirements to meet 2B, are to only use helicopter types that have been assessed as acceptable by Shell Aircraft and are agreed with the relevant Shell Technical Authority - Air Transport (TA/1).
2VAR.1	None.

R690-5	Helicopter and Equipment
3	Instrument flight rules - equipment
MR	3B, 3C.1
Guidance Material	
3B	See also Shell Aircraft “Assessed Aircraft Listing”.
3C.1	No Guidance.
3ACC.1	None.
3VAR.1	None.

R690-5	Helicopter and Equipment
4	Aircraft Automation
MR	4B, 4C.1, 4C.2
Guidance Material	
4B	Where available for the aircraft type, consider the installation of OEM software for offshore approaches, or alternative capabilities using Performance-based Navigation (PBN) capabilities to allow for automated approaches based on defined profiles.
4C.1	No Guidance.
4C.2	No Guidance.
4ACC.1	None.
4VAR.1	None.

R690-5	Helicopter and Equipment
5	Aircraft-Mounted Emergency Locator Transmitters
MR	5B, 5C.1, 5C.2, 5C.3, 5C.4
Guidance Material	
5B	No Guidance.
5C.1	No Guidance.
5C.2	No Guidance.
5C.3	No Guidance.
5C.4	No Guidance.
5ACC.1	None.
5VAR.1	None.

R690-5	Helicopter and Equipment
6	Underwater locator beacon fitted to cockpit voice recorder and flight data recorder
MR	6B, 6C.1, 6C.2
Guidance Material	
6B	Underwater locator beacon fitted to cockpit voice recorder and flight data recorder.
6C.1	Underwater Location Beacons - The aircraft operator should have reasonable access to receiving equipment and that this equipment may be quickly dispatched to the accident site.
6C.2	No Guidance.
6C.2	No Guidance.
6ACC.1	None.
6VAR.1	None.

R690-5	Helicopter and Equipment
7	Helicopter Terrain Awareness Warning System
MR	7B, 7C.1, 7C.2
Guidance Material	
7B	Offshore HTAWS is available for the following: Leonardo AW139/189 with EASA RFM All other types, should be available in 2024.
7C.1	Offshore HTAWS modes even without a full obstacle environment for the location, still provides valuable safety cues. This deficiency should not stop the fitment of the system.
7C.2	No Guidance.
7ACC.1	None.
7VAR.1	None.

R690-5	Helicopter and Equipment
8	Airborne Collision Avoidance Systems
MR	8B, 8C.1, 8C.2, 8C.3
Guidance Material	
8B	No Guidance.
8C.1	No Guidance.
8C.2	See 8VAR.1 and 690-2, Aircraft Operations, Section 7, Airborne Collision Avoidance Systems. TCAS2 may not be required, if agreed with the relevant Shell Technical Authority – Air Transport, (TA/1), and an acceptable Risk Assessment is in place.
8C.3	No Guidance.
8ACC.1	None.
8VAR.1	The relevant Shell Technical Authority – Air Transport, (TA/1) may vary requirement MR8C.2, where operations are in low density air traffic areas and an agreed Risk Assessment is in place.

R690-5	Helicopter and Equipment
9	Helicopter Flight Data Monitoring
MR	9B, 9C.1, 9C.2, 9C.3
Guidance Material	
9B	No Guidance.
9C.1	No Guidance.
9C.2	See PART 690-2 8VAR.1, Aircraft Operations
9C.3	No Guidance.
9ACC.1	None.
9VAR.1	None.

R690-5	Helicopter and Equipment
10	Health and Usage Monitoring System
MR	10B, 10C.1, 10C.2, 10C.3, 10C.4
Guidance Material	
10B	Documented certification requirements are defined in Certification Specifications and Acceptable Means of Compliance for Large Rotorcraft CS-29, paragraph CS 21465 Vibration Health Monitoring and Acceptable Mean of Compliance, paragraph AMC 29.1465. See also See 690-4 Engineering, Section 34.
10C.1	No Guidance.
10C.2	No Guidance.
10C.3	No Guidance.
10C.4	No Guidance.
10ACC.1	None.
10VAR.1	None.

R690-5	Helicopter and Equipment
11	Life Rafts
MR	11B, 11C.1, 11C.2, 11C.3, 11C.4, 11C.5, 11C.6, 11C.7
Guidance Material	
11B	No Guidance.
11C.1	No Guidance.
11C.2	No Guidance.
11C.3	No Guidance.
11C.4	No Guidance.
11C.5	No Guidance.
11C.6	No Guidance.
11C.7	No Guidance.
11ACC.1	None.
11VAR.7	None.

R690-5	Helicopter and Equipment
12	Helicopter Cabin Push-out Windows
MR	12B, 12C.1, 12C.2, 12C.3
Guidance Material	
12B	The Sikorsky S92A requires push out windows within the four, standard cabin emergency exits — Sikorsky option No. 77005 to be fully compliant. This can be varied by the relevant Shell Technical Authority – Air Transport, (TA/1) and consideration given to not using these seats. See 12VAR.1. Airbus H175 allows, 2 Normal Pax, plus on XBR, or 4 Normal Pax to escape out the front two push windows. These meet the requirements of SPA.HOFO. 165 (H), (C, 2), which in an exit can accommodate "two ellipses" (equivalent to two normal pax). This has been accepted as compliant. See 12VAR.1. and 12ACC.1.
12C.1	In most offshore helicopters with sliding doors, Airbus H175 and H160, Leonardo AW139. AW189 and AW169, the Push Out window is also the designated emergency exit. This means that the door is not to be opened in an emergency, on shore or offshore. Emergency Exits are defined in the Rotorcraft Flight Manual (RFM) and the Ground Rescue Guide, supplied by some manufacturers.
12C.2	No Guidance.
12ACC.1	To meet Shell requirements, the Sikorsky S92A requires push out windows within the four, standard, cabin emergency exits — Sikorsky option No. 77005 to be fully compliant. See also 12VAR.1.
12VAR.3	The relevant Shell Technical Authority – Air Transport, (TA/1), may vary MR12B, Sikorsky S92A push-out windows, for low exposure contracts if no other compliant aircraft at location available.

R690-5	Helicopter and Equipment
13	Helicopter Emergency Exit Lighting
MR	13B, 13C.1
Guidance Material	
13B	No Guidance.
13C.1	No Guidance.
13ACC.1	None.
13VAR.1	None.

R690-5	Helicopter and Equipment
14	Seating Layout
MR	14B, 14C.1, 14C2, 14C3
Guidance Material	
14B	No Guidance.
14C.1	Seats should be clearly marked to identify which exits are suitable for Extra Broad Passengers (XBR), see 690-3, Section 5. Passenger handling.
14C.2	The Sikorsky S92A requires push out windows within the four, standard, cabin emergency exits — Sikorsky option No. 77005 to be fully compliant. Airbus H175 allows, 2 Normal Pax, plus on XBR, or 4 Normal Pax to escape out the front two push windows. These meet the requirements of SPA.HOFO. 165 (H), (C, 2), which in an exit can accommodate “two ellipses” (equivalent to two normal pax). This has been accepted as compliant. See also 690-5, Section 12, Helicopter Cabin Push-out Windows.
14C.3	No Guidance.
14ACC.1	None.
14VAR.1	None.

R690-5	Helicopter and Equipment
15	Tail Camera
MR	15B, 15C.1
Guidance Material	
15B	No Guidance.
15C.1	No Guidance.
15ACC.1	None.
15VAR.1	The relevant Shell Technical Authority – Air Transport, (TA/1) may vary requirement MR15B, Tail Camera for low exposure contracts where no other compliant aircraft is available.

R690-5	Helicopter and Equipment
16	Cockpit Camera
MR	16B, 16C.1, 16C.3, 16C.4, 16C.5, 16C.6
Guidance Material	
16B	The camera does not need record to the CVFDR or similar and a typical camera fit is: https://appareo.com/aviation/airs-400/ This camera is fitted in all new Airbus Helicopters and is available as a simple Supplemental Type Certificate (STC) for many other types.
16C.1	No Guidance.
16C.2	No Guidance.
16C.3	No Guidance.
16C.4	No Guidance.
16C.5	No Guidance.
16C.6	Consideration should be given to adding a serviceability requirement as a Minimum Departure Standard.
16ACC.1	None.
16VAR.1	The relevant Shell Technical Authority – Air Transport, (TA/1) may vary requirement MR16B, Cockpit Camera for low exposure contracts where no other compliant aircraft is available.

R690-5	Helicopter and Equipment
17	Helicopter Flotation Gear
MR	17B, 17C.1, 17C.3
Guidance Material	
17B	No Guidance.
17C.1	The Sikorsky S92A has two float bag options, 3 or 5 bag flotation system. The 3 bag is typically only for Tropical operations as it is limited to Sea State 4. The 5-bag system which includes an extra bag under the Tailboom, is Sea State 6. All other types “Assessed as Acceptable” as part of Shell Aircraft, Assessed Aircraft process, have Sea State 6 floats as standard.
17C.2	No Guidance.
17.C3	No Guidance.
17ACC.1	None
17VAR.1	None.

R690-5	Helicopter and Equipment	
18	Flight Following	
MR	18B, 18C.1	
Guidance Material		
18B	See 690-2, Section 35. Flight following, for operational requirements.	
18C.1	No Guidance.	To meet 690-5, 18C.1.2, The relevant Shell Technical Authority – Air Transport, (TA/1) is consulted, where there is more than one period of unserviceability of the Satellite Flight Following System (SFFS) in 30 days. **This variation is managed and recorded locally.**
18ACC.1	None.	
18VAR.1	None.	

R690-5	Helicopter and Equipment
19	Passenger Seats and Harnesses
MR	19B, 19C.1, 19C.2
Guidance Material	
19B	Sikorsky S92A seats should be fitted with Headrests.
19C.1	No seat belt extensions should be permitted.
19C.2	Some Leonardo AW139 and AW189 may have loop type seat belts.,
19ACC.1	None.
19VAR.1	None.

R690-5	Helicopter and Equipment
20	Survival kits
MR	20B, 20C.1
Guidance Material	
20B	No Guidance.
20C.1	An enhanced survival kit, suitable for the area of operation, should be carried on flights, which are planned operate in remote, cold or jungle terrain.
20ACC.1	None.
20VAR.1	None.

R690-5	Helicopter and Equipment
21	High Intensity Strobe Lights
MR	21B, 21C.1, 21C.2
Guidance Material	
21B	Operators should be competent to demonstrate that any equipment fitted and claimed to meet this requirement, is a High Intensity Strobe Lights (HISL). This could be a modification, SB or note from OEM.
21C.1	No Guidance.
21C.2	No Guidance.
21ACC.1	None.
21VAR.1	None.

R690-5	Helicopter and Equipment
22	Continuous Improvement of Aircraft Operational Safety Systems
MR	22B, 22C.1
Guidance Material	
22B	No Guidance.
22C.1	Examples of Operational Safety Systems are: • Automated approach features for rig approaches. • Automatic assisted take-off, go-around, and landing features. • A recovery function, triggered by a pilot, which recovers the helicopter to a straight and level attitude after a crew induced aircraft upset. • Vortex Ring detection and warning system. • Obstacle Detection Aids.
22ACC.1	None.
22VAR.1	None.