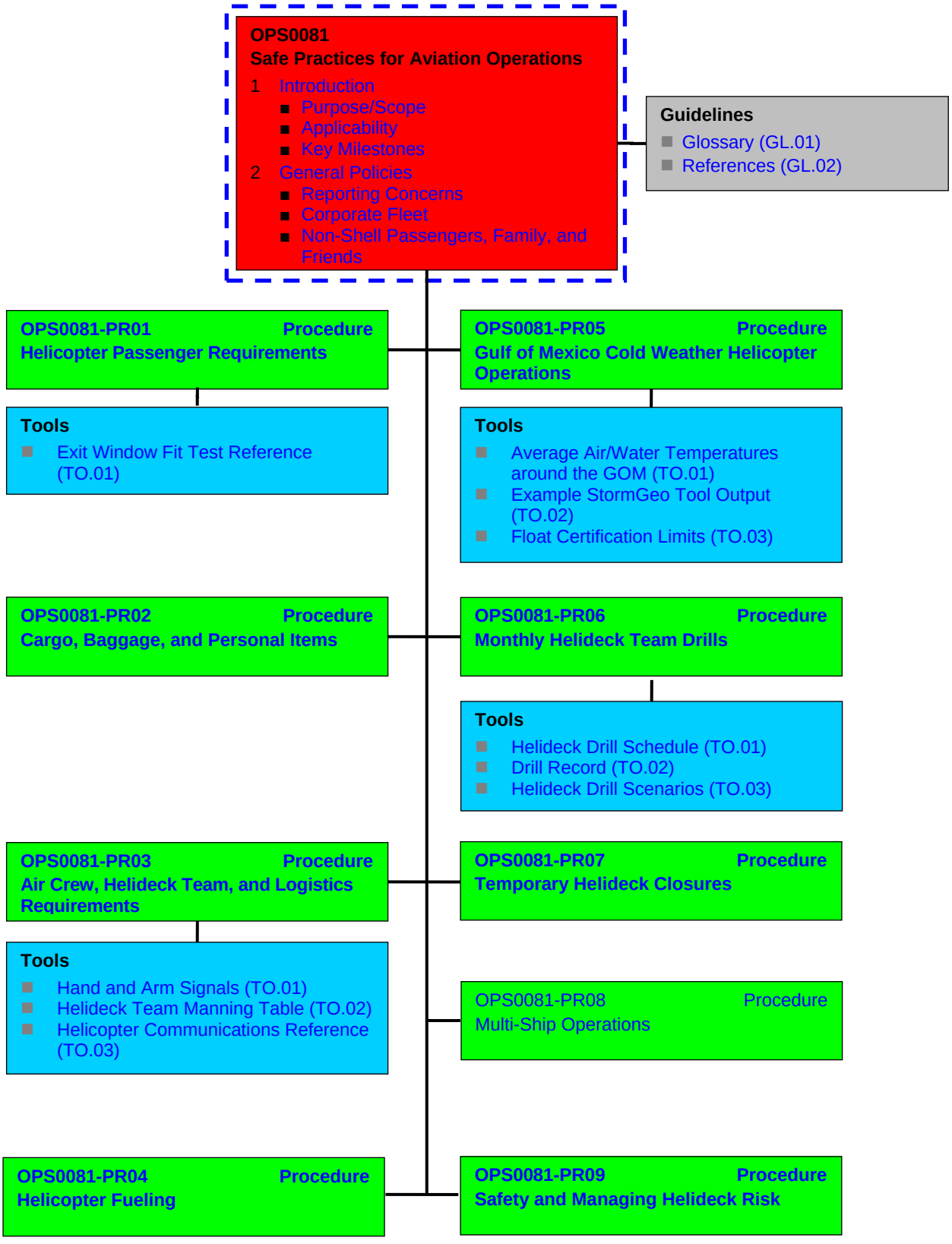
SAFE PRACTICES FOR AVIATION OPERATIONS



Document Suite Map

1 Introduction

1.1 Purpose and Scope

This document suite is in place to manage the risks associated with aviation operations in Americas-Air Transport. It provides additional material complementary to the mandatory requirements in Upstream Deepwater (UPD) Air Transport core content.

This document suite covers air travel requirements to and from Americas-Air Transport offshore facilities, as well as safety requirements and critical operations on offshore facility helidecks.

1.2 Applicability

This document suite applies to employees and contractors responsible for:

- planning and execution for onshore flights,
- planning and executing flights to and from offshore facilities,
- traveling offshore and back via these flights, and
- managing and overseeing facility helideck operations.

1.3 Key Milestones

The following dates reflect the Key Milestones for Revision 11.0.

Approval Date	12 Jan 2018

2 General Policies

2.1 Reporting Concerns

The pilot retains ultimate authority for the safe conduct of flight. Shell supervisors displeased with pilot performance shall report concerns to Americas–Air Transport. The helicopter transportation representative or the responsible Aviation Manager will, after verifying the facts, pursue the matter with the helicopter operator. No one shall pressure a pilot to do something not deemed safe by the pilot.

Pilots, who feel pressured, implicitly or directly, to act in conflict with their professional judgment, shall refuse and report this through their organization.

2.2 Corporate Fleet

Access to Shell Corporate Fleet aircraft is extremely limited. Shell Business Unit personnel not on the Fleet authorization list should contact their local Logistics Manager for charter support.

2.3 Non-Shell Passengers, Family, and Friends

Non-Shell passengers and Shell family members shall not fly on Shell Business Unit charters (including offshore helicopter flights) without a clear business reason. This does not include industry, press, or government representatives Shell invites to visit Shell locations, but does apply to their family and friends.

If there is a business reason for non-Shell passengers, family, or friends to be flown by Shell Business Unit charter, authorization shall be obtained from both the responsible Shell Asset Manager and the responsible Shell GM Logistics/Logistics Manager.

NOTE:

Spouse/companion travel at company expense may result in personal tax liabilities. Refer to the current travel expense policy.

Glossary

Terms and Definitions

The table below contains definitions of terms and acronyms used in the Shell Americas-Air Transport document suite.

Term/ Acronym	Definition
Aircraft PIC	Aircraft Pilot in Command – Pilot responsible for and in charge of all aircraft specific functions.
ANAC	Agencia Nacional de Aviação Civil
BU	Business Unit
cg	Center of Gravity
DHS	Department of Homeland Security
DOD	Department of Defense
DOT	Department of Transportation
HDA	Helideck Assistant – Person designated by the facility OIM/PIC to act as a helideck team member under the supervision of the HLO.
Helideck Team	The group of people who conduct helideck operations on an offshore facility.
HLO	Helicopter Landing Officer – Person designated by the facility OIM/PIC to lead the helideck team. The HLO is responsible for and is in charge of activities on the helideck.
INAC	Indian and Northern Affairs Canada
Non-Shell Passenger	A person other than a Shell employee or contractor traveling on a Shell contracted charter. Employees and contractors of other companies traveling on a Shell charter under a formal aircraft sharing agreement are considered Shell Passengers.
OIM	Offshore Installation Manager
PF	Pilot Flying. Pilot remaining at the controls of the helicopter during ground operations on the helideck. May be either the Aircraft PIC or second-in-command (SIC).
PIC	Person in Charge
PNF	Pilot Not Flying. Pilot who may exit the helicopter on the helideck. May be the Aircraft PIC or SIC.
PPE	Personal Protective Equipment
PTE	Principal Technical Expert
SIC	Second in Command
SPLC	Shell Pipeline Company
Torch (or Micro-Torch) Lighter	Torch lighters create a thin, needle-like flame that is hotter and more intense than common lighters. Torch lighters are often used for pipes and cigars and maintain a consistent stream of air-propelled fire regardless of the angle they are held at.
TSA	Transportation Security Agency
TWIC	Transportation Worker Identification Credential
TTCAA	Trinidad and Tobago Civil Aviation Authority
VM	Vessel Master
WMO	World Meteorological Organization

References

Doc Number	Title
Shell References	
	Shell Group Requirements for Aircraft Operations (SGRAO)
	SGRAO Operate & Maintain Air Transport Facilities OMAs
	SGRAO Air Operator Requirements
HSE0078	Personal Protective Equipment (PPE)
OPS0189	Transportation Worker Identification Credential (TWIC)
Federal and Industry Regulations	
	International Air Transportation Association (IATA) Dangerous Goods Regulations
	UK HSE Offshore Helideck Design Guidelines
49 CFR Subchapter C (Parts 171-180)	Hazardous Materials Regulations
API Bulletin 1500	Storage and Handling of Aviation Fuels at Airports
CAP-437	Offshore Helicopter Landing Areas
CARs	Transport Canada – Canadian Aviation Regulations (CARs) and Standards
FAA Advisory Circular 150/5230	Aircraft Fuel Storage, Handling and Dispensing on Airports, and Primary Contractor Procedures
IATA Dangerous Goods Packing Instructions	Hazardous Materials Regulations
ICAO Doc 9284 AN/905	ICAO Document for Technical Instructions for the Safe Transport of Dangerous Goods by Air
NFPA 407	Standard for Aircraft Fuel Servicing
NORMAM 27	Brazilian Standards for Offshore Helicopter Landing Areas
RBAC 175	Brazilian Regulations for Transportation of Dangerous Goods in Civil Aircraft
TTCAR	Trinidad and Tobago Civil Aviation Regulations

PROCEDURE OPS0081-PR01

HELICOPTER PASSENGER REQUIREMENTS

1 Safety and Security

1.1 Airport Instructions

Passengers shall follow airport instructions and comply with the National Authority's security-screening requirements, including baggage screening and pat-down search.

1.2 Passenger Behavior

The Pilot or the Aviation Dispatcher has complete authority to refuse boarding or passage to anyone. This especially applies to passenger exhibiting actions deemed abnormal or irrational, in an adverse mental state, physically unable to safely egress the helicopter in case of an emergency, or under the influence of drugs or alcohol. Such persons will be reported to Shell Human Resources, the respective Aviation and Logistics departments, and the appropriate authorities. Incidents will be investigated, and the person may be placed on the Shell No-Access List.

1.3 Relaying Safety Concerns

Passengers should relay safety concerns to the pilot(s) at any time. No passenger shall release seatbelts and move around the cabin during flight to communicate to the pilot(s). Non-safety related communication with the pilot(s) during critical flight operations (take-off and landing) is prohibited.

Gulf of Mexico	Passengers should use the overhead call button and/or the safety communications handset provided in the helicopter cabin. The handset is located next to the most right front row seat in an AW139 and above the rear-facing front row seat in an S-92.

1.4 Life Preservers

Passengers shall wear a Shell-approved life preserver when flying over water. Passengers shall don the preserver when instructed by air or ground crew, and wear it completely buckled and snapped, with all excess straps secured, until instructed to remove it. Removal shall never be done inside the aircraft nor prior to clearing the helideck / flight line

Canada	For offshore helicopter operations, all passengers shall wear a Transport Canada approved helicopter passenger transportation suit system with integrated life preserver unit.
Trinidad and Tobago	For offshore helicopter operations, all passengers shall wear a TTCAA approved life jacket/vest.

1.5 Seatbelts

Passengers shall wear seat belts and shoulder harnesses from the time they enter the aircraft until directed to unbuckle them by air or ground crew.

1.6 Safety Equipment

It is against federal law to tamper with aircraft safety and first-aid equipment.

2 Preparing for Flight

2.1 Fitness to Fly

Offshore passengers who determine that they might not be fit to fly shall notify the Offshore Logistics Coordinator as soon as possible. The Logistics Coordinator and offshore medic shall inform the helicopter operator prior to finalizing the flight manifest. Medical protocol applicability will be assessed with the helicopter operator, and if the passenger is deemed unfit, other transportation will be arranged as needed.

2.2 Emergency Egress Ability

Due to the nature of offshore helicopter flights, all passengers shall have valid Shell accepted HUET training (see https://www.shellcontractor.com). Accordingly, the individual will have demonstrated the ability to perform the following functions in case of an emergency egress from the helicopter:

- Locate the emergency exit window/door
- Recognize the emergency exit opening mechanism
- Comprehend the instructions for operating the emergency exit window/door
- Operate the emergency exit window/door
- Assess whether opening the emergency exit window/door will increase the hazards to which passengers may be exposed
- Follow oral directions and hand signals given by flight crew
- Push out the emergency exit window/door so that it will not impede use of the exit
- Pass expeditiously through the emergency exit without kicking their feet

In addition, at the time of the flight a passenger seated adjacent to an exit window/door must have sufficient mobility, strength or dexterity in both arms, hands, and both legs to:

- Reach upward, sideways, and downward to the location of the emergency exit
- Grasp and push, pull, turn, or otherwise manipulate mechanisms
- Push, shove, pull, or otherwise open the emergency exit window/door without assistance

A passenger seated in a seat adjacent to an exit window/door must:

- Have the ability to read and understand instructions related to emergency evacuation provided by the air operator in printed or graphic form
- Have the ability to understand oral flight crew commands
- Have sufficient visual capacity to perform applicable functions without the assistance of visual aids beyond contact lenses or eyeglasses

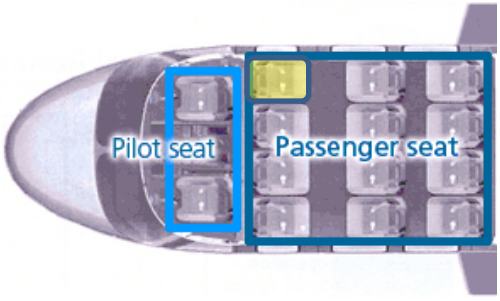
- Have sufficient aural capacity to hear and understand instructions shouted by flight crew members without assistance beyond a hearing aid

Gulf of Mexico and Canada

1. Additional requirements for passengers seated in the front row right side first seat in AW139 aircraft (applicable seat is shown in the figure below in yellow):
   - Be willing and able to use the provided handset in flight to communicate safety related issues directly to flight crew members when deemed necessary.
     - In order to assure that the passenger is willing and able to use the provided handset in flight to communicate safety related issues directly to flight crew members when deemed necessary, the HLO or pilot shall show the following sign to the applicable passenger and obtain an appropriate verbal response:

> You are seated in the front row right seat next to the safety communication handset that can be used to directly communicate with flight crew during flight. In order to use the handset, pick it up; push the button in the handset to talk. Place the handset back after the conversation has ended. Are you willing and able to use the provided handset in flight to communicate safety related issues in the passenger cabin directly to flight crew members when deemed necessary?
>
> Please respond verbally with **Yes** or **No**

     - If the passenger is not willing or able to perform the tasks above, he/she shall be reseated in the helicopter.
     - On every passenger flight, the front row right seat shall be occupied by a passenger in aircraft equipped with a safety communications handset.



2. Additional requirements for passengers seated in the rear facing seat on Sikorsky S-92 aircraft (applicable seat is shown in the figure below in yellow):
   - Be able to reach and operate the emergency window exit lever while wearing a life vest and seated fully strapped into the 4-point harness.

- Be willing and able to use the provided handset in flight to communicate safety related issues directly to flight crew members when deemed necessary.

    - In order to assure that the passenger is willing and able to use the provided handset in flight to communicate safety related issues directly to flight crew members when deemed necessary, the HLO or pilot shall show the following sign to the applicable passenger and obtain an appropriate verbal response:

> You are seated in the rear facing seat. The safety communication handset that can be used to directly communicate with flight crew during flight is above you on the left-hand side. In order to use the handset, pick it up; push the button in the handset to talk. Place the handset back after the conversation has ended. Could you please strap yourself into the seat and show the HLO/pilot that you can reach the emergency exit window lever. Are you willing and able to use the provided handset in flight to communicate safety related issues in the passenger cabin directly to flight crew members when deemed necessary?
>
> Please respond verbally with **Yes** or **No**

    - If the passenger is not willing or able to perform the tasks above, he/she shall be reseated in the helicopter.
    - On every flight the rear facing seat shall be occupied by a passenger or flying crew chief.

2.3 Baggage

Passengers are advised to pack light. Baggage that is over 40 lbs. requires approval from the destination Logistics Coordinator before it is brought to the heliport.

Baggage that weighs over 50 lbs. is determined to be heavy and shall be identified with a sticker or tag indicating its weight status.

Without prior approval for excessively heavy or large baggage, the loading of that baggage can be denied by the dispatcher or flight crew. There will be no carry-on luggage allowed on helicopter flights.

Trinidad and Tobago	Baggage limit for passengers is 25 lbs. Passengers are advised to pack light. Baggage that is over this limit or excessively large requires approval from the offshore Logistics Coordinator before it is brought to the heliport.

Passengers shall provide accurate baggage/cargo weight to their Shell contact prior to arrival at the passenger terminal to ensure that proper reservations and weight allowances are made.

See OPS0081-PR02 Cargo, Baggage, and Personal Items for additional requirements and restrictions.

2.4 Passenger Credentials

Passengers must have a current government picture ID to board their flight. Passengers shall keep ID on their person for display at the security portal.

U.S.A. (CONUS, GOM, and AK) and **Canada**	Acceptable IDs include: • Government issued passport • US passport card • Department of Homeland Security (DHS) “Trusted Traveler” cards (NEXUS, SENTRI, FAST) • US Military ID (active duty or retired military and their dependents, and Department of Defense [DOD] civilians) • Permanent Resident Card • Border Crossing Card • DHS-designated enhanced driver's license • Driver's license or other state photo ID card issued by Department of Motor Vehicles or equivalent • Native American Tribal Photo ID • Airline- or airport-issued ID (if issued under a Transportation Security Agency [TSA]-approved security plan) • Foreign government-issued passport (Non-US citizens with US documents such as Permanent Resident Cards may carry these instead of passports.) • Canadian provincial driver's license or Indian and Northern Affairs Canada (INAC) card

	• Transportation Worker Identification Credential (TWIC) – Required for unescorted travel offshore (see OPS0189 TWIC for more information)
Brazil	Acceptable IDs include: • Brazilian Passport • Brazilian Identity Card • Foreign government-issued passport (have to include adequate visa for offshore work)
Trinidad and Tobago	Acceptable IDs include: • Trinidad and Tobago Passport • Trinidad and Tobago Government ID • Trinidad and Tobago Drivers Permit • Foreign government-issued passport or official government ID (must include photo)

2.5 Clothing and PPE

Passengers must wear sleeved shirts and long pants at a minimum. Footwear must fully enclose the toes and the heel of the foot. Hearing protection is provided and shall be worn before entering the flight line and during flight. If required by specific offshore location requirements, work clothing shall be in accordance with HSE0078 Personal Protective Equipment (PPE).

SPLC	All passengers flying to Shell Pipeline owned/operated facilities must wear Flame Retardant Clothing (FRC) due to facility restricted area requirements.
Trinidad and Tobago	Passengers traveling to and from offshore installations are prohibited from wearing safety boots (Steel Tip shoes) on the helicopter.

Headwear shall be stowed in passenger baggage, except for knit caps or thermal headwear authorized as cold weather survival clothing. Survival headwear shall be secured in a pocket of an outer garment.

Baseball caps and other types of hats are always prohibited in the helicopter cabin, on the flight line, and on the helideck.

In cold weather, ask the destination Logistics Coordinator or heliport check-in clerk about additional clothing requirements before departing for the heliport. Refer to OPS0081-PR05, para 3.4 (Outer Garments and Caps)

Brazil	In cold weather, ask the destination Logistics Coordinator or heliport check-in clerk about additional clothing requirements before departing for the heliport.
Canada	For all helicopter flights over water having a temperature of 15°C (59°F) or less: 1. All passengers shall wear a Transport Canada approved helicopter passenger transportation suit system (Cold Water Helicopter Immersion Suit). 2. All passengers shall wear long pants, long sleeve shirts (no collar) and socks under the cold water helicopter passenger transportation suit system. 3. All passengers shall possess an approved emergency underwater breathing apparatus (EUBA) that is in a pocket or pouch that is worn with, and attached to, the person's helicopter passenger transportation suit system. 4. All passengers shall have their helicopter passenger transportation suit system hoods donned and fully zipped when directed by the pilot-in-command of the aircraft. The pilot-in-command shall announce "Hoods On and Fully Zipped" to passengers via the aircraft's cabin speaker intercom system or via a suitable alternate visual signal in preparation for the critical phases of offshore flight as defined below: a. Offshore Helideck Landings: From the Initial Approach Fix of an instrument approach procedure, or prior to descending

	below 1,500' above mean sea level for the purposes of commencing a visual approach, until the aircraft has landed aboard the helideck and all aircraft motion has ceased. b. Offshore Helideck Departures: Prior to take-off and until the aircraft has reached at least 1,500' mean sea level. c. En route Offshore Precautionary or Emergency Situations: At all times at the discretion of the pilot-in-command.
Gulf of Mexico	See OPS0081-PR05.
Trinidad and Tobago	In cold weather, ask the destination Logistics Coordinator or heliport check-in clerk about additional clothing requirements before departing for the heliport.

3 Check-In and Boarding

3.1 Report Time

Report time is 60 minutes before flight departure. Arrival 60 to 90 minutes before flight departure is preferred to avoid excessive waiting time.

3.2 Arriving Late

Passengers arriving less than 60 minutes before departure may not be guaranteed a seat on the aircraft. Late arrivers must notify their Shell supervisor or the Shell dispatcher by telephone no later than 60 minutes before flight departure to allow time to coordinate with all destinations affected by the potential delay.

Aircraft will only be held with the approval of the passenger's facility Person in Charge (PIC)/Offshore Installation Manager (OIM)/Vessel Master (VM), the concurrence of all PICs/OIMs/VMs on the flight route, and, if required, all destinations scheduled for that aircraft for the remainder of the day. The PIC/OIM/VM is responsible for acquiring all these approvals before an overall approval for delay is granted.

3.3 Check-In

Passengers shall check-in at the check-in counter upon arrival at the heliport, or as directed by their facility's Logistics Coordinator. Passengers shall declare all hazardous material cargo (see OPS0081-PR02 Cargo, Baggage, and Personal Items).

Passenger and baggage weights are subject to random checks when returning from offshore. Compliance is mandatory.

3.4 Security Screening

Once the flight is called, passengers shall proceed to the designated security checkpoint with picture ID. Remember to place metal and other loose items in the basket provided before entering the screening portal.

3.5 On the Flight Line or Helideck

Passengers are not permitted on the flight line or helideck unless escorted by a Helicopter Landing Officer (HLO). Passengers shall follow all HLO directions.

WARNING: Never walk toward the tail or 12 o'clock (nose) position of the aircraft.

Be aware of wind and helideck conditions, as the helideck might be slippery. If an item is blown away by the wind, do not chase it.

Passenger bags will normally be moved to and from the helicopter by flight line- or helideck personnel. DO NOT attempt to retrieve baggage on the flight line or helideck. When asked to carry baggage to the helicopter, do not open baggage on the flight line or helideck. Hand baggage to the HLO or the attendant standing by the baggage compartment before entering the helicopter cabin.

4 In-Flight and Disembarking

4.1 On Board

Once inside the helicopter, passengers shall be seated, securely fasten restraint harnesses, assure that at least one type of hearing protection is worn at all times, and follow requirements for in-flight conduct.

Trinidad and Tobago	Passengers are required to wear double barrier hearing protection at all times. Both disposable ear plugs and ear muffs, referred to as double ear protection, are available to all passengers for mandatory wear on helicopter flights.

4.2 Passenger Silence

Passengers shall be silent during departure/approach briefings and during Pilot commands or briefings.

4.3 Doors and Exits

Passengers shall not lean against or try to open emergency exits or any windows except in case of emergency. Passengers shall not open the helicopter door unless authorized by the pilot, flight attendant, or HLO.

4.4 Disembarking

Passengers shall remain seated with seatbelts securely fastened until told to disembark the aircraft by the Pilot or HLO. Passengers shall meet the requirements from section 3.5, On the Flight Line or Helideck, while disembarking as well as boarding.

TOOL OPS0081-PR01-TO.01

Exit Window Fit Test Reference

Fit Testing

Out-bound passengers shall be fit tested whenever the aircraft type used for the passenger's transportation has window sizes that could prevent certain passengers from safe and effective egress in an emergency situation while wearing the appropriate PPE for the area of operations (see OPS0081-PR01 paragraph 1.4). The Sikorsky S-92 secondary egress windows requires exit window fit testing. Exit window fit testing procedures for passengers being transported are shown below.

Gulf of Mexico	**<u>Sikorsky S-92</u>**
	
	The Sikorsky S-92 secondary egress windows require all passengers to be window fit tested using aircraft type specific window templates. Out-bound passengers will be fit tested as follows:
	
	• Fit tests will be done while wearing passenger life vests and any other required survival equipment or clothing.
	• Fit tests will be done privately.
	• Female passengers shall have a female witness in the room during testing.
	• Test results will be recorded in Helipass, the manifesting process, or equivalent software in use.
	• Recurring travelers will not be retested unless:
	  ○ a weight gain of 15 lbs (7 kg) or more, or a weight loss of 20 lbs (9 kg) or more is noted, comparing current weight with previous travel weights or
	  ○ heliport personnel deem another fit test is necessary based on initial observation.

Canada (Nova Scotia)	Fit testing will not be performed using window templates. The fitted helicopter passenger transportation suit system size will be used to meet the requirements for window fit testing. Sizes will be recorded in Helipass or equivalent software in use. See Seat Assignment paragraph below)

Seat Assignment

Pilots/HLOs will assign seats based on the number of passengers and fit test results as follows:

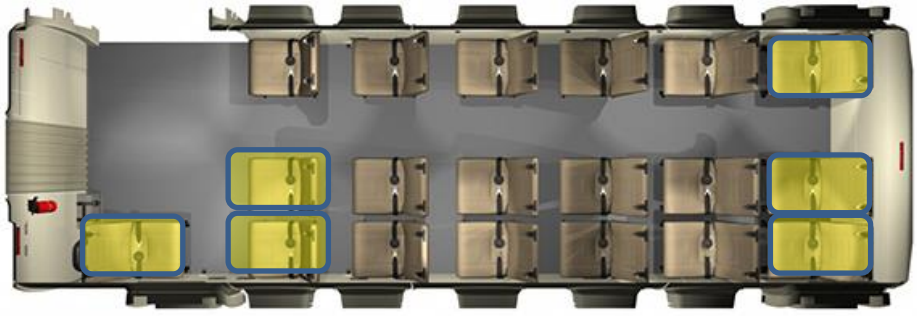
- Passengers deemed unable to safely egress through certain emergency exits shall not be assigned seats in those rows.
- Passengers who cannot be assigned a seat will remain behind to take the next available flight to their destination.
- Passengers shall follow the Pilot/HLO's seating instructions.

- Passengers shall refuse seats in rows where they know they should not be seated.
- Passengers refusing to occupy their assigned seats will be removed from the helicopter and referred to their employer (for Contractors) or manager (for Shell employees) for resolution.

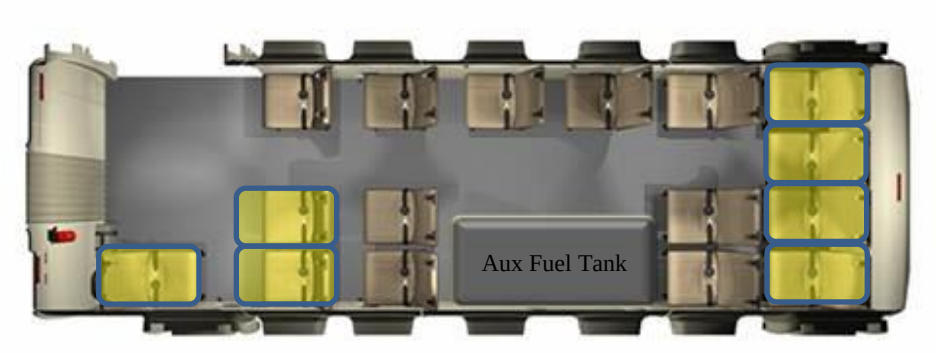
AgustaWestland AW-139 helicopter seat assignment is based on load distribution in the cabin. The HLO or pilot will seat passengers to keep aircraft center of gravity within the allowed range. Larger passengers will usually be asked to occupy either the middle or front row.

The AW-139 windows are considered suitable for egress by all passengers that have completed a Shell accepted HUET training course. Therefore, window fit testing for the AW-139 will not be necessary.

The windows in the AW-139 are the emergency exits. Cabin doors are not to be opened during an emergency as they might damage the floats.

Gulf of Mexico	**Sikorsky S-92** Any passenger with an oversized indication in the Helipass manifest will be directed to the front of the line of passengers before walking to the helicopter in order to sit in specific seats. The six seats designated for these passengers, which are located immediately adjacent to designated emergency exits, are: 1) the three seats in the back row, 2) the rear facing seat in the front row and 3) both port-side seats in the second row (see yellow indication in figure below).  HLO or flight crew will direct passenger with an oversized indication in the Helipass manifest to their designated seats. NOTE: Any passenger with an “N” indication on the manifest shall have an approved HUET variance in the possession of the heliport Dispatcher prior to being manifested on the flight.
Canada (Nova Scotia)	**Sikorsky S-92** Any passenger with a 2XL or larger survival suit will be directed to the front of the line of passengers before walking to the helicopter in order to sit in specific seats. The seven seats designated for these passengers are the four seats in the back, the rear facing seat in the

front row, and both port-side seats in the second row (see yellow indication in figure below).



The headrests of these seats are marked with tape (see pictures below).

PROCEDURE OPS0081-PR02

CARGO, BAGGAGE, AND PERSONAL ITEMS

1 Cargo Requirements

1.1 Emergency and Survival Equipment

Required emergency and survival equipment is specified in helicopter provider contracts, based on requirements in the SGRAO Air Operator Requirements. Equipment will vary depending on the locale and nature of the flights. Aircrew shall be familiar with items on their flight.

1.2 Cargo Weight

The pilot shall ensure that the aircraft is loaded within weight and center of gravity (cg) limits prescribed in aircraft flight manuals. Pilots shall not be compelled to exceed weight and balance limits. The pilot or dispatcher may require passenger or baggage removal to ensure safe flight operations.

Passenger, baggage, and equipment weights used for this purpose shall be actual measured weights unless Americas-Air Transport approves the use of estimated weights.

Heavy duty scales shall be provided at all terminals and permanently manned locations, and shall be calibrated annually.

The weigh-in of passengers, baggage, and equipment shall take place just prior to flight under the supervision of an assigned responsible party in order to assure accurate weights are manifested. Passengers shall be segregated from their baggage and equipment between weigh-in and boarding to prevent potential altering of the actual weights.

NOTE:
A practice often seen at offshore locations is weigh-in the evening prior to flight and/or an honor system where the passenger writes down the weights without actual weigh-in or supervision. These practices are non-compliant with Shell Group Requirements and shall be abolished.

1.3 Coordinating Cargo Shipments

Cargo shipped to or from offshore facilities by air shall be coordinated between the offshore Logistics Coordinator and the appropriate origin/destination heliport Dispatcher before cargo will be accepted at the heliport or by the Logistics Coordinator for shipment. Cargo shipment priority will be determined by the offshore Logistics Coordinator and the dispatcher. For all cargo to be air transported offshore, the offshore Logistics Coordinator will provide the Dispatcher with the appropriate Business Unit material shipment request form. Once the form is received, the Dispatcher will make cargo reservations for all outbound cargo in the appropriate logistics management system (e.g. Helipass or Star).

For inbound cargo, a reservation for that cargo must be entered into the reservation/manifesting system (e.g. Helipass or Star) by the Logistics Coordinator. No cargo will be released for shipment from the offshore location to the onshore heliport until the appropriate form is received by the dispatcher.

Cargo that does NOT have the appropriate form and has NOT been previously coordinated will be rejected.

1.4 "HOT Cargo"

All "Hot Cargo" shall be coordinated through the Logistics Coordinator, and will necessitate a material shipment request form to be submitted to the Dispatcher. The "Hot Cargo" item shall only be shipped after the appropriate paperwork is filled out and the material shipment request form is received by the Dispatcher.

1.5 Accompanied Cargo

All accompanied cargo will be treated as baggage, and if the accompanying passenger is removed from the flight, the personal cargo will also be removed from the flight. Personal cargo will NOT require a material shipment request form paperwork because it is treated as baggage. For such cargo, the passenger is personally responsible for proper documentation. Such packages must meet all applicable packaging requirements for air transport or it will be rejected for air transportation.

1.6 Business Mail/Paperwork

The definition of mail/paperwork is official business letters and documents and does NOT include any (personal) packages. All business mail/paperwork shipments are exempt from the cargo shipping rules mentioned above, and will not require coordination or a material shipment request form. However, the standing policy, regarding restrictions on receipt of personal mail/cargo offshore remain in effect which means all personal mail/cargo will be rejected and returned to sender. See link for information regarding personal mail/cargo.

1.7 Personal Mail/Packages

Restrictions on receipt of personal mail/packages offshore remain in effect which means all personal mail/cargo will be rejected and returned to sender. See link for information regarding personal mail/packages.

1.8 Loading/ Unloading Cargo

The Pilot shall be advised before cargo is loaded to, or unloaded from, the helicopter.

Loading or unloading cargo while the rotor blades are turning requires extreme caution. Pipe, poles, and other long items shall be carried horizontally to avoid rotor blades. Rotors shall be stopped when loading items more than 4' long unless members of the helideck team are used and the Pilot in Command has authorized hot loading.

The Helicopter Landing Officer (HLO) or pilot is responsible for the loading, positioning, and securing of material and equipment inside the helicopter.

Passengers shall not attempt to assist the HLO in the loading and unloading of cargo or personal baggage.

For heavy and/or large cargo, the pilots shall be notified before flight and should consider stopping rotors before the cargo is loaded/unloaded. There shall be two helideck team members to assist in loading/unloading any heavy and/or large cargo.

1.9 External and Sling Loads

External and sling loads are not authorized during normal operations in the Americas. They shall be coordinated during the planning process with Americas-Air Transport.

2 Dangerous Goods/Hazardous Materials

2.1 General

Dangerous goods/hazardous materials are referenced in the International Air Transportation Association (IATA) Dangerous Goods Regulations. National governments enforce regulations concerning transport of hazardous materials on aircraft. A copy of these regulations is available upon request.

Dangerous goods/hazardous materials may only be transported by air in accordance with national regulations, and shall be properly packaged and labeled with required documentation provided with the shipment. Unauthorized dangerous goods/hazardous materials delivered for shipment will be refused and returned, and the shipper will be reported to the country's Civil Aviation Authority for action as required by national regulations listed below.

National enforcement body and regulations:

United States	The Department of Transportation (DOT) - Title 49 of the Code of Federal Regulations (CFR) Subchapter C (Parts 171-180)
Canada	Transport Canada - Transportation of Dangerous Goods Regulations
Brazil	Agencia Nacional de Aviação Civil (ANAC) - Regulamento Brasileiro Da Aviação Civil (RBAC) 175: Transportation of Dangerous Goods in Civil Aircraft
Trinidad and Tobago	Trinidad and Tobago Civil Aviation Authority (TTCAA)

2.2 Shipping

Shippers shall comply with all applicable national regulations for shipping documents/placards for packages/cargo. If shipping papers/labels/packaging do not match the classification of the hazardous material when delivered for shipment, the materials will be refused and returned.

Hazardous material shall be labeled as specified in the applicable regulation below.

United States	49 CFR of the DOT Regulations • DOT labels must be printed on or affixed to the surface of the package near the proper shipping name. • Packages containing combustible liquid do not require DOT labels.
Canada	ICAO Document 9284 AN/905: Technical Instructions for the Safe Transport of Dangerous Goods by Air
Brazil	ICAO Document 9284 AN/905: Technical Instructions for the Safe Transport of Dangerous Goods by Air
Trinidad and Tobago	IATA Dangerous Goods Regulations

2.3 Passenger Responsibility

National regulations apply whether packages or luggage are carried onboard or checked. Some dangerous goods/hazardous materials are exempt from the national regulations for transportation in luggage. These exemptions are limited to medicinal and toilet articles in specified maximum quantities and small quantities of certain radioactive materials. Passengers shall declare dangerous goods/hazardous materials at check-in.

Passengers shall prepare their own luggage and it shall remain under their control from packing to check-in. Passengers shall not embark items from other individuals in their personal luggage and shall not accept items from other individuals on the flight, dispatchers, or cargo drivers to ensure no dangerous goods/hazardous materials or prohibited goods are boarded on the flight.

2.4 Pilot Advisement and Authority

All dangerous goods/hazardous materials shall be listed on the manifest accompanied by appropriate documentation for the pilot's review and acceptance. The Pilot has final authority over transporting hazardous cargo.

2.5 Shipping Papers/Package Marking

Shipping papers are required for all dangerous goods/hazardous materials transported and are intended to provide emergency responders with information needed for proper control of transportation accidents involving such items. Papers shall be prepared by the person offering material for transport and kept in the possession of the pilot or readily available.

Shipping papers and package markings shall be in accordance with the appropriate national regulations and legibly printed (manually or mechanically) in English.

2.6 Penalties

Violating national regulations exposes individuals and Shell to severe penalties. For example: In the US, civil and criminal actions are possible, with fines, and a possible prison term for a criminal action.

2.7 Additional Requirements

Consult current national regulations for guidance. Contact Supervisors or HSE Representatives for additional requirements.

3 Passenger Baggage Requirements

3.1 Luggage Type and Condition

Luggage must be suitable for aircraft transport, with minimal wear and tear and no exposed contents. Zippered duffle bags are the preferred luggage.

Plastic bags (e.g. trash bags, shopping bags) may not be used as luggage or for handling clothing and/or cargo near aircraft. They may be used inside luggage to protect contents from moisture as long as no plastic bag is exposed.

3.2 Prohibited Items

These items are either prohibited or require special handling. Additional national regulations may apply. If in doubt, declare items at check-in.

- Illegal Drugs and/or Drug Paraphernalia (see 3.4)
- Unidentifiable Drugs (see 3.4)
- Prescription Medications in Another Person's Name (see 3.4)
- Prescription Medications without a Valid Prescription (see 3.4)
- Expired Medications (see 3.4)
- Medications in Pill Planners or a Different Bottle (see 3.4)
- Foreign Medications in a Prescription Bottle (see 3.4)
- Explosives or fireworks
- Weapons (see 3.5)
- Cigarette lighters (see 3.7)
- E-Cigarette Fluid (see 3.6)
- Batteries (see 3.8 for battery requirements)
- Newspapers (see 4.5 for permitted reading material)
- Beverages (bottles, cans, or otherwise)
- Pornographic material
- Other items that could be deemed inappropriate for travel offshore.

Trinidad and Tobago	In addition to the above mentioned items, the following are normally prohibited offshore and shall not be carried by passengers on offshore flights unless specific approval has been granted: • Cigarettes • Cell phones

3.3 Items that Must Be Declared

These items must be declared and processed through the dispatcher:

- Dangerous goods/hazardous materials (quantities may be limited by national regulation, see Section 2 - Dangerous Goods/Hazardous Materials):
  - Flammable gases, liquids, and solids
  - Corrosives and flammable corrosives
  - Poisons and toxic materials
  - Oxidizers and organic peroxides

- Compressed gas
- Dry ice
- Magnetic materials (see section 3.10)
- Radioactive material

- Permitted cutting and chopping tools (see section 3.5)
- Fragile items and computers (see section 3.9)
- Other items that could be deemed inappropriate for travel offshore. If in doubt, declare items at check-in.

Additional requirements per country are below:

Brazil	All electronic items must be declared with the dispatcher upon check-in.
Trinidad and Tobago	All computers and large electronic devices must be declared by serial number with the dispatcher upon check-in.

3.4 Drugs and Alcohol

Possession or transport of illegal drugs, drug paraphernalia, otherwise legal but illicitly used substances, prescribed or over-the-counter drugs not used for their authorized purpose, and alcoholic beverages is prohibited.

Prescription drugs may be carried in passenger baggage, but passengers shall have proof of valid prescription. Prescription medicine must be in its original packaging, with the original label including the passenger's name.

When a passenger has a pre-existing medical condition where emergency medication could be needed at any time during flight (e.g. heart condition, asthma, etc.), the passenger with the medical condition is allowed to bring the emergency medication onto the helicopter in the cabin on his/her person. See OPS0081-PR-01 Paragraph 2.1 "Fitness to Fly" for further details.

Canada (Nova Scotia)	Prescription or over-the-counter drugs shall be declared and surrendered at check-in. It will then be placed into a plastic sealable bag (e.g. Zip-loc) on which the passenger's name and contact information shall be clearly marked. All plastic bags containing the drugs will be consolidated and placed into a blue medical bag which will then be weighed, added to the Flight Manifest, and transported as cargo. Upon arrival offshore, the blue medical bag will be delivered to medical personnel for follow-on distribution. Upon arrival onshore, the blue medical bag will be delivered to the dispatcher for follow-on distribution.

3.5 Weapons

Weapons, including the following, shall not be carried, except by authorized employees, government officials, or when required as survival equipment:

- Firearms/ammunition
- Tear gas/CS gas
- Pepper spray
- Tasers
- Clubs
- Martial arts items
- Cutting/chopping tools, including knives with a blade longer than 3"

3.6 E-Cigarettes

In the best interest of safe air transportation, the carriage of e-cigarettes in the aircraft baggage compartment is prohibited. E-cigarettes shall not be placed in checked baggage.

E-cigarettes may be carried on the passenger's person in the aircraft cabin; however the use of e-cigarettes on the flight line, the offshore helideck, and in the aircraft cabin is not permitted.

Use of e-cigarettes during flight will be penalized and may result in denial of flight privileges for future flights. E-cigarettes carried in the cabin shall be switched off and safely secured in the passenger's pocket at all times. The following restrictions apply:

United States & Brazil	• Uninstalled, loose, or spare lithium ion batteries associated with e-cigarettes are prohibited and cannot be packed in checked baggage or carried by the passenger in the cabin. • Refills must be packed in their original, unopened packing, or they will be turned away/disposed of at the owner's discretion.
Alaska and Canada	E-cigarettes are not permitted to be carried by passengers in the cabin due to the cold water immersion suit that must be worn.
Trinidad and Tobago	E-cigarettes are not permitted to be carried by passengers on offshore flights.

3.7 Cigarette Lighters

Cigarette lighters are prohibited on all flights, except in the following regions:

United States	One non-torch (Zippo-type) lighter, fueled or un-fueled, may be carried onto the aircraft. Fueled lighters are prohibited in checked baggage unless they are properly enclosed in a DOT-approved case (up to two lighters allowed). • Torch, micro-torch and electrical lighters are prohibited, both on aircraft and in the secured area of the heliport.

3.8 Batteries

All battery types must be transported in accordance with the applicable national and all dangerous goods/hazardous materials regulations.

Special precautions are required for lithium ion batteries. Contact Americas-Air Transport for further guidance.

The air operator has final authority on the approval to ship batteries. See Section 2 – Dangerous Goods/Hazardous Materials for further guidance.

3.9 Fragile Items

Computers and other fragile devices shall be packed in impact resistant cases designed for air transport, or suitably protected in other baggage. Computer bags shall be conspicuously marked with a “Fragile” or other such tag. The helicopter operator may refuse to carry improperly-packaged fragile items. Damaged devices are not the responsibility of Shell or the Air Operator.

3.10 Magnetic Materials

Carriage of magnetic materials is prohibited for flights under Instrument Flight Rules (IFR).

For Visual Flight Rules (VFR) flight, air transport of magnetic materials is restricted as below:

United States	***CFR 49 Subpart B – Preparation of Hazardous Materials for Transportation Part 173.21.*** • The offering for transportation or the transportation by aircraft of any package which has a magnetic field of more than 0.00525 gauss measured at 4.5 m (15') from any surface of the package is forbidden.
Brazil, Canada, and Trinidad and Tobago	***IATA DGR Packing Instruction 953.*** Magnetized material will be accepted only when: • devices such as magnetrons and light meters have been packed so that the polarities of the individual units oppose one another; • permanent magnets, where possible, have keeper bars installed; • the magnetic field strength at a distance of 4.6 m (15') from any point on the surface of the assembled consignment: ○ does not exceed 0.418 A/m (0.00525 gauss), or ○ produces a magnetic compass deflection of 2° or less.

It is the shipper's responsibility to declare magnetic materials at check-in and provide the required packaging, documentation (to include statement that magnetic field requirement is met) and assurance that any magnetic material is safe for air transport.

When required documentation, packaging, labeling and assurance has been satisfactorily presented and accepted by the dispatcher, air transport under VFR is possible; however, please be advised that the actual weather conditions determine if Visual Meteorological Conditions are met and the flight can be conducted under VFR at the time of scheduled air transport.

4 Loose and Personal Items

4.1 Cameras and Large Electronic Devices

Large electronic devices (computers, tablets, etc.) shall be turned off and packed in baggage. Cameras must be secured in baggage unless prior written approval for use in the cabin is obtained from both the Air Operator and Shell.

4.2 Cell Phones and Small Electronic Devices

The use of certain smaller portable electronic devices may be allowed when flying in helicopters as shown below.

United States and Brazil	• Certain smaller portable electronic devices (PEDs) such as smart phones (Android, iPhone, Blackberry, etc.), iPods, MP3 players can be carried in the aircraft cabin and may be used during cruise flight conditions only. • The device must be small enough as to allow storage in a passenger pant or jacket pocket. • The device must be off and secured in a clothing pocket during helicopter safety video briefings, both on and offshore, and transiting to and from the aircraft at the heliport and offshore helideck. • The device must be capable of airplane mode and it shall be shut off and secured in a clothing pocket or stowed in a seat pocket during ground taxi, takeoffs and landings and in turbulent flight conditions where flight crew will direct passengers to shut off and secure the PED. • Use of these devices will only be permitted during cruise flight conditions and must be secured at all times. • If a device is inadvertently dropped, do not remove your seatbelt to retrieve it or ask anyone else to do so. Wait until after landing and instructed to remove your seatbelt before attempting to recover your device. • Lost or damaged devices are not the responsibility of Shell or the Air Operator. • Use of wired in-ear headphones is authorized in line with the use of PEDs (only worn when PED use is authorized). ○ Use of Bluetooth/wireless headphones is prohibited.

	○ The complete set of headphone cables shall be secured in a pant or jacket pocket at all times the PED also needs to be secured. ○ Assure that cabin emergency PA announcement can still be heard when using headphones. • Passengers are responsible for maintaining the security of all items carried onto the aircraft. • No video or other recordings are allowed unless specifically approved by Americas-Air Transport and the Air Operator. • Failure to comply with these instructions could result in denial of access to Americas-Air Transport contracted flights. **<u>Caution:</u>** **Cell phones have resulted in false cockpit caution lights illuminating if a call is transmitted to the phone. It is imperative the phone be in the airplane mode for use during flight.**
Trinidad and Tobago	Cell phones are normally prohibited by the Business Unit and shall not be carried by passengers on offshore flights unless specific approval has been granted. Laptop computers, tablets, and iPod electronic devices are allowed to be transported, but not permitted to be used during flight.

4.3 Purses and Small Valuables

Purses shall not be carried into the passenger cabin, and should be suitable for use as baggage or packed within other baggage. Ensure that valuables (watches, wallets, etc.) are securely carried on your person.

4.4 Jackets and Sweaters

Jackets and sweaters shall be worn or placed in baggage; they may not be carried.

4.5 Reading Material

Reading material carried in the passenger cabin must be bound and compact in size (e.g. books, magazines, day planners, note pads).

Trinidad and Tobago	Reading materials are prohibited by the Business Unit from being carried in the passenger cabin for offshore flights.

4.6 Other Loose Items

Headwear and other loose items shall be packed in baggage.

PROCEDURE OPS0081-PR03

AIR CREW, HELIDECK TEAM, AND LOGISTICS REQUIREMENTS

1 Passenger Security

1.1 Refusing Transport

The pilot shall refuse transport to personnel who do not comply with OPS0081-PR01 Passenger Requirements.

The pilot and Aviation Dispatcher have complete authority to refuse transport to anyone not seeming able to self-egress from the helicopter in case of an emergency, not compliant with the Air Operator's medical protocol that prevents the passenger from flight on a regular passenger transport helicopter, or acting abnormally or irrationally, as if under the influence of drugs, alcohol, etc.

1.2 Manifests

Only properly manifested passengers, baggage, and cargo are allowed on flights. Manifests shall contain passenger names, employers, destinations, accurate number of bags for each passenger, and accurate weights for all passengers, baggage, and cargo.

Actual passenger and baggage weights shall be measured on a heavy duty calibrated scale during check-in, immediately before the flight. Previously collected (prior night) weights and declared weights shall not be used on flight manifests.

If items other than hats, mobile phones, or small electronic devices are added to the baggage after it is weighed, the baggage shall be reweighed.

Pilots, dispatchers, or designated individuals shall complete accurate manifests for flights originating onshore. For flights originating offshore, the facility Logistics Coordinator or designated individual shall ensure that accurate manifests are provided to pilots.

Manifested passenger and baggage weights are subject to random post-flight checks when returning from offshore. Compliance is mandatory.

1.3 Pre-Takeoff Safety Briefing

The pilot shall ensure that passengers are briefed before takeoff on specific helicopter procedures and use of emergency and survival equipment.

2 Flight Planning and Preparation

2.1 Planning Roles and Responsibilities

The table below allocates the responsibilities associated with flight planning and preparation.

Role	Responsibility
Aviation Logistics Planner	• Produce and ensure compliance with the daily flight schedule. • Field and make special flight requests and work through heliport dispatchers to ensure that the flight schedule is executed.
Heliport Dispatcher	• Work with the asset's Logistics Coordinators to populate and optimize each flight. • Coordinate special flights with the Aviation Logistics Planner. • Coordinate air crews to maximize availability and efficiency. • Conduct regular safety and operation meetings with Shell staff. • Ensure that passengers are checked-in and weighed, and baggage is checked before entering the designated briefing area. • Ensure that passengers view the passenger safety briefing video before boarding their offshore flight. • **Gulf of Mexico and Brazil**: ensure that passengers have received Shell accepted Helicopter Underwater Egress Training (HUET) within 4 years of their flight or that a variance is requested and approved in accordance with the Americas-Air Transport HUET Compliance Procedure. • **Canada:** ensure that passengers have received Canadian Association of Petroleum Producers (CAPP) approved Basic Survival Training/HUET within 3 years of their flight or that a variance is requested and approved in accordance with the Americas-Air Transport HUET Compliance Procedures • **Trinidad:** ensure that passengers have received OPITO approved BOSIET/T-BOSIET/FOET/T-FOET within 4 years of their flight or that a variance is requested and approved in accordance with the Americas-Air Transport HUET Compliance Procedure. At a minimum, OPITO approved T-HUET will be required for persons visiting the installations only for a day site visit and not staying overnight. • Ensure that passengers are made aware of their flight time and status.

Offshore Installation Manager (OIM) / Vessel Master (VM) / Person in Charge (PIC)	• Comply with the requirements from OMA 6.01-6.19 and OMA 7.01-7.03.
	• Review and approve final flight schedule as well as all VIP and special flights to the facility.
	• Ensure the minimum number of fully trained Helideck Team members (2 HLOs and 3 HDAs) are on board the facility and ensure they are competency assessed every 2 years (every 3 years in the GOM) for this Safety Critical Role.
	• Appoint personnel to ensure that passengers:
	  • are accurately weighed and manifested and
	  • view the appropriate aircraft type specific passenger safety briefing video prior to boarding their flight.
	• Appoint personnel to ensure Aviation Fuel Quality (if an Aviation Fuel Installation is present at the facility)
	• Facilitate transport and accommodation for annual helideck inspection and/or periodic helideck surface friction tests by an Americas-Air Transport certified helideck inspector.
	• Ensure all helideck team members (HLO and HDAs) are equipped with portable radios and headsets (for HDAs possibly set to receive only) in order to improve helideck safety as the HLO can communicate more effectively with his team, especially when there is no line of sight between helideck team members or at night when hand signals are not visible.

Helicopter Landing Officer (HLO)	• Brief personnel manning the base radio on the following before the first helicopter flight of the day:
	  • Number of flights for the day and scheduled arrival times
	  • Number of passengers departing and arriving on each flight
	• Ensure Fuel Quality Control checks are performed early morning before first flight arrival and samples are available for check by flight crew.

	• Ensure helideck manning level meets manifested person on-board of helicopter (see 2.3). • Prepare helideck and surrounding areas for helicopter landing, refueling (if applicable) and take-off. • Schedule, conduct and document monthly helideck drills/exercises with the helideck team.

2.2 Call Prior to Launch

To ensure that facilities are open and prepared to accept flights, non-emergency unscheduled flights must telephone the Shell Dispatcher. If there is no answer at the Shell dispatch number telephone, contact the destination facility.

This telephone call does not take the place of the mandatory 20-minute, 5-minute, and “Green Deck” radio calls to radio equipped facilities. These radio calls must be made even if a pre-launch telephone call has been placed. See OPS0081-PR03.TO.04 for phone number and frequency listings.

Emergency flights should attempt to make the pre-launch call, but the flight should not be delayed to accomplish this. In emergency situations, a company representative may make this call on behalf of the Pilot.

2.3 Helideck Team Manning General

Helideck team manning shall comply with the Shell Aircraft International (SAI) OMA 6.02 Helideck Manning Requirements for all owned, operated, or contracted helidecks.

- The minimum number of fully trained Helideck Team members, with an up to date competency assessment, required on board a helideck equipped installation or vessel at all times is 2x HLOs and 3x HDAs.

- To ensure the availability of a fully qualified HLO for helicopter operations at all times, a fully qualified alternate HLO shall be available on each hitch (hence the mentioned 2x HLO above).

  - Several installations use onboard Medics to serve as HLO. This practice will most likely prove to be problematic in the event the HLO and/or helideck team is required to respond to an aircraft incident in which post-incident injuries require immediate medical attention. In these cases, the Medic will most likely be attending to personnel injuries vice leading a helideck team that is responsible for executing the required duties associated with aircraft emergency response.

  - It is highly recommended that Medics not be assigned a duty as HLO. If a Medic is assigned as a Primary HLO, a fully qualified alternate HLO shall be available at all times.

On a manned installation with a manual foam system, the minimum required helideck team for helicopter operations on the helideck is 1x HLO + 3x HDAs in all cases.

On a manned installation with an automated/ring-type foam system, the minimum required helideck team for helicopter operations on the helideck may be reduced

to 1x HLO + 2x HDAs with less that twelve (12) occupants in the aircraft (including pilots) for both landing and departing flights.

2.3.1 Upstream Deepwater GOM Helideck Team Manning

Shell Upstream Deepwater GOM Fixed Leg Platforms/Tension Leg Platforms and Spar are equipped with automatic or ring-type firefighting foam systems available on each of their helidecks. The helideck team on these platforms does not need an HDA to man the helideck fire monitor due to the automatic nature of the installed firefighting system. Therefore, helideck manning shall be in accordance with the following:

- 1x HLO + 3x HDAs: landing / takeoff with 12 or more aircraft occupants, including pilots
- 1x HLO + 2x HDAs: landing / takeoff with fewer than 12 aircraft occupants, including pilots

On Normally Unattended Installations (NUIs):

- 1x HLO + 2x HDAs: helicopter landing / takeoff with 12 or more occupants, including pilots.
- 1x HLO + 1x HDA: helicopter landing / takeoff with less than 12 occupants, including pilots

2.3.2 Helideck Team Manning for Refueling Operations

On a manned installation with a manual foam system (automatic or ring-type firefighting foam system is not installed or is (temporarily) unavailable), the manning level requirements for aircraft refueling is 1x HLO + 3x HDAs

When the aviation fuel system is equipped with an operational dead-man switch, refueling operations with 1x HLO + 2x HDAs is authorized IF:

- Helicopter is shut down and between flights with no passengers present on the helideck, OR
- On manned installations with automatic helideck fire systems and helicopter turning with fewer than 12 aircraft occupants, including pilots.

Duties of helideck team members during refueling with and without a dead-man switch equipped system are identified in OPS0081-PR03-TO.02 Helideck Team Manning and Duties Matrix Table

3 Arrival

3.1 Arrival Procedure for Pilot Flying

The table below indicates actions the Pilot Flying (PF) shall perform during helicopter arrival.

Step	Action
1	Transmit the 20-minute call to the facility when helicopter is 20 minutes from landing, relaying aircraft call sign, number of passengers and potential refueling needs. Continuously monitor facility frequency thereafter. *Example: "MC 807, Shell 4 is twenty minutes out with 15 pax, no refueling needed. MC 807."* **NOTE:** **Radio calls are mandatory and must be made "in the blind" on the facility frequency, even if the facility is unmanned. Contact Americas-Air Transport for primary and alternate frequencies.**
2	**Passenger flights (where use of cell phones and small electronic devices is allowed):** If not performed previously, announce via the PA system that all passengers shall turn their PED's OFF and stow them in a jacket or pants pocket.
3	Transmit another call 5 minutes from landing to confirm that landing gear is down and to request a "green deck". *Example: "MC 807, Shell 4 is five minutes out, confirmed landing gear down, and request green deck for MC 807."*
4	If no response by HLO during the orbit or straight-in approach, the pilot shall request a "green deck" again: Example: *"MC 807, Shell 4 confirmed landing gear down, request a "green deck" for MC 807"*
5	Reconfirm landing is gear down and acknowledge the HLO's "green deck" call. *Example: "MC 807, Shell 4, aircraft in sight, landing gear is down, green deck, MC 807."* *Note: The HLO may not be able to confirm that the aircraft is in sight, nor that the landing gear is down when a straight-in approach is being conducted during the night, or during conditions of low ceiling and/or visibility.* **CAUTION:** **DO NOT LAND without responding, unless all required calls were made in the blind with no response on both the primary and alternate frequencies.**
6	When orbiting, pilots must be able to see the intended landing area and visually confirm that the helideck environment is clear, crane(s) secure, and flaring/venting operations have ceased. Additionally, pilots shall perform the following: 1. A helideck reconnaissance that shall include, at a minimum, a 360° orbit around the intended landing area. 2. In order to reduce the possibility of inadvertent flight into instrument meteorological conditions (IMC), a complete 360° orbit is not required when operating in ceilings and visibility conditions of: • Day: Less than 800' above sea level and 3 statute miles • Night: Less than 1000' above sea level and 5 statute miles When an orbit is not being conducted, pilots shall advise the HLO that they will be conducting a straight-in approach for final landing due to reduced ceilings and/or visibility. **CAUTION:** • **Where red strobe helideck status lights are installed at the edge of the helideck, DO NOT LAND unless lights have been turned OFF. If status lights conflict with the HLO's "green deck" call, challenge the radio call and DO NOT LAND until the conflict is resolved. The latest Shell Helideck Update lists helidecks that have a helideck status light system. Additionally, Helideck Information Plates for each helideck (available at http://www.avnotice.com) provide all necessary helideck information, including the availability of helideck status lights.** • **If a new unsafe landing status is identified after the "green deck" confirmation, status lights are switched back ON (after initially being switched OFF). When this change is observed, the Pilot Flying shall immediately perform a go-around and request information concerning the status change from the HLO via radio.**
7	Land the aircraft after confirming safe landing conditions. See OPS0081-PR03-TO.01 for hand and arm signals used to communicate with the Helideck Team.
8	**CANADA ONLY (Offshore):**

Step	Action
	When passengers are wearing helicopter passenger transportation suit systems for cold weather overwater flight, the pilot-in-command shall announce “Hoods On and Fully Zipped” to passengers via the aircraft’s cabin speaker intercom system or via a suitable alternate visual signal in preparation for landing. Passengers shall be instructed to keep their hoods on and fully zipped from the Initial Approach Fix of an instrument approach procedure, or prior to descending below 1,500' above mean sea level for the purposes of commencing a visual approach, until the aircraft has landed aboard the helideck and all aircraft motion has ceased.

3.2 Arrival Procedure for Helideck Team

The table below indicates actions the Helideck Team shall perform during helicopter arrival.

Step	Responsible Party	Action
1	Radio Operator/HLO	Acknowledge 20-minute call and passenger number and relay weather if weather equipment is available. Maintain two-way communication thereafter. *Example: “Shell 4, this is MC 807 copy 20 minutes out, winds are 230 degrees and 5 knots. You have 15 pax inbound. No fuel needed. Report 5 minutes, MC 807.”*
2	Radio Operator if not HLO	Inform HLO that aircraft is inbound, and positively hand-off radio control to HLO before the 5-minute call. Once HLO has taken control, all helideck team members shall wear the portable headset and monitor the radio frequency at all times.
3	HLO/Helideck Team	Muster at least the minimum number of helideck team members based on section 2.3 above. Assign duties for the helideck operation. Move to the Helideck.
4	HLO/Helideck Team	• Inspect helideck to ensure it is ready for helicopter’s arrival. • Remove or secure any loose items that may be impacted by helicopter downwash and/or wake turbulence. • Secure or remove all unsecured objects within a distance twice the “D” value of the helideck measured from the center of the helideck (e.g. S-92 helideck “D” value of 21 meters – distance checked is 2 X 21 = 42 meters). • Secure all items with a large surface area (e.g. plywood and metal sheeting, personnel transfer baskets, box lids, standing metal lockers, super sacks, and other like items) within three times the “D” value of the helideck measured from the center of the helideck (e.g. S-92 helideck “D” value of 21 meters – distance checked is 3 X 21 = 63 meters) • Doors and hatches can be blown shut at a considerable distance from the helideck and these shall be latched during flight operations to prevent personal injury. This includes storage container doors. • Confirm that no hazardous flaring and/or venting operations are being conducted. • Complete any remaining items listed on the asset-specific landing checklist.
5	HLO	Acquire wind speed, direction, and QNH (altimeter reading) at the center of the yellow aiming circle (Touch Down Positioning Marking) using a calibrated handheld anemometer.
6	HLO	At 5-minute call: • Advise approaching aircraft to either continue or hold at a safe distance and altitude away from the facility. • Provide informational updates not relayed during the 20-minute call, including weather information acquired in step 5. *Example: “Shell 4, MC 807, copy five minutes out. Weather update from center of the helideck: wind 230 degrees at 5 knots. Altimeter 2998, continue, MC 807”* **CAUTION:** **DO NOT give green deck at 5-minute call.**

Step	Responsible Party	Action
7	Helideck Team	Move off helideck to a position where helicopter and helideck operations can be positively controlled. All collapsible handrails are lowered when leaving the helideck.
8	HLO	When the aircraft is in sight and the deck is ready for landing, make an "Aircraft in Sight, Landing Gear Down, Green Deck" call and switch off helideck status lights. *Example: "Shell 4, MC 807, aircraft in sight, landing gear is down, green deck, MC 807."* *Note: The HLO may not be able to confirm that the aircraft is in sight, nor that the landing gear is down when a straight-in approach is being conducted during the night, or during conditions of low ceiling and/or visibility.* **NOTES:** • **This is the final affirmation that HLO has taken control of the helideck.** • **When red strobe helideck status lights at the edge of the helideck are flashing, the helideck is not ready for landing. Turning them OFF reinforces the green deck call.** • **Turning the status lights back ON after "green deck" as required indicates an unsafe landing situation and triggers a go-around by the Pilot Flying.** • **The latest Shell Helideck Update and the asset specific Helideck Information Plate list helidecks that have a status light system.**
9	HLO/HDA/ Control Room	In case of an unsafe landing situation, the HLO shall contact flight crew by radio to advise a go-around. Helideck Status lights shall be switched ON by the HDA or Control Room monitoring the radio to provide a further visual cue. *Example: "Shell 4, MC 807, gas release, go around, MC 807"*
10	HLO/HDA/ Pilot Not Flying	***WARNING:*** ***Do not enter helideck until signaled by pilot. Do not enter the helideck if a pilot is getting out of the aircraft, even if signaled in. If aircraft is shutting down, do not enter helideck until blades have completely stopped.*** Before helideck activity begins, chock the tires nearest the baggage compartment on the side of the aircraft closest to the helideck exit. See OPS0081-PR03-TO.01 for hand and arm signals used to communicate with the Pilot Flying.
11	HLO	Establish communication with Pilot. Communication shall include: • Intended exit point • Intended order of business (procedure for baggage handling, cargo handling, passenger control, etc.) • Delivering outbound manifest and Dangerous Goods paperwork. **CAUTION:** **Pilot Not Flying (if outside the aircraft) shall not be asked to handle baggage.**
12	HLO/HDA	Before passengers debark, empty cargo compartment and either line baggage up toward the designated exit for passenger pick up or transport to a staging area. If there is more than one HLO/HDA, one handles baggage while the other tends to the helicopter door and passengers. Handling of baggage and cargo shall be completed prior to opening the cabin door.
13	HLO/HDA	During inclement weather, HLO may stand outside the rotor arc and await passengers while HDA hands passengers their bags as they debark. Another HDA mans the helicopter cabin door. **CAUTION:** **If there is only 1x HLO and 1x HDA, line bags up on the helideck for passenger retrieval. The HLO assumes the position indicated in section 3.4, Figure 2, regardless of weather.**

Step	Responsible Party	Action
		Adding an additional HDA to hand passengers their bags during inclement weather will help protect the baggage.
14	Team Member Manning Cabin Door	After baggage compartment is empty, open cabin door and allow passenger movement.
15	HLO	Stand outside of rotor-arc and remain in sight of the pilot at a position to supervise helideck operations.
16	HLO/HDA	Stand outside of rotor-arc at a 90° angle to the helicopter and direct passengers single-file to the designated exit as show in section 3.4.
17	Team Member Manning the Cabin Door	Collect extra life vests as needed for the next flight and hand them to the HLO or HDA standing outside the rotor-arc once all passengers have debarked.
18	HLO	At a safe distance from the helideck (not on the helideck), ensure that life vests are distributed to embarking passengers. **CAUTION:** **When using Mk-28/Mk-50 vests, ensure that the crotch strap is fastened before passenger movement to avoid tripping/entanglement hazard. Also ensure that the vests are not twisted at the neck, as this can result in improper inflation in case of use.**
19	HLO/HDA	Ensure that extra life vests are securely stored in the dedicated transport bag in the cabin or in the cargo compartment.

3.3 Procedure for Pilot Not Flying to Exit and Re-Enter Aircraft

Flight crew may remain inside the aircraft during the turnaround activities; however, if the Pilot Not Flying wishes to exit the aircraft, the Pilot Not Flying shall exit the aircraft immediately after the chocks have been placed and before helideck team members start their other activities after confirmation by the HLO that the rotor disk area is clear. If the Pilot Not Flying only wishes to exit the aircraft to perform a walk around of the aircraft after all helideck team turnaround activities have been completed, the Pilot Not Flying shall exit the aircraft after all new passengers have boarded the helicopter and after confirmation by the HLO that the rotor disk area is clear. The Pilot Flying shall guard the flight controls during this entire sequence of events and shall not engage in any other activity such as paperwork or flight planning.

Step	Responsible Party	Action
1	HLO	Radio flight crew requesting permission to approach landed helicopter and move under the rotor disk.
2	Pilot Flying	Radio HLO providing permission to approach. Guard flight controls and make sure the Pilot Not Flying remains seated.
3	Pilot Flying	Communicate intentions for Pilot Not Flying to exit the aircraft and if that would occur now or after the turnaround.
4	Pilot Not Flying	Wait until the HLO has cleared the rotor disk area (usually after placing chocks) and has confirmed that no one is under the rotor disk before exiting aircraft.
5	HLO	Communicate by radio, “Rotor disk area clear, Pilot Not Flying can exit.”
6	Pilot Flying	Confirm by radio, “Rotor disk area clear, Pilot Not Flying exiting.”
7	Pilot Not Flying	Use hand signals to communicate with HLO (see OPS0081-PR03-TO.01).
8	Pilot Not Flying	Remain outside the aircraft until all passengers have boarded, final checks around the aircraft have been completed, and HLO has given permission to re-enter the aircraft by positioning himself next to the aircraft door the Pilot Not Flying wishes to open.

9	HLO	Confirm that no one but the Pilot Not Flying is under the rotor disk and communicate to the Pilot Flying, “Rotor disk area clear, Pilot Not Flying can board the aircraft.”
10	Pilot Flying	Guard the flight controls and radio response, “Rotor disk area clear, Pilot Not Flying can board the aircraft.”
11	Pilot Flying	Give Pilot Not Flying “thumbs up” signal. Pilot Not Flying can now enter the aircraft.
12	Pilot Flying	After the Pilot Not Flying is seated, continue with green deck takeoff procedure.

3.4 Coms Examples

Arrival Communication Examples:

Step	Responsible Party	Sample Radio Call
20 Min Call	Pilot Flying	*“MC 807, Shell 4 is twenty minutes out with 15 pax, no refueling needed. MC 807.”*
	Radio Operator/HLO	*“Shell 4, this is MC 807 copy 20 minutes out, winds are 230 degrees and 5 knots. You have 15 pax inbound. No fuel needed. Report 5 minutes, MC 807.”*
5 Min Call	Pilot Flying	*MC 807, Shell 4 is five minutes out, confirmed landing gear down, and request green deck for MC 807.”*
	HLO	*“Shell 4, MC 807, copy five minutes out. Weather update from center of the helideck: wind 230 degrees at 5 knots. Altimeter 2998, continue, MC 807”*
Aircraft in Sight, Green Deck	HLO	*“Shell 4, MC 807, aircraft in sight, landing gear is down, green deck, MC 807.”*
	Pilot Flying	*“MC 807, Shell 4, aircraft in sight, landing gear is down, green deck, MC 807.”*
Unsafe Landing Situation	HLO/HDA/ Control Room	*"Shell 4, MC 807, gas release, go around, MC 807"*

3.5 Debarking Position Diagrams

The figures below indicate where helideck team members shall stand while guiding passengers as they debark.

Figure 1
Unloading – 1x HLO, 3x HDA

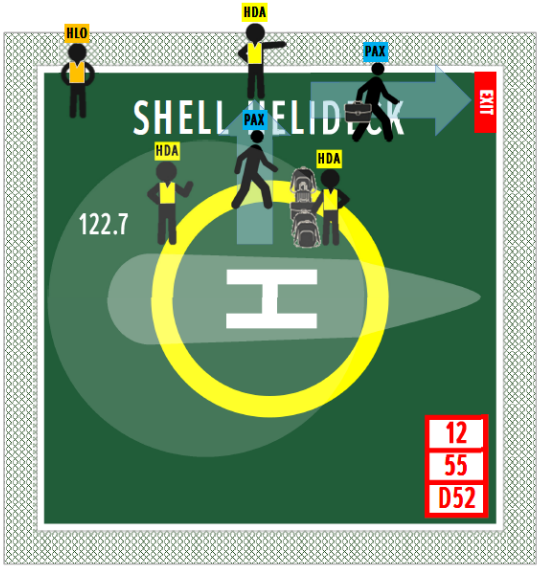


Figure 2
Unloading – 1x HLO and 2x HDA

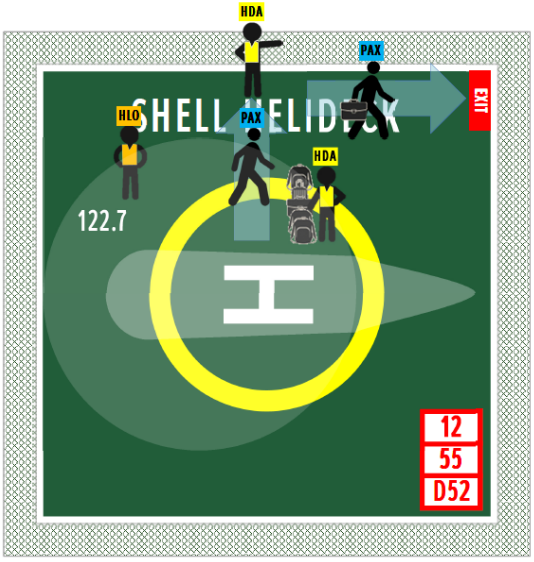


Figure 3
Unloading – 1x HLO, 1x HDA

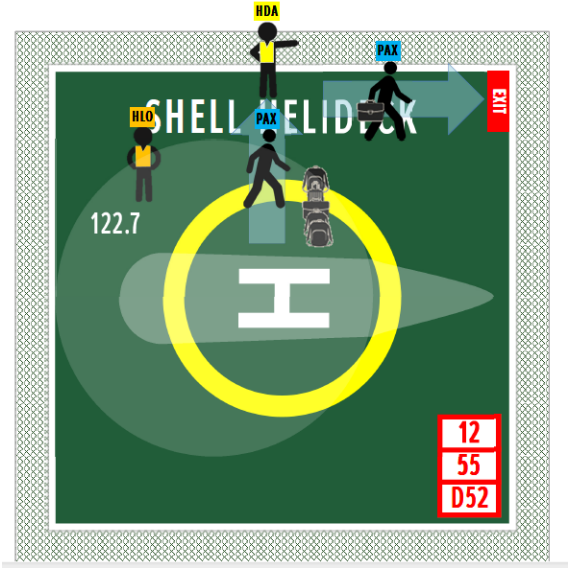
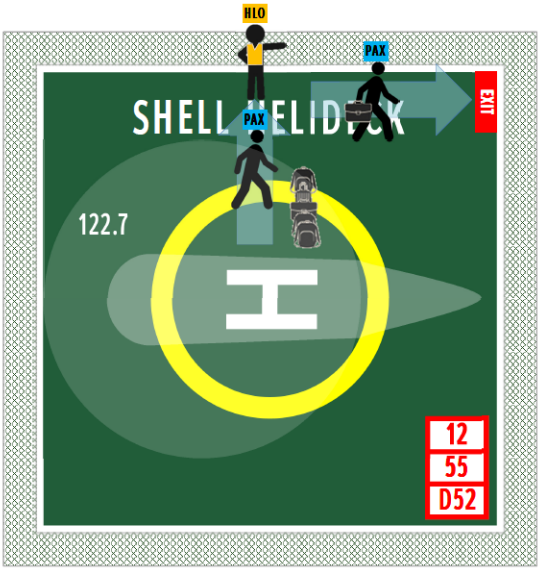


Figure 4
Unloading – (onboard) HLO



4 Departure

4.1 Departure Procedure for Helideck Team

The table below indicates actions the Helideck Team shall perform during helicopter departure.

Step	Responsible Party	Action
1	HLO	Before escorting passengers to the helideck: • Ensure passengers remove headgear and stow in baggage. • Check that passengers have switched mobile phones or electronic devices subsequently in airplane mode and OFF, and have them secured in baggage or in a jacket or pants pocket. Check that no headphones are worn and headphones and associated cables secured in baggage or in a jacket or pants pocket. • Ensure passengers correctly don survival gear (life vests, emergency breathing system, etc.). • Form passengers into a single file line. • Make radio call informing pilot of passenger movement to the helideck.
2	HLO	Lead passengers, monitoring their use of the handrail, single-file to a point outside the rotor arc at a 90° angle to the helicopter. Direct passengers to the HDA monitoring the cabin door (see 4.3). Passenger seating shall follow OPS0081-TO.01 Paragraph Seat Assignment.
3	Helideck Team/HLO	It is preferred to load baggage and cargo prior to passenger movement on the helideck; however at heliports with at least 1x HLO and 1x HDA, a helideck team member standing by the baggage compartment could take baggage from passengers entering the cabin if it has not already been transported to the helicopter, ensuring that passengers will not move towards the tail rotor area. 1x HLO (only acceptable on NUI where HLO arrives/departs on-board of helicopter), the HLO loads baggage after the passengers have entered the helicopter cabin. The HLO remains in a supervisory role until passengers are properly seated and shall not be distracted by bag handling during passenger transfer. **CAUTION:** **If there is only 1x HLO, passengers shall line baggage up on the helideck and the HLO shall assume the position indicated in section 4.3, Figure 4, regardless of weather. Adding an additional HDA to stow baggage during inclement weather will help protect baggage.**
4	HDA	Monitor passenger loading and proper use of restraint harnesses.
5	HLO	When passengers are properly loaded, check the following: • 4-point restraint harnesses are fastened correctly, • Life vests are donned and do not interfere with use of restraint harness, • Passenger use of hearing protection, • Number of passengers in cabin against manifested number of passengers, Additionally, secure loose items in the cabin and close and secure the cabin door.
6	HLO	Clear the Helideck Team from the helideck and assume a safe location prior to Pilot Not Flying entering the aircraft.
7	HLO	Ensure that Pilot Not Flying is in the aircraft. (see section 3.3)
8	HLO	Confirm the deck is still clear and obtain clearance to enter the rotor arc.
9	HLO	Remove and physically show chocks to the pilot. Wait for “thumbs up” reply from one of the pilots.

10	HLO	Provide “Green Deck” call after chocks and helideck team members are cleared from the helideck and handrails are confirmed in the down position. Sample radio call: *HLO: “Shell 4, MC 807 you have a “Green Deck” for take-off, MC 807.”*
11	HLO	Maintain radio communication and stay in the vicinity of the helideck until the helicopter has completely departed and checked off frequency.
12	HLO	Turn helideck status lights back on.

4.2 Departure Procedure for Pilot Flying

The table below indicates actions the Pilot Flying shall perform during helicopter Departure.

Step	Action
1	Check in with HLO or Control Room before going to the helideck for departure.
2	Acknowledge HLO’s “Green Deck” call. *Example: “MC807, Shell 4, copy “Green Deck”, MC 807.”*
3	If there is a significant delay between the initial start-up “Green Deck” and departure (more than normal run-up time), reconfirm the “Green Deck” before taking off.
4	After departure, positively check off frequency with Radio Operator/HLO before contacting in-flight radio.
5	**CANADA ONLY (Offshore)**: When passengers are wearing helicopter passenger transportation suit systems for cold weather overwater flight, the pilot-in-command shall announce “Hoods On and Fully Zipped” to passengers via the aircraft’s cabin speaker intercom system or via a suitable alternate visual signal prior to departure. Passengers shall be instructed to keep their hoods on and fully zipped until the aircraft has reached at least 1,500 feet mean sea level.

4.3 Embarking Position Diagrams

The figures below indicate where helideck team members shall stand while guiding passengers as they embark.

Figure 5
Boarding – 1x HLO, 3x HDAs

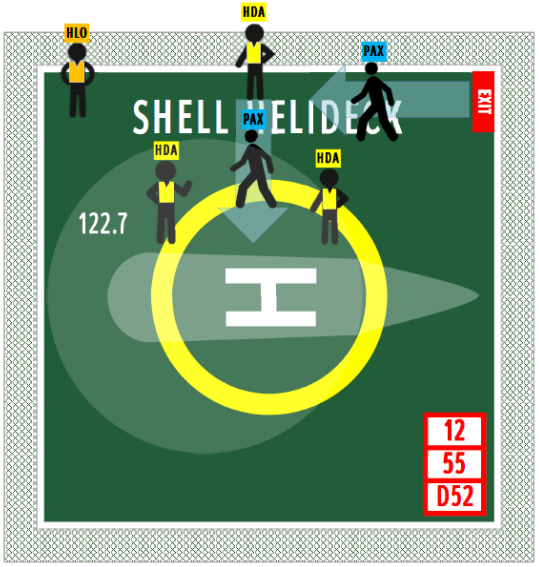


Figure 6
Boarding – 1x HLO, 2x HDA

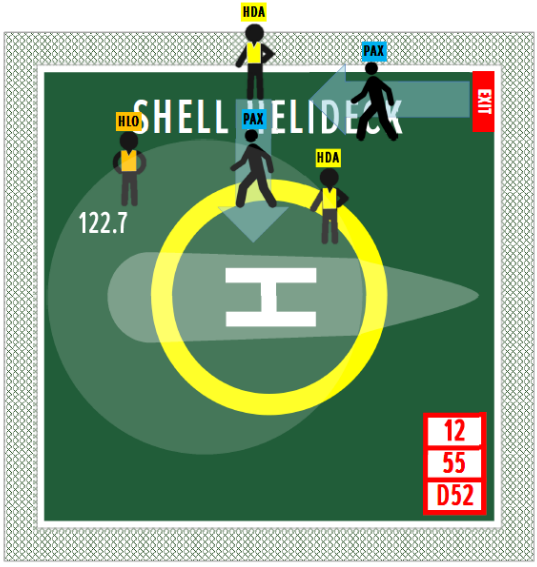


Figure 7
Boarding – 1x HLO, 1x HDAs

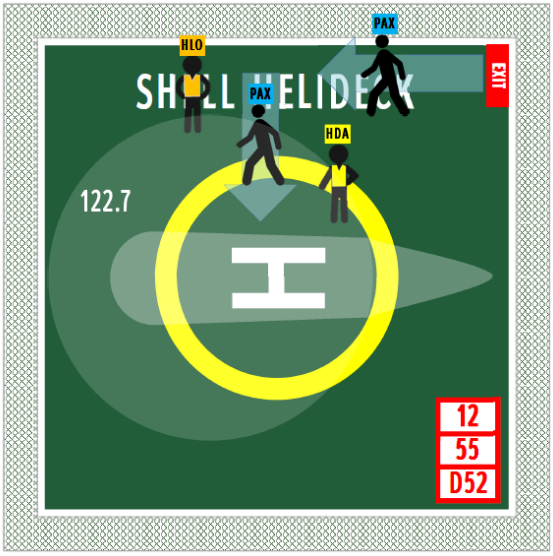
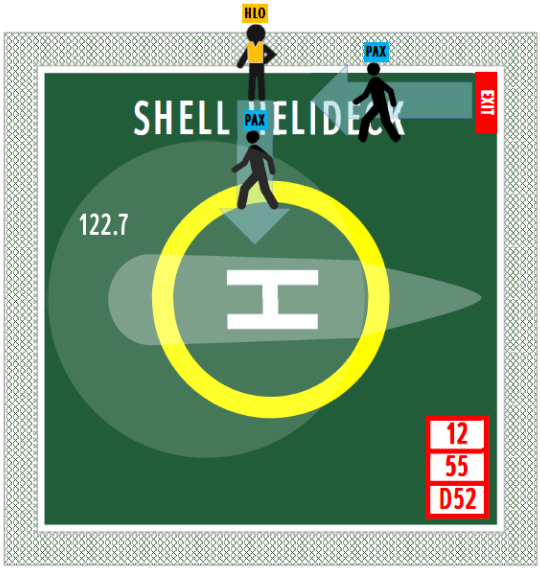


Figure 8
Boarding – (onboard) HLO



5 In-Flight (Arrival and Departure)

5.1 In-Flight Procedures for Pilot Flying

The table below indicates the actions the Pilot Flying shall perform during the helicopter flight.

Step	Action
1	Ensure flight operations are conducted safely and efficiently.
2	Observe Shell requirements for flight operations, including: • Duty hour limits • Flight time limits • Fuel reconciliation • Bird strike avoidance procedures • Shell Offshore Facility Helicopter Procedures • Filling out helideck compliance checklists if necessary
3	Review daily flight schedule with dispatcher.
4	Compute weight and balance limits for each leg based on flight schedule and preliminary manifests.
5	**CANADA ONLY (Offshore)**: When passengers are wearing helicopter passenger transportation suit systems for cold weather overwater flight, at the discretion of the pilot-in-command during en route offshore precautionary or emergency situations, the pilot-in-command shall announce "Hoods On and Fully Zipped" to passengers via the aircraft's cabin speaker intercom system or via a suitable alternate visual signal. Passengers shall be instructed to keep their hoods on and fully zipped until reaching overland flight or the pilot-in-command determines that the fully zipped hoods are no longer required.
6	**Passenger flights (where use of cell phones and small electronic devices is allowed)**: When starting cruise flight, announce via the PA system that all passengers can use their PED's in airplane mode until further notice. Upon start of descent, announce via the PA system that all passengers shall turn their PED's OFF and stow them in a shirt or pants pocket until baggage pick-up at the heliport (not on the flight line).

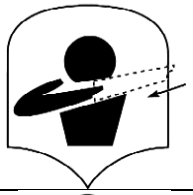
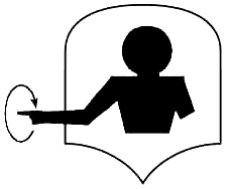
TOOL OPS0081-PR03-TO.01

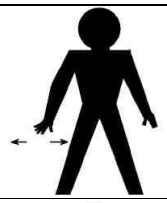
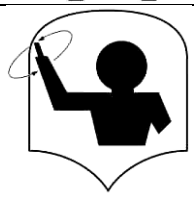
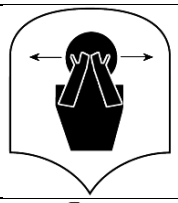
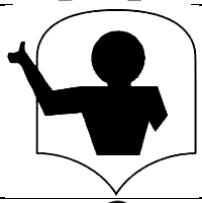
Hand and Arm Signals

Table of Signals

The table below describes hand and arm signals used for communication between Pilot and deck crew on the helideck.

Operation	Description	Meaning of Signal and Action	Signal
Gain attention	Wave hand above shoulder height ***Warning: When under rotor arc, no higher than head height.***	Given by Pilot, HLO, or HDA – Give me your attention	
Stop or Hold	Hold up one or both fists	Given by HLO/HDA – STOP, maintain current state or remain in place until advised	
		Given by Pilot – STOP, Hold in place/Do not enter rotor arc/Do not leave rotor arc	
Wave Off	Wave arms over head ***Warning: Give from a location where you can reach safety if Pilot continues landing.***	WAVE OFF, do not land	
Fire	Make figure 8 in front of body with hand ***Warning: Give from a location where you can reach safety.***	You are on fire!	
HLO/HDA requests to enter/ leave rotor arc	Touch hand to head, then point toward/away from aircraft	Given by HLO/HDA – I want to enter/leave the rotor arc *Do not enter/leave rotor arc until acknowledged.*	
Approval for HLO/HDA to enter rotor arc	Beckoning motion, palm of hand toward face and repetitively bring hand toward face	Given by Pilot – Enter the rotor arc	

Operation	Description	Meaning of Signal and Action	Signal
Approval for HLO/HDA to leave rotor arc	Point away from aircraft	Given by Pilot – Leave the rotor arc	
Insert Chocks	Hands up, thumbs inward. Move thumbs together.	Given by Pilot – Put chocks in place Repeated by HLO – Acknowledge Pilot's signal to chock aircraft	
Chocks in place	Arms extended palms facing inward, then swung from the extended position inward	Given by HLO/HDA – Chocks have been put in place on landing gear	
Aircraft shutdown	Wave hand on edge in front of throat in a cutting motion	Given by Pilot – I am ready to shut down *Do not shut down until acknowledged.*	
		Given by HLO – The helideck is ready for you to shut down *Expect Pilot to shut down upon receiving signal.*	
Passenger unload/load	Two fingers pointed down and moved backwards and forwards in opposite directions as if walking	Given by HLO – Ready to unload/load passengers	
	Beckoning motion, palm of hand toward face and repetitively bring hand toward face	Given by Pilot – Enter the rotor arc	
Begin Fueling	Forefinger pointed horizontally and rotated in a circular motion	Given by Pilot – Begin fueling	
		Given by HLO – We are beginning fueling	

Operation	Description	Meaning of Signal and Action	Signal
Stop Fueling	Hand horizontal palm down, wave hand side to side	Given by Pilot, HLO, or Refueler – Stop fueling	
Starting engines or turning rotors	Hand overhead in a circular motion	Given by Pilot – I am ready to start engines/ turn rotors *Do not start engines/ turn rotors until acknowledged.*	
		Given by HLO – The helideck is ready for you to start engines/turn rotors *Expect Pilot to start engines/turn rotors upon receiving signal.*	
Remove chocks	Hands in front of face, thumbs outward. Move hands outward.	Given by Pilot – Remove my chocks Repeated by HLO – Acknowledge Pilot's signal to remove chocks	
Chocks removed (Facility chocks)	Hold chocks up so Pilot can see them	Given by HLO/HDA – Chocks have been removed	
Chocks removed (Aircraft chocks)	Arms down, thumbs facing outward, then swung outwards	Given by HLO/HDA – Chocks have been removed	
Rotors turning – Preparation for takeoff	Thumbs up	Given by Pilot – I am ready to take off *Do not take off until acknowledged.*	
		Given by HLO – The helideck is ready for you to takeoff *Expect Pilot to commence takeoff upon receiving signal.*	

TOOL OPS0081-PR03-TO.02

Helideck Team Manning Tables

Helideck Team Manning Requirements

The text below show the minimum number of helideck team members required to attend helidecks based on platform type and aircraft occupants. This applies to all helidecks. The text is copied from SGRAO, OMA 6.02 for reference.

MANDATORY REQUIREMENTS:

The OIM/Vessel Master is Accountable for requirements 1 through 3:

1. The minimum number of fully trained Helideck Team members, with an in-date assessment, on board a helideck equipped installation or vessel is 2 HLOs and 3 HDAs.
2. The minimum helideck team to attend helicopter arrivals and departures:
    a. On manned installations with manual monitor helideck fire system, HLO+3 HDAs.
    b. On manned installations with automatic helideck fire systems:
        i. HLO+3 HDAs for helicopter landing/take off with 12 or more aircraft occupants, including pilots.
        ii. HLO+2 HDAs for helicopter landing/take off with fewer than 12 aircraft occupants, including pilots.
    c. On Normally Unattended Installations (NUIs):
        i. HLO+2 HDAs for helicopter landing/take off with 12 or more occupants, including pilots.
        ii. HLO+1 HDA on NUIs for helicopter landing/take off less than 12 occupants, including pilots.
    d. During refueling operations:
        i. HLO+3 HDAs, unless;
        ii. HLO handheld dead man switch is provided in place of the pump operator, then HLO+2 HDAs is allowed if;
            1. Helicopter is shut down and between flights with no passengers present on helideck, or;
            2. On manned installations with automatic helideck fire systems and helicopter landing/take off with fewer than 12 aircraft occupants, including pilots.
3. Helideck Manning less than these minimums requires an Air Transport Manual HSSE& SP Control Framework Exception.

NOTE:

1. **The facility/vessel Duty Holder may designate another Accountable/Responsible party for requirements 1 through 3. The alternate designee and their duties should be clearly identified.**
2. **These requirements are particularly sensitive to national legislation/regulation in some countries (e.g. UK). Where national requirement is more stringent, it shall take precedence over Company requirements.**

TOOL OPS0081-PR03-TO.03

Helicopter Communications Reference

Shell Dispatcher Phone Numbers

Gulf of Mexico

- **Shell UPD-GOM and SPLC**
  - PHI Amelia Heliport: (504) 425-7909/5400
  - PHI Boothville Heliport: (504) 425-8414/8200
  - PHI Houma Heliport: (504) 425-7909/0190
  - PHI Galveston Heliport: (504) 425-0668/0618
- **Search and Rescue & Emergency Medical Services GOM:**
  - Bristow Search and Rescue (SAR) & Medical Evacuation (MEDEVAC) +1-855-844-2367

Brazil

- **CHC Helicopters**
  - Macae Base: +55 22 99999-8262
  - Vitoria Base: +55 27 99854-6750

Canada

- **Canadian Helicopters**
  - Operations Manager: +1 780-668-4608
  - Safety: +1 780-263-3617

Trinidad and Tobago

- **PHI Americas – Piarco International Airport**
  - Shell Trinidad and Tobago Representative: +1 (868) 225-4100

Shell Facility Phone Numbers

Refer to the latest Shell Helideck Update for phone numbers.

Radio Contact Frequencies

Vessels shall contact Americas-Air Transport for radio frequency assignments.

Flight Scheduling

For aviation resource planning questions, contact:

- ***Shell Upstream Deepwater Logistics GOM/Aviation Planner***:
  - Reggie Wycoff: (504) 425-3380
- ***Shell Pipeline Company Logistics Planner:***
  - Jason Popejoy: (907) 230-8578
- ***Brazil Aviation Scheduler:***
  - Diego Alves: +55 21 99002-9335
- ***Trinidad Aviation Scheduler:***
  - Richard Ramsaroop: +1 (868) 739-7301

Additional Information

For additional information, contact the Shell Americas-Air Transport team

Americas-Air Transport Regional Manager Steve Simpson - (504) 425-4595	**Exploration Aviation Manager (Canada, Colombia, Bolivia)** John Jacobs – (504) 425-3402
Aviation Safety and Compliance Manager/Aviation Manager South America Chris Kramer – (504) 425-2120	**Shell Pipeline Co. (SPLC) Aviation Manager** Scott Minaldi – (504) 425-9284
Gulf of Mexico Aviation Manager Bob Jablonski – 504-425-2223	**Aviation Advisor** Steve Summers – (504) 425-7394
Shell NOTAMS are available at http://www.avnotice.com/	

PROCEDURE OPS0081-PR04

HELICOPTER FUELING

1 Fueling Operations

1.1 Training

Only trained and authorized personnel shall participate in fueling operations. Fueling may be performed by the contracted helicopter company's personnel, or the facility Person in Charge (PIC) may designate personnel trained and authorized to conduct fueling operations.

1.2 Rotors Running Refueling Operations

Helicopter Rotors Running Refueling (RRRF) shall be conducted in accordance with the SGRAO. A Pilot shall monitor the controls at all times while rotors are turning.

1.3 Fueling with Passengers on Board

During RRRF operations, passengers may remain on board only with prior approval from the respective Shell Business Unit Air Transport Technical Authority and Pilot in Command (Aircraft PIC), with the following precautions in place:

- Two-way communication shall be maintained by radio or visual signals between the helideck team and Pilot at the controls (see OPS0081-PR03-TO.01 Hand and Arm Signals).
- Passengers shall be briefed on the exit(s) to use and the evacuation route to a safe area.
- The cabin door shall be open on the opposite side of the refueling activity to facilitate potential passenger emergency egress.
- A helideck team member shall be designated and positioned to assist in aircraft evacuation and to guide the passengers to safety in the event of mishap.

Passengers shall not be on board during refueling with engine(s) shut down.

2 Fueling Dispensing Systems

2.1 System Design

The Americas-Air Transport Team shall review fuel system design before installation. This may include consultation with the helicopter operator fuel department or Group Principal Technical Expert (PTE).

2.2 Inspection and Maintenance

Fueling systems owned, contracted, or routinely used by Shell will be inspected at least annually by Shell Aircraft, the Americas-Air Transport Team, or designated representative. Filter replacement and tank cleaning shall be conducted on the required condition/intervals (at least annually) or the fuel system shall be put out of service.

2.3 Design and Operation Guidelines

The following should be used to guide design and operation of fueling systems:

- Shell Group Requirements for Aircraft Operations
- CAP-437 Offshore Helicopter Landing Areas, Chapter 7
- UK HSE Offshore Helideck Design Guidelines
- API Bulletin 1500 Storage and Handling of Aviation Fuels at Airports
- NFPA 407 Standard for Aircraft Fuel Servicing
- FAA Advisory Circular 150/5230 Aircraft Fuel Storage, Handling and Dispensing on Airports
- Primary Contractor procedures

PROCEDURE OPS0081-PR05

GULF OF MEXICO COLD WEATHER HELICOPTER OPERATIONS

1 Introduction

1.1 Purpose

This Procedure describes mitigation of hazards related to operating helicopters in cold weather conditions, such as environmental exposure and hypothermia. Compliance is required under the existing HSSE & SP Control Framework exception for Gulf of Mexico (GOM) helicopter exposure suit use.

1.2 Applicability

This GOM-specific procedure applies to:

- Contracted air operators providing transport to Shell Upstream Deepwater (UPD) and/or SPLC locations in the GOM,
- Shell employees and core contractors flying offshore,
- Contractors and subcontractors flying offshore while working under UPD GOM and/or SPLC contract, and
- Other passengers, including visitors, flying offshore on UPD GOM and/or SPLC contracted helicopters.

This Procedure is applicable during the cold weather season, which starts on the first Monday on or after November 15 and ends on the first Sunday on or after April 15 each year.

1.3 Auditing Requirements

Compliance with this Procedure shall be monitored during the cold weather season and audited annually by the Local Aviation Contract Manager, who shall verify successful audit compliance and report verification to the Shell Upstream Deepwater Regional Aviation Manager.

2 Identification of Hazardous Conditions

2.1 Global and Regulatory Hazard Thresholds

The Shell Group Requirements for Aircraft Operations FOP 01.20, mandates that suitable, aviation type and approved, immersion suits shall be provided and worn by all passengers and crew, at all times for overwater flights, in both helicopters and survey aircraft (e.g. ice monitoring flights etc.), when:

- The expected rescue time (for all survivors), even in tropical conditions, in sea temperatures of +15°C and above, exceeds the expected survival time;
- The sea temperature is consistently at or below +15°C.;
- The sea temperature is consistently at or below +10°C. Additional extra insulation or a suitable Thermal Insulating Garment (TIG) or thermal liners, as well as the suit, shall be worn.

- The sea temperature is consistently at or below +5°C or below and when operating over broken ice. Enhanced TIGs, or enhanced immersion suits, may be required to meet the expected rescue time.

The US Coast Guard (USCG) recommends wet or dry suit use on water if the combined air/water temperature is 120°F or less. (See OSP0081-PR05-TO.01 for a summary of air and water temperatures around the GOM.)

2.2 Action Triggering

The two hazard criteria thresholds that trigger actions are:

- Local surface water temperature at or below 59°F and
- Local combined air/water temperature below 120°F.

A monitoring and mapping tool has been developed to identify if local conditions to provide a message containing maps once a threshold has been crossed. Examples can be found in OPS0081-PR05-TO.02.

3 Hazard Controls

3.1 Water Temperature below 59°F

If possible, the air operator shall plan route around cold water areas using maps from the StormGeo email and continue flying.

If flights over water ≤59°F cannot be avoided:

- Suspend flights from/to affected heliport-offshore location pairs and
- Convene a Review Team (UPD GoM GM Safety & Environment or representative, Platform Leadership Team representative, Wells Deepwater GoM representative, Air Transport Assurance, and Logistics-Aviation Operations representative) to identify essential flights per the table below.

Sea State Does Not Exceed Float Certification Limits		**Sea State Exceeds Float Certification Limits**
Combined Air/Water Temp between 100°F and 120°F	**Combined Air/Water Temp less than 100°F**	
➢ Conduct essential flights. ➢ Put SAR assets on high alert and reposition to optimize response. ➢ Contracted air operators conduct stringent flight following.	➢ Postpone essential flights until combined air/water temp >100°F (e.g. until a warmer part of the day).	➢ Cease all flight operations from/to affected heliport-offshore location pair(s).

NOTE:
See OPS0081-PR05-TO.03 Float Certification Limits.

3.2 Combined Air/Water Temperature below 120°F

For combined air/water temperature <120°F, passengers and flight crew shall wear appropriate outer garments during flights from/to affected heliport-offshore location pair(s). Passengers not wearing appropriate garments shall be denied transport.

3.3 Icing Conditions

Flight operations are not permitted during icing conditions.

3.4 Outer Garments and Caps

Need for an appropriate outer garment shall be displayed at heliports and communicated to passengers departing offshore locations during flight check-in.

Appropriate outer garments provide an additional layer of clothing with long sleeves (e.g. jackets or coats) that would be worn in cold and wet conditions, such as hunting or boating in the winter.

Helicopter Landing Officers (HLOs) shall deny transport to passengers not wearing an appropriate outer garment when required.

Knit caps or other thermal headwear are allowed and recommended, but may only be brought onto an aircraft completely secured in the pocket of an outer garment.

Baseball caps and other hats are not allowed.

Heliport personnel, Offshore HLOs and logistics coordinators will strictly enforce this rule.

TOOL OPS0081-PR05-TO.01

Average Air/Water Temperatures around the GOM

Average Air and Water Temperatures

The tables below show a summary of air and water temperatures around the Gulf of Mexico (GOM). Data is taken from a 2008 study.

Red highlighted cells indicate conditions under which wet or dry suit use is mandatory.

For the GOM there is an HSSE&SP Control Framework Exception in place that includes mitigation measures for cold weather operations to ALARP. (see OPS0081-PR05).

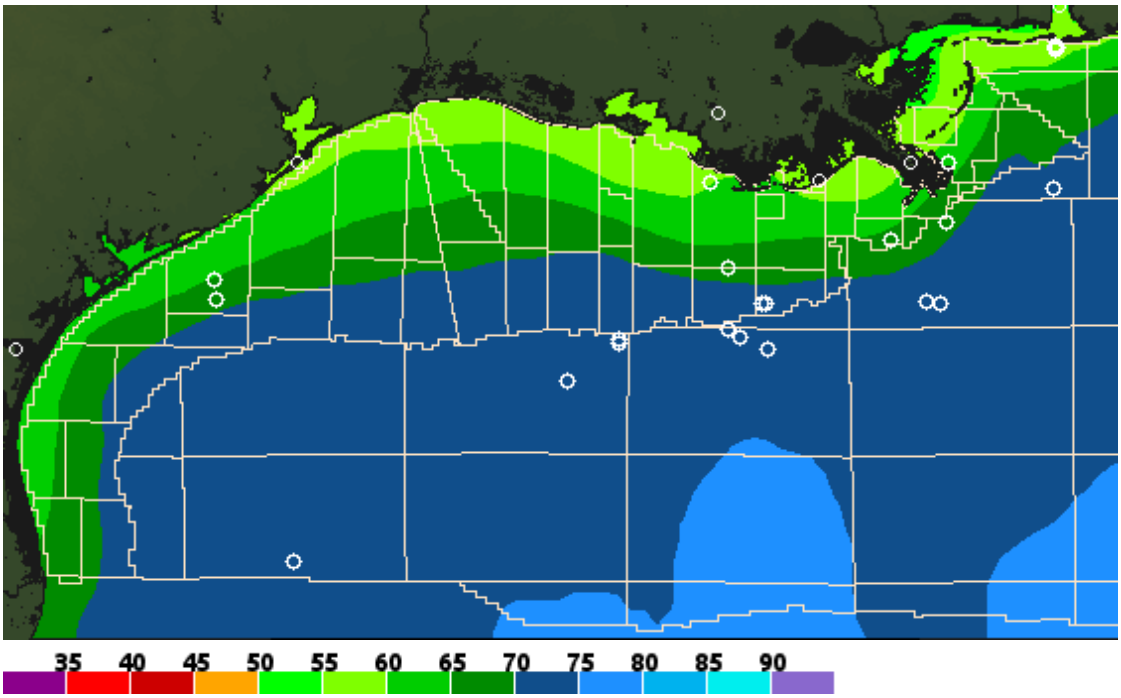
Belle Chasse/Eugene Island												
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Average Low Air Temperature (°F)	*42*	*45*	*51*	*58*	*66*	*71*	*73*	*73*	*70*	*60*	*51*	*45*
Average Water Temperature (°F)	*51*	*53*	*60*	*68*	*76*	*83*	*85*	*85*	*82*	*74*	*63*	*55*
Combined Air/Water Temperature (°F)	*93*	*98*	*111*	*126*	*142*	*154*	*158*	*158*	*152*	*134*	*114*	*100*

Galveston												
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Average Low Air Temperature (°F)	*48*	*50*	*57*	*65*	*72*	*77*	*79*	*79*	*75*	*68*	*59*	*51*
Average Water Temperature (°F)	*54*	*55*	*61*	*71*	*78*	*83*	*86*	*86*	*83*	*75*	*67*	*59*
Combined Air/Water Temperature (°F)	*102*	*105*	*118*	*136*	*150*	*160*	*165*	*165*	*158*	*143*	*126*	*110*

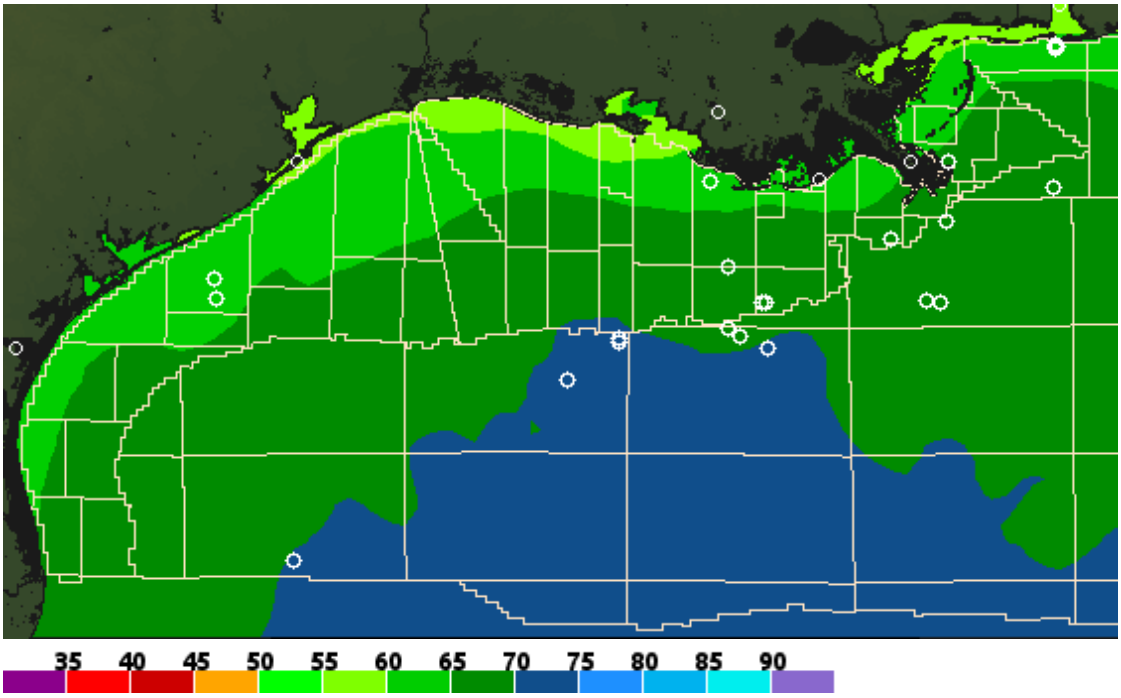
TOOL OPS0081-PR05-TO.02

Example StormGeo Tool Output

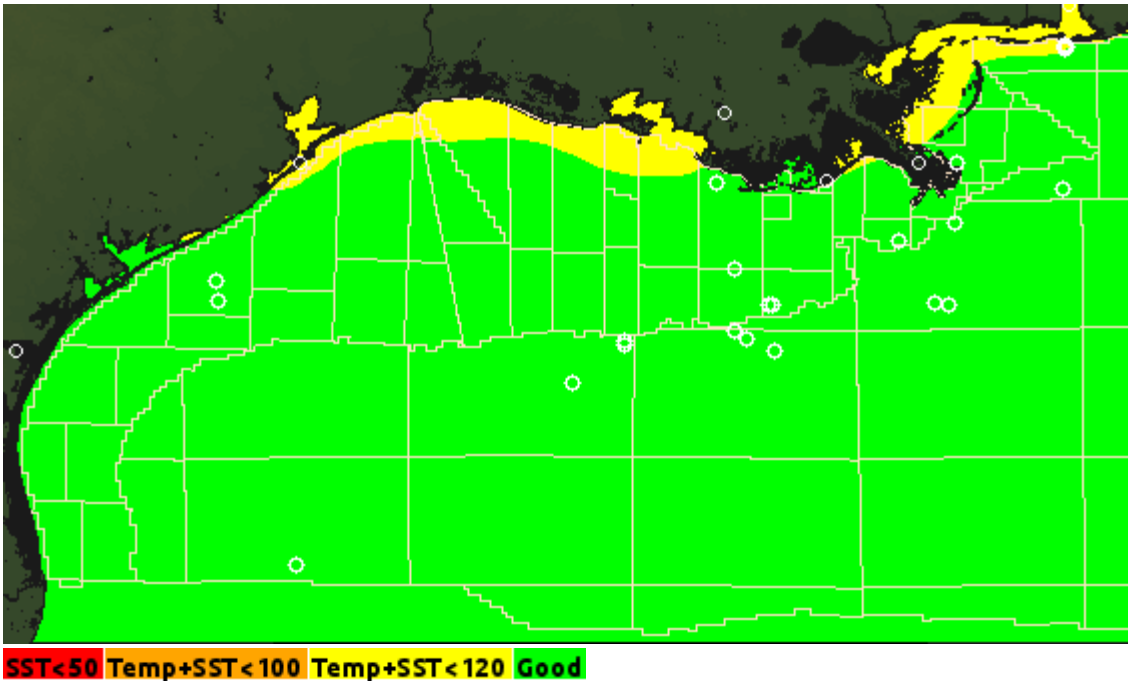
Sea Surface Temperatures Map



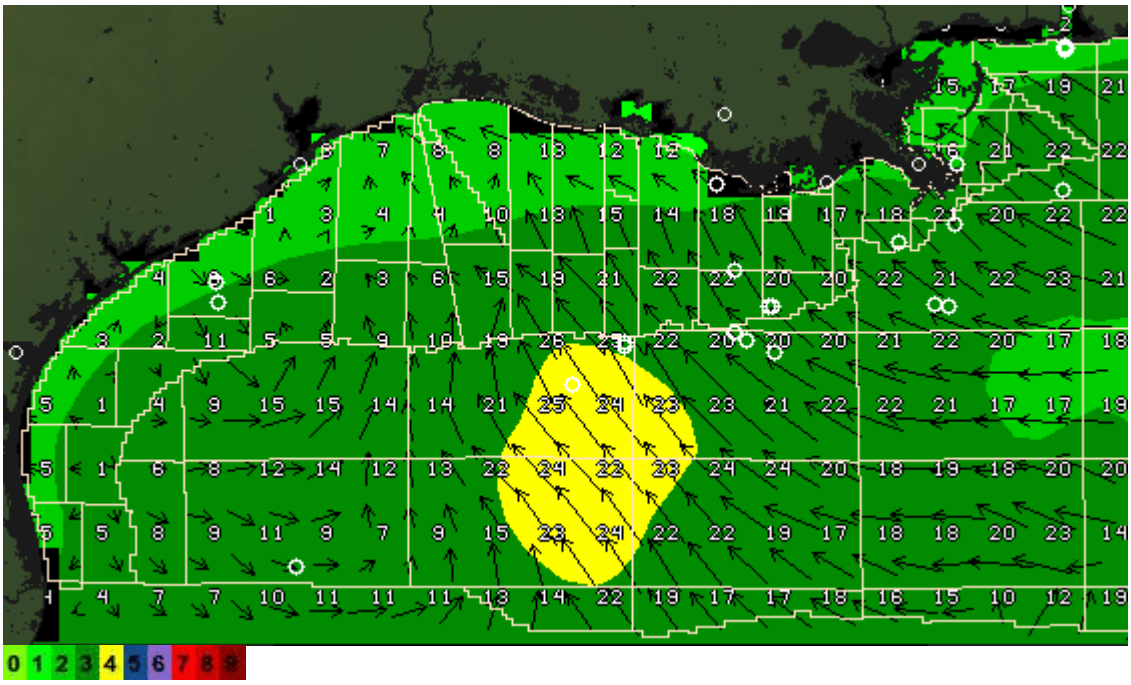
2-Meter Air Temperatures



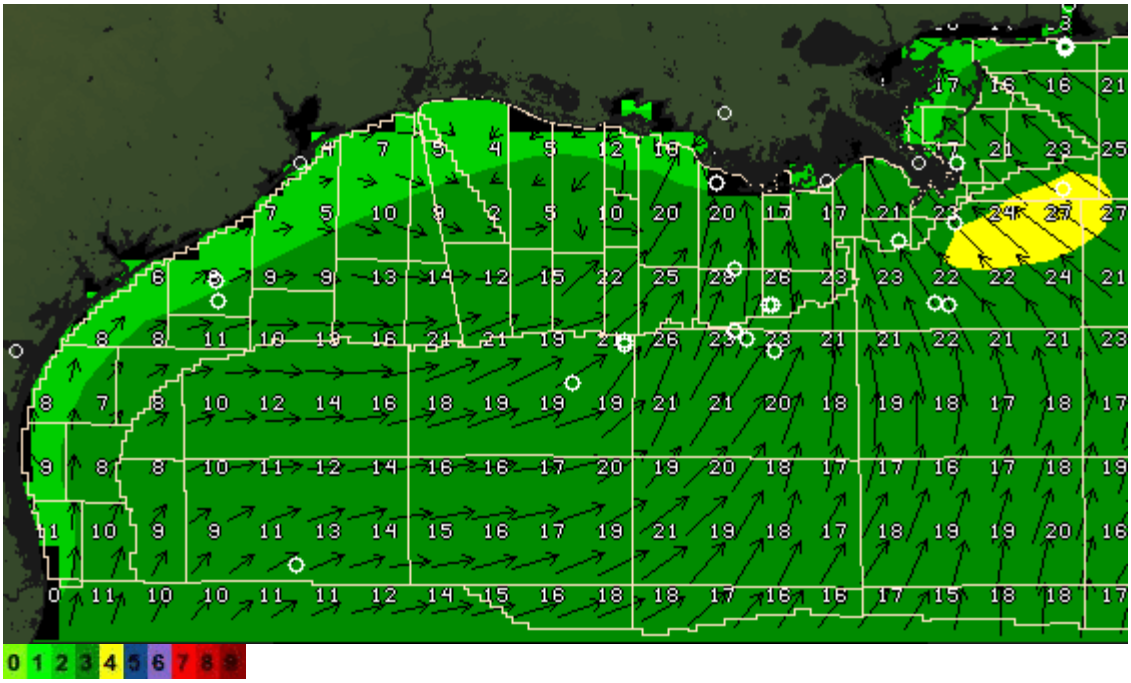
Overall Temperature Status (Combined Sea Surface Temp and Air Temp)



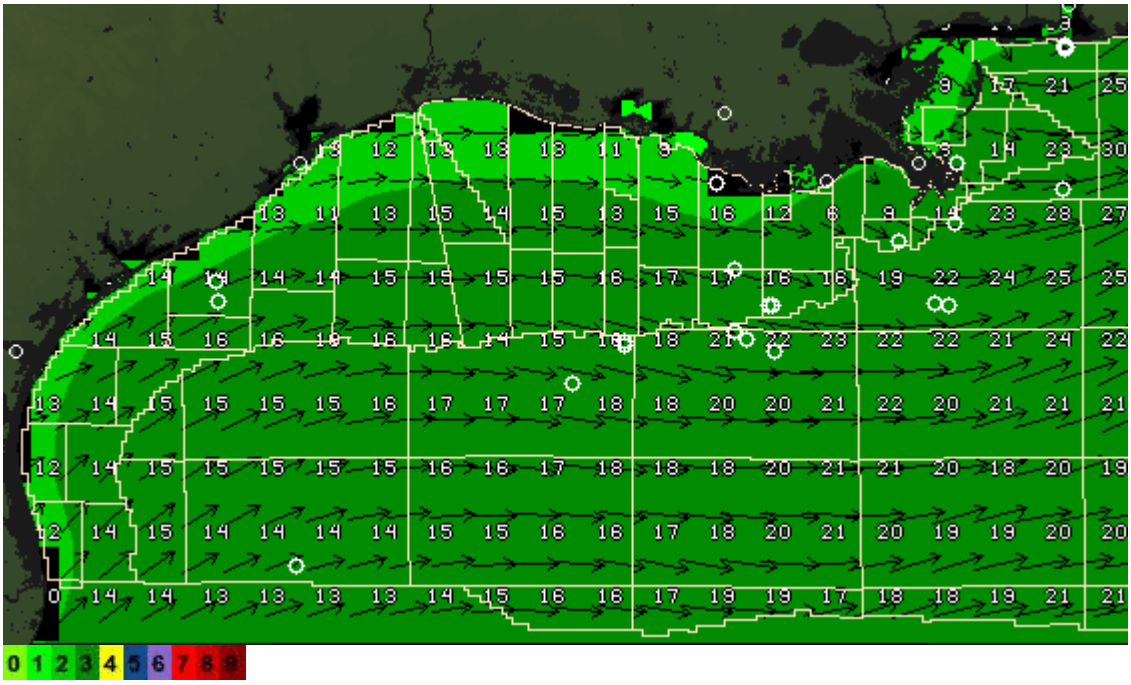
Current Winds/Seas



6-Hour Winds/Seas Forecast



12-Hour Winds/Seas Forecast



Float Certification Limits

Float Certification Limits

The table below shows the helicopter float certification limits for offshore helicopters currently in the Shell Americas-Air Transport contracted inventory.

Helicopter Type	Demonstrated and Approved
AW-139	Sea State 6
S-92	Sea State 5 for Shell contracted passenger/cargo S-92s in the GOM Sea State 6 for SAR-MEDEVAC S-92 in the GOM Sea State 6 for Shell contracted S-92s in other areas if sponson floats are installed (e.g. Canada (Nova Scotia))
EC-135	Sea State 4
H-145	Sea State 6

WMO Sea States

The table below provides an explanation of World Meteorological Organization (WMO) sea states.

WMO Sea State Code	Wave height	Characteristics
0	0 meters (0 ft.)	Calm (glassy)
1	0 to 0.1 meters (0 to 1/3 ft.)	Calm (rippled)
2	0.1 to 0.5 meters (1/3 to 1 2/3 ft.)	Smooth (wavelets)
3	0.5 to 1.25 meters (1 2/3 to 4 ft.)	Slight
4	1.25 to 2.5 meters (4 to 8 ft.)	Moderate
5	2.5 to 4 meters (8 to 13 ft.)	Rough
6	4 to 6 meters (13 to 20 ft.)	Very rough
7	6 to 9 meters (20 to 30 ft.)	High
8	9 to 14 meters (30 to 46 ft.)	Very high
9	Over 14 meters (Over 46 ft.)	Phenomenal

PROCEDURE OPS0081-PR06

Monthly Helideck Team Drills

1 Purpose

Monthly helideck team drills meet Shell Group Helideck Management requirements and ensure team competence in:

- routine aircraft handling responsibilities and
- duties in the event of helideck emergencies.

2 Scheduling

Helicopter Landing Officers (HLOs) on each shift/hitch shall create a Helideck Drill Schedule (OPS0081-PR06-TO.01) for the year and submit to Americas-Air Transport by February 1st each year.

3 Safety

Drills shall start with a safety brief to discuss and address potential hazards and the requirement to stop the drill if hazardous conditions develop.

A Safety Observer should be assigned to observe and stop the drill if a hazardous condition develops. The Safety Observer should fill out the Drill Record (OPS0081-PR06-TO.02) during the drill (see 5 Documentation).

4 Execution and Learning

Each helideck team on each hitch/shift shall conduct and document monthly drills covering normal and emergency helideck operations. All HLOs shall participate and all Helideck Assistants (HDAs) should participate in each drill. Some scenarios require additional facility personnel.

Required and suggested scenarios for normal and emergency response are shown in Helideck Drill Scenarios (OPS0081-PR06-TO.03). A facility-wide Incident Command System (ICS) muster should be conducted in conjunction with an emergency scenario at least once a year.

Drills shall end with a participant debrief to identify safety issues encountered and areas for improvement. Resulting action items shall be noted on the Drill Record and tracked and closed according to facility procedures. Evidence of action item closure shall be attached to the Drill Record.

5 Documentation

The drill schedule and completed drills shall be documented, preferably using the Helideck Drill Schedule and Drill Record forms.

Documentation shall be held for 2 years and will be inspected during the annual helideck inspection. Drill schedules will be compared with documented drills, and action item closure evidence will be reviewed.

TOOL OPS0081-PR06-TO.01

Helideck Drill Schedule

Retention Retain for 2 years.

Year		
Facility		
Hitch/Shift		
Prepared by	(Name)	(Date)

Month	Scenario	Date Conducted
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

TOOL OPS0081-PR06-TO.02

Drill Record

Retention Retain for 2 years.

Facility:	**Hitch:**	**Date: / / 20____**
Scenario trained:		
Safety briefing	What was discussed?	

Participants (by name):			
Safety observer			
HLO (All assigned HLOs required to participate)	1.	**HDA**	1.
	2.		2.
			3.
			4.
Other participants			

Exercise summary of events:

Time	Event	Improvement required?
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

Debrief action items:

Action Item	Responsible Party	Deadline	Closed*
			☐
			☐
			☐
			☐
			☐

*Attach closure evidence to this record

Date: / / 20___ Signed: _____ Name (HLO): _____

TOOL OPS0081-PR06-TO.03

Helideck Drill Scenarios

Normal Operations		
Required	Preparing helideck for helideck operations	• Review daily and pre-landing helideck inspections. (HLOs to train helideck teams on items to be checked.) • Review conditions required for a “green deck”.
	Passenger/freight handling	• Team exercise to review HLO safety supervisory role and HDA helideck actions during passenger/freight handling.
Suggested	Communications	• Review communication equipment and hand/arm signal use. • Inspect and test all aviation radios.
	Using helideck closure banner	• Review conditions requiring banner use. • Inspect condition of banner. • Install banner on helideck, remove, and stow properly.
	Weather systems	• Review what weather information is transmitted to Pilots, who transmits it, and when it is transmitted. • Review handheld wind speed indicator operation.
	Night Medevac helideck operations (night exercise)	• Review safety considerations for night helideck operations. • Review movement of patient on stretcher to helideck and helicopter. • Check helideck lights for proper operation. • Check for facility lights that could affect Pilots’ vision.
	Aircraft refueling (facilities with fuel systems)	• Team exercise to review HLO safety supervisory role and HDA helideck actions during refueling.
	Refueling system inspections (facilities with fuel systems)	• Review required inspections and documentation. (HLOs to train helideck teams on items to be checked.)
Emergency Operations		
Required	Helicopter crash on the helideck (without fire)	• Review procedures with facility Incident Commander. • Walk through a response including extraction of injured passengers from a helicopter on its side. • Include other facility personnel as appropriate.
	Helicopter fire on the helideck	• Review procedures with facility Incident Commander. • Walk through a response to a helicopter fire. • Include other facility personnel as appropriate.
	Helicopter ditching near facility	• Review procedures with facility Incident Commander. • Walk through a response to helicopter ditching. • Include other facility personnel as appropriate.
	Fuel or oil spill on the helideck with operating helicopter on helideck	• Review procedures with facility Incident Commander. • Walk through a spill response including helicopter control and review of available spill containment/cleanup items. • Include other facility personnel as appropriate.
Suggested	Helideck firefighting equipment familiarization training	• Team exercise to review helideck foam system operation (if installed) and all helideck fire extinguishers.
	Helideck emergency equipment familiarization training	• Team exercise to review contents of helideck emergency equipment break out box. • Review the purpose of each item. • Inspect each item for condition and function.

	Any other accident or incident involving helideck operations	• Discuss and walk through response to other incidents, such as:
		  • Injured person on helideck during helicopter operations
		  • Unannounced helicopter landing during crane operations (green deck violation)
		  • Disabled helicopter on helideck, including tie down requirements and movement of aircraft to parking area if available

Temporary Helideck Closures

Temporary Helideck Closures

Helideck Status Lights are used to indicate an unsafe landing area for helicopters either because the status of the helideck and its environment has not been checked by the helideck team, or because of certain conditions prohibiting the use of the helideck for a longer period of time.

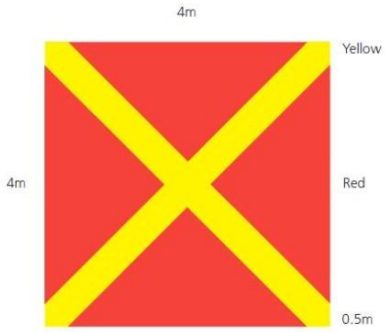
Helideck Status Lights should always be turned ON unless and until a Green Deck is provided by the HLO to the arriving/departing helicopter, after which they are turned OFF. This safety barrier is used to temporarily close the helideck between flights and in those situations when an HLO could potentially open the helideck for helicopter operations following receipt of a standard 20-minute call.

If it is anticipated that the helideck cannot be opened up within 20 minutes of receiving a helicopter radio call, the particulars of the situation that prevents the use of the helideck shall be discussed with the installation manager and aviation company dispatcher supporting the installation. These situations include, but are not limited to, maintenance on or near the helideck, flaring, venting, and other conditions not conducive to helicopter operations.

For the duration of the helideck closure a Notice to Airman (NOTAM) shall be issued to ensure the widest dissemination to all helicopter companies and all pilots flying in the area. The offshore platform shall provide the dispatcher with appropriate information regarding the helideck closure, and the dispatcher will then initiate the NOTAM approval and distribution process.

In addition to the NOTAM distribution, the Helideck Status Lights will remain ON to indicate the unsafe landing area.

If the temporary helideck closure exceeds two (2) days, then in addition to the procedure stated above, a Prohibited Landing Marker (PLM) (see Figure below) shall be placed over the “H” on the helideck and securely fastened to the helideck. Environmental conditions shall be taken into consideration regarding how and when the PLM is positioned on the helideck as high winds may interfere with a safe roll-out of the marker by the helideck team.



Upon re-opening the helideck after the temporary closure, the PLM shall be removed, the Dispatcher shall be notified that the NOTAM regarding the helideck closure can be retracted and normal operations regarding the use of the Helideck Status Lights and helideck for helicopter operations are allowed to resume.

PROCEDURE OPS0081-PR08

MULTI-SHIP OPERATIONS

1 Multi-Ship Operations

1.1 Multi-Ship Operations

Multi-ship operations are authorized on the following parking area equipped SHELL DEEPWATER - GOM helidecks upon receipt of final approval by the Business Unit Air Transport Technical Authority:

- AC-857 (PERDIDO)
- GB-426-A (AUGER)
- MC-807-A (MARS)
- MC-807-B (OLYMPUS)
- MC-807-B (URSA)
- VK-956 (RAM POWELL)
- Any drill ship with parking area on contract with Shell

Multi-ship operations shall be conducted in accordance with the following criteria:

1) Aircraft in the parking area shall be positioned completely within the white outlined parking space.
2) The parked aircraft shall be securely tied-down to the helideck and all rotor blades shall be tied-down.
3) Combined weight of both aircraft shall not exceed the maximum allowable combined weight identified in the applicable helideck information plate at: www.avnotice.com/operations/safety.asp
4) The following information shall be sent to the Business Unit Air Transport Technical Authority for review and final approval:
   - Photo of the aircraft securely tied-down and parked behind the white outlined parking space.
   - Weight of the aircraft (with fuel) parked in the push-in parking area.
   - Confirmation from the asset that the combined weight of both aircraft does not / will not exceed the maximum allowable for the helideck
5) Pilots shall be made aware of other aircraft in the parking area during initial check-in.

Note: The pilot-in-command always maintains the right to refuse landing if an unsafe condition exists.

PROCEDURE OPS0081-PR09

SAFETY AND MANAGING HELIDECK RISK

1 Managing Risk

1.1 Facility Safety Management System and HSE Case

The facility Safety Management System (SMS) / HSE Case shall address all aspects of helicopter operations on offshore installations, Mobile Offshore Drilling Units (MODU), and vessels.

a. All helideck activities specific to the asset shall be adequately controlled and recorded within the management system;
b. Procedures shall be developed to confirm that activities remain appropriate, are being properly implemented and remain in accordance with Shell policy;
c. Responsibilities shall be assigned and a custodian identified to ensure that all procedures associated with helideck operations are updated at prescribed intervals.

When addressing “all aspects of helicopter operations” the following shall be considered:

a. Routine crew change and cargo flights;
b. Emergency flights such as MEDEVAC and platform evacuation;
c. Visits by Government and third-party helicopters with facility landing rights;
d. Specialized operations such as helicopter hoist operations (HHO), external load delivery and pickup, and flare-tip replacement.

The facility HSE Case, Helideck Operations Manual, and Emergency Response Plan shall be fully linked to ensure all aviation risks are adequately addressed and mitigated to as low as reasonably practical (ALARP).

1.2 Controls and Recovery Measures

Offshore facilities shall identify and implement Controls and Recovery Measures for RAM red and yellow 5A and 5B aviation hazard Top Events identified in the facility HSE Case Hazards and Effects Register, in bow-tie or equivalent analyses, or documented in the facility HSE Case or equivalent document.

When considering RAM red and yellow 5A and 5B aviation hazard Top Events at or in the vicinity of the facility, the following shall be included (as a minimum):

a. Helicopter crash on the helideck;
b. Helicopter fire on the helideck;
c. Helicopter ditching near the installation or vessel;
d. Fuel or oil spillage on the helideck (from fueling activity or aircraft incident);
e. Unannounced or wrong deck landings by aircraft experiencing an in-flight emergency or by disoriented pilots;
f. Aircraft overload due to improper weighing and manifesting;
g. Contaminated fuel loaded into helicopter; and
h. Other Top Events determined through Hazard Analysis.

When considering RAM yellow area aviation hazards for inclusion in the facility HSE Case Hazards and Effects Register, the following shall be included (as a minimum) unless hazard analysis places the hazard in RAM red and yellow 5A and 5B. In this latter case manage under the requirement listed above:

a. Helideck passenger handling and movement;
b. Adverse weather and vessel motion;
c. Helicopter blades and hazard areas;
d. Helicopter hoist operations (HHO) (if helicopter hoisting to/ from the facility is anticipated in normal or emergency situations);
e. Rotor downwash and blown objects for both aircraft Foreign Object Damage (FOD) and facility personnel injury;
f. Falls from the helideck or on associated stairs and access points;
g. Dropped objects, static discharge, and snagged pendant during external operations; and
h. Other aviation hazards determined through Hazard Analysis.

1.3 Manual of Permitted Operations

Offshore facilities shall address asset specific conditions and activities posing aviation hazards in the facility HSE Case, and define and control them through the facility Manual of Permitted Operations (MOPO), or equivalent document.

The following conditions posing aviation hazards shall be included in the facility MOPO or equivalent document:

a. External influences section:
   i. Adverse weather including ceiling, visibility, wind, convective activity (lightning, wind shear, hail), and icing; and
   ii. Adverse sea states prohibiting rescue of ditching survivors.

b. Concurrent/simultaneous operations section:
   i. Combined operations of vessels in the helideck 5:1 clearance zone creating obstacles, turbulence, or hot/cold gas emission;
   ii. Crane – helicopter operations;
   iii. Multi-helicopter operations on offshore helidecks (multiple helicopters on a single helideck);
   iv. Perforating operations;
   v. Presence of Hydrogen Sulfide (H_2S) gas (where applicable);
   vi. Turbulence and hot exhaust gas emissions from facility structure, flaring, and machinery;
   vii. Flammable cold gas venting;
   viii. Emergency hydrocarbon gas release;
   ix. Vessels and MODUs: Facility motion exceeding helicopter operating limits;
   x. Dynamic Positioning (DP) vessels: Adverse vessel movement during DP malfunction or drive off; and
   xi. Other conditions and activities posing aviation hazards determined through Hazard Analysis.

1.4 Safety Critical Equipment

Offshore facilities shall identify asset specific Safety Critical Equipment/Elements (SCE) serving as critical Controls and Recovery Measures for aviation hazards, and mitigate their degraded function through the facility MOPO, or equivalent document.

Facilities shall analyze the equipment/elements in the table below for designation as Safety Critical Equipment/Elements and inclusion in the facility MOPO impaired systems section, as well as the facility maintenance management system to ensure the completion of required preventive maintenance and periodic inspections.

1.5 Safety Critical Roles

Offshore facilities shall identify asset specific Safety Critical Roles (SCR) responsible for maintaining critical Controls and Recovery Measures for aviation hazards, and establish minimum staffing levels for these roles documented in the facility HSE Case, or equivalent document.

Facilities shall analyze and assess the following roles for designation as Safety Critical Roles:

a. Offshore Installation Manager/Vessel Master;
b. Helideck Landing Officers (HLOs);
c. Facility/vessel Emergency Response Team and/or Fire Team;
d. Radio Operator;
e. Offshore logistics coordinators conducting weighing and aircraft manifesting;
f. Storemen/Materials Controllers responsible for the shipment and acceptance of dangerous goods by air; and
g. Other roles determined through Hazard Analysis.

1.6 Normally Unattended Installations (NUIs)

Parent facility HSE Cases covering NUIs shall include each NUI in mandatory requirements 1.1 through 1.5 above, or they shall be addressed separately for each NUI, and;

Facility HSE Cases and their MOPO (or equivalent document) shall document how individual exposure to NUI helicopter operations is managed to ALARP.

Facilities shall ensure the Controls and Recovery Measures for RAM red and yellow 5A and 5B aviation hazard Top Events and RAM yellow area aviation hazards are fully explored for each NUI, taking into account its distance from the parent facility and the ability to adequately respond with existing personnel and equipment at the NUI prior to external support arriving. Consider the following items for NUIs:

a. The maximum number of personnel to be transported by helicopter to a NUI;
b. The minimum number and type of Safety Critical personnel required to safely handle the helicopter on the NUI helideck;
c. (Where a parent facility has more than one NUI) If a helicopter can safely “bus-stop” passengers to two or more NUIs in a single round trip flight, exposing some passengers to multiple NUI landings;
d. (Where the NUI helideck is less than 1D for the helicopter) Passenger movement on undersized helidecks;
e. Allowance for night NUI helicopter operations and specific Controls and Recovery Measures for these operations;

f. Extended personnel presence on NUIs (beyond 24 hours) requiring routine support and crew change flights; and
g. Personnel health hazards and flight hazards posed by bird guano accumulation.

Offshore Helideck Safety Critical Equipment/Elements	Inspection Cycle
Weather Reporting Equipment * Wind Speed & Direction * Precision Outside Air Temperature Sensor * Precision Barometric Pressure Sensors (Dual Sensors) * Visibility (where equipped with a visiometer) * Cloud Base (where equipped with a ceilometer) * Hand-held Anemometer **Note:** Sensors shall be positioned in a location on the asset that provides the most accurate representation of actual conditions experienced on the helideck.	Per the Manufacturer * Hand-held Anemometer: Annual
Helideck Fire Fighting Systems & Protective Equipment * Foam Monitors (as required) * Foam Hand Branches * Hydrant Points * Foam Concentrate (Primary and Back-up Supply) * Bunker Coats, Trousers, Boots, Gloves * Fire Helmets with Full Face Visors * Self-Contained Breathing Apparatus & Extra Cylinders * Portable Fire Extinguishers (Dry Powder and CO_2) **Notes:** (1) Foam Test Certificates shall be required annually. Foam concentrates and produced foam must be tested. (2) All parts of the foam production system shall be tested annually.	Per the Manufacturer or Not Less Than Annual
Helideck Lighting and Communications Equipment * Obstruction Lights * Perimeter Lights * Flood Lights * Helideck Status Lights * Windsock Lighting * VHF Air Band Radio * Portable VHF Air Band Hand-Held Radios with Headset (1 per helideck team member is required)	Per the Manufacturer or Not Less Than Annual
Vessel Motion Sensing & Reporting Equipment (Vessels & MODUs) * Pitch, Roll, & Heave Measuring Sensors	Per the Manufacturer
Helideck (Structure & Integrity) * Windsock (Lighted) * Helideck Perimeter Netting * Helideck Landing Net (when required) * Helideck Guttering & Down-pipes * Helideck Tie-down Points * Helideck Friction Test/Certification	Annual
Helideck Emergency Equipment * Crash Box (one by each helideck access point, waterproof, & accessible) * Adjustable Wrench (one per crash box) * Large Rescue Axe (one per crash box) * Bolt Cutters (one per crash box) * Heavy Duty Hacksaw (one per crash box) * Heavy Duty Hacksaw Blades (six per crash box) * Fire Resistant Blanket (one per crash box) * Side-cutting pliers (one per crash box) * Set of Assorted Screwdrivers (one per crash box) * Harness Cutting Knife with Sheath (one knife per helideck team member) * Aluminum Ladder (two sections: each section a minimum of 2-3 meters long) * Hook, Grab, or Salving (one per crash box) * Fire Resistant Gloves (minimum of two pairs per crash box) * Life-line (minimum of 5 cm X 15 meters) * Fuel / Oil Response Kit * Stretchers * Other as required (asset specific)	Annual (Fit For Purpose)
Scales (Passenger, Baggage, Cargo)	Annual (Calibration)
Miscellaneous Safety Critical Equipment * Helicopter Chocks (Rubber, Wood, or Sand Bags: Minimum of 6; 2 per aircraft wheel) * Helicopter Tie-down straps (minimum of 6; breaking strength of 12,000 lbs.) * HLO & HDA Reflective Vests (flame retardant material) * Prohibited Landing Marker (4 x 4 meters; red flag with diagonal yellow cross) * Video/DVD Player/Computer (with passenger safety video/brief)	Annual (Fit For Purpose)

REVISION HISTORY

Latest Major Revision

Revision Details	OPS0081 Rev 11.0 Revision Date – January 15, 2018 Next Review Date – January 15, 2023
Replaces	This document is replacing in its entirety the following Shell document: • OPS0081 Rev 10.0
Any Revision Changes	Changes from the previous revision are annotated in the left margin by a black bold line.
Approval	Approval granted by Head of Aircraft Services, Americas-Air Transport: Approval date: 12 Jan 2018