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**AMENDMENT RECORD**
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1. **INTRODUCTION**

1.1 This Manual provides the best practice for common helicopter procedures in support of the three General Lighthouse Authorities (GLA), comprising Trinity House (TH), The Northern Lighthouse Board (NLB) and The Commissioners of Irish Lights (CIL).

1.2 Helicopter operations require a high degree of training, preparation and alertness. This Manual sets out in detail the procedures to be followed and the information required for safety and efficiency.

1.3 It is essential that all people involved in helicopter operations should read, understand, and follow these instructions as their safety and the safety of the other personnel involved may depend on their actions.

1.4 These procedures apply equally to Helicopter Operators and other third parties who are involved in helicopter operations.

1.5 The GLAs are equal opportunities employers. References in this Manual in masculine or feminine gender should be taken to include both.
2. COMMON TERMINOLOGY AND ABBREVIATIONS

**Aircrew**
Collective term used for the pilot and the Aircrewman if carried

**Aircrewman**
A licensed aircraft engineer who may be carried as a member of the helicopter crew, responsible for minor helicopter maintenance, GLA task management, and the supervision of passengers and freight

**ATC**
Air Traffic Control – the ground-air radio at an airfield

**AtoN**
Aids to Navigation, which includes lighthouses, buoys and beacons

**Casualty**
An AtoN which is not functional

**Helicopter Operator**
The helicopter operator under contract to the GLAs to provide the helicopter service

**CIL**
The Commissioners of Irish Lights. Information in this Manual specific to CIL is in **green**

**CFM**
Coordinated Fleet Management. Tri-GLA planning group for ship and helicopter operations

**CRS**
The Irish Coast Guard Coast Radio Service, which maintains flight watch on the helicopter when contact cannot be maintained with a CIL or ATC station

**Deck Crew**
Personnel on a GLA vessel responsible for assisting with helicopter operations

**DG**
Dangerous Goods: articles or substances which are capable of posing a risk to health, safety, property or the environment which are listed (with detailed instructions for package and carriage) in the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air

**DGA**
Dangerous Goods Awareness

**Elevated Helipad**
A helipad higher than 3 m above the surrounding surface

**ETA**
Estimated Time of Arrival

**ETD**
Estimated Time of Departure

**GLA**
The General Lighthouse Authorities (TH, NLB and CIL)

**Field Site**
Landing Sites on land used to mount helicopter flights to a light.

**FOD**
Foreign Object Damage: damage caused to the helicopter by loose objects being sucked into the engines or rotor blades or blown by the
rotor downwash, potentially injuring people in the vicinity. Also used to describe the objects which could cause the damage.

**FOD Plod**
The meticulous search of the whole of a helicopter operating area to find and remove all objects which could be sucked into the helicopter’s engines or rotors or could be blown away by the rotor downwash.

**Groundcrew**
Personnel at a Landing Site whose prime task is to assist with helicopter operations. Groundcrew must have undertaken Groundcrew training.

**HLO**
Helicopter Landing Officer: the sole person in charge of a helicopter Landing Site and all activities on it for the duration of helicopter operations.

**Hooker**
The Groundcrew person responsible for attaching a USL to the helicopter’s hook.

**ICAO**
International Civil Aviation Organisation.

**IFR**
Instrument Flight Rules, the criteria for flying in IMC.

**IMC**
Instrument Meteorological Conditions which prevent the pilot flying using visual references and require him to fly using the instruments in accordance with IFR.

**ISM**
International Safety Management.

**Landing Site**
Any site listed in the Tri-GLA Helicopter Landing Site Register, and other off-airfield sites required to provide the service.

**Lantern-Top Helipad**
A helipad built above the light on a lighthouse.

**Lead Passenger**
The person nominated to direct the loading and unloading of passengers and freight whenever no Aircrewman, HLO or Groundcrew is present.

**Marshaller**
The Groundcrew person responsible for marshalling the helicopter (normally the HLO).

**NLB**
The Northern Lighthouse Board. Information in this Manual specific to NLB is in blue.

**NM**
Nautical Mile.

**Operating Base**
Each GLA has principal Operating Bases, some with fuel, offices, communications and storage for GLA equipment, where the helicopter can stay overnight in the open. They are at Oban (NLB), Castletownbere and Blacksod (CIL) and St Just (TH).
CFM: Operations and Planning Group: the Tri-GLA group (comprising the three GLA Operations Managers) responsible for planning and implementing helicopter support across the three GLAs.

Pillar Rock Helipad: A Station that is constructed on ground that is covered at High Tide, i.e., not an Island.

Planning Manager: The person in each GLA responsible for planning and managing helicopter support for that GLA.

POB: Persons On Board, an important piece of information for the rescue services in the event of an accident.

Rock Station: Landing Site at a lighthouse built beside or atop cliffs which can create severe turbulence.

SAP: Service Availability Period: a period, normally between 5 and 12 days long, when the helicopter is allocated by the CFM to support an individual GLA.

SMS: Safety Management System.

TH: The Corporation of Trinity House of Deptford Strond. Information in this Manual specific to TH is in red.

USL: Underslung Load.

Vertrep: Vertical replenishment, i.e., underslung loading.

VFR: Visual Flight Rules, the criteria for flying when clear of cloud by visual references.

VMC: Visual Meteorological Conditions which allow the pilot to fly using VFR.
3. **SERVICE MANAGEMENT**

3.1 **Interfaces.** To ensure strong communication links and traceability, all emails concerning the service except those of a confidential nature are to be copied to the Planning Manager of the relevant GLA and [the Helicopter Operator’s Contract Manager]. Routine interfaces between the GLAs and the Helicopter Operator are as follows:

3.1.1. **Overall contract performance, safety and SAP allocations:**

    CFM and [the Helicopter Operator’s Managing Director or Contract Manager]

3.1.2. **Individual safety, Dangerous Goods and aviation issue management:**

    CFM or individual GLA Planning Managers and [the Helicopter Operator’s Flight Operations Manager]

3.1.3. **Commercial management:**

    Chair of CFM or the NLB Commercial Manager (for matters affecting the contract) or individual GLA Commercial Managers (for matters affecting a single GLA) and [the Helicopter Operator’s Contract Manager]

3.1.4. **Work Management during a SAP:**

    Individual GLA Planning Managers and [the Helicopter Operator’s Contract or Flight Operations Manager or pilot]

3.1.5. **Daily programme management:**

    Ships’ captains or HLOs and [the Aircrew]

3.1.6. **Quality management:**

    CFM or individual GLA Quality and Safety Managers and [the Contactor’s Quality Manager]

3.1.7. **Safety management**

    IGC(8) and the helicopter operator’s safety manager

3.2 **Service Review.** A minuted Contract Review Meeting will be held every six months, chaired by the helicopter consultant and attended by the Tri GLA operations and supporting staff and the Helicopter Operator’s principal managers. Agenda items will include:

    - Actions from the previous meeting
    - Organisational Updates
    - Review of Safety and Incident Reports
    - Programme for next 12 months including forthcoming major operations
    - Landing Site Issues
    - Refuelling Issues
    - Passenger Issues
3.3  **Contacts:**

3.3.1. **Tri-GLA Emergency Contact Centre:**

TH Operations Cell (OPC): +44-1255-245012

3.3.2. **TH:**

Marine Operations Manager: +44-1255-245030  Simon.Robinson@thls.org
Planning Manager (OPC): +44-1255-245012  opc.opc@thls.org
THV Galatea Bridge: +44-7824-431751  Thv.galatea@thls.org
THV Patricia Bridge: +44-7836-335756  Thv.patbridge@thls.org

3.3.3. **NLB:**

Marine Operations Manager: +44-1312-473-3120  EwenM@nlb.org.uk
Planning Manager (Marine Coordinator): +44-1312-473-3191  MoragG@nlb.org.uk
NLV Pharos Bridge: +44-77688-18496  bridgeph@nlb.org.uk
+44-1224-296207

3.3.4. **CIL:**

Head of Operations & Navigation Services  +3531-271-5541  r.mccabe@cil.ie
Planning Manager  +3531-271-5464  leonard.keogh@cil.ie
ILV Granuaile Bridge: +353-879480531  master@cil.ie
3.4 **Helicopter Operator:**

<table>
<thead>
<tr>
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<th>Contact Details</th>
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<tr>
<td>MD</td>
<td>+44/353-xxxx</td>
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<tr>
<td>Flight Operations Manager</td>
<td>+44/353-xxxx</td>
</tr>
<tr>
<td>Contract Manager</td>
<td>+44/353-xxxx</td>
</tr>
<tr>
<td>Operations Manager</td>
<td>+44/353-xxxx</td>
</tr>
<tr>
<td>Helicopter Ops Mobile</td>
<td>+44/353-xxxx</td>
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</tbody>
</table>

3.5 **Coastguard Contact Numbers:** in emergency, dial 999 or call on Channel 16 for the coastguard. The following numbers are for non-emergency and administrative matters only:

**UK:**
- Aberdeen RCC: 01224 592334
- Brixham RCC: 01803 882704
- Falmouth RCC: 01326 317575
- Holyhead RCC: 01407 762051
- Milford Haven: 01646 690909
- Portland RCC: 01305 760439
- Shetland RCC: 01595 692976
- Solent RCC: 02392 552100
- Stornoway RCC: 01851 702013
- Swansea RCC: 01792 366534

**CIL:**
- Dublin NMOC: 01-6620922
- Valentia MRSC: 066-9476109
- Malin Head MRSC: 074-9370103
- Belfast Coastguard: 028-9146-3933
4. THE HELICOPTER, ITS EQUIPMENT CAPABILITIES AND CREW

[To be expanded idc by the Helicopter Operator]

4.1 The helicopter under contract to the GLAs is an MD EuroGusta123 operated by XYZ Helicopters Ltd (the Helicopter Operator). The company is based at xxxx and has maintenance bases at xxxx.

4.2 General Description of the Helicopter. Twin engine, single engine capability, etc.

4.3 Safety Systems. Weather radar, GPS- and web-based position tracking system (allowing flight following by operations staff), TCAS, deck lashings, etc.

4.4 Emergency Equipment. Flot gear, exit lighting, life rafts, lifejackets, ADELT, portable fire extinguisher, first aid kit etc.

4.5 Dimensions. Diagrams of relevant external and cabin dimensions.

4.6 Cabin. Seat belts and headsets for all pax. Diagrams of freight/pax options and seating options with dimensions.

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<tr>
<th>Usable Load</th>
<th>Range</th>
<th>Radius of Action</th>
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<td></td>
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<tr>
<td>400 kg in cabin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>600 kg in cabin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max load in cabin: x kg</td>
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<td></td>
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4.7 Underslung Loads. Hook and load viewing system, [3]m strop with bottom-opening hook, load cell, load weights, range, etc.

<table>
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<th>Flight duration: x.xx hrs</th>
<th>Radius of action: 20 NM</th>
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<tr>
<td>Xxx kg (normally available)</td>
<td>Flight duration: x.xx hrs</td>
<td>Radius of action: 20 NM</td>
</tr>
<tr>
<td>Max load on hook: xxx kg</td>
<td>Flight duration: x.xx hrs</td>
<td>Radius of action: 20 NM</td>
</tr>
</tbody>
</table>

4.8 Performance. Cruise speed and planning speed with flotation gear etc, USL speeds, max endurance.

4.9 Communications

4.9.1 One VHF (FM) transceiver - operating on the Marine VHF band 138.000 – 173.995 MHz including Channel 30 (157.500MHz). Normally used by the pilot for communications with HLOs and coastguards.

4.9.2 Two x VHF (AM) transceivers - operating in the Aeronautical VHF band, including (129.7 MHz (TH), 129.95 MHz (CIL), and xxx.x MHz (NLB)). Normally used by the pilot for communications with ATC and as a back-up for HLO/aircraft traffic on Channel 30.
4.9.3. Full intercom system enabling all passengers to communicate with the Aircrew and each other.

4.10 Pilot’s Role.

4.10.1. The pilot is the aircraft commander and is in sole charge of the helicopter. His decisions with regard to operations and the carriage of goods and personnel are final and must be complied with. His instructions must be obeyed at all times. His decisions on safety will be accepted by the GLAs as overriding in the event that they impinge on the effectiveness of the operation including without limitation whether a flight should be undertaken, the manner of performing the flight, helicopter serviceability, routes, weather, flying and landing site conditions prevailing at the time.

4.10.2. The pilot is responsible for the safety of passengers and should ensure that all passengers are fully briefed prior to the flight.

4.10.3. The operations staff in consultation with the pilot will make the final decision on the order in which the day’s tasks are carried out. Operations are to be carried out in such a manner as to minimise flight time having due regard to safety and efficiency.

4.11 Pilot Working Time Limitations. Aviation Authority regulations place limits on the number of hours the pilot is able to fly and to be on duty as follows

4.11.1. Flying Hours:

- Maximum xx hrs flying in any one day
- Maximum xx hrs flying in any 3 day period
- Maximum xx hrs flying in 7 days
- Maximum xx hrs flying in 28 days

4.11.2. Duty Hours:

- Maximum xx hours on duty per day.
- Maximum of xx hours on duty during a 7 day period
- Maximum xx consecutive days worked followed by a minimum of 2 days off duty
- Maximum of xx hours duty per 28 day period.
- Duty periods include 1 hour for checks (45mins at the start and 15mins at the end of day)

4.12 Weather Limits.

4.12.1. The pilot must fly between Field Sites, vessels and lighthouse helipads using external visual references under Visual Flight Rules (VFR), which require the Visual Meteorological Conditions (VMC) defined in the following table.

<table>
<thead>
<tr>
<th></th>
<th>Minimum cloud base</th>
<th>Minimum Visibility</th>
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<tr>
<td>Over-water flights greater than 10 NM,</td>
<td>600 ft</td>
<td>1500 m *</td>
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and overland flights

* May be reduced to 800m for short periods when in sight of the surface and flown at a speed which permits “see and avoid”.

| Over-water flights less than 10 NM | 400 ft | 3000 m |

4.12.2. If weather conditions are worse than those in the table above, the pilot must fly using the aircraft instruments for reference and the flight is achieved under Instrument Flight Rules (IFR). Although not acceptable for flights to and from lights, IFR is generally permitted for transit flights, for example through poor weather to an operational area where VMC is available, or to recover to a suitably equipped airfield after operations. However, IFR requires larger fuel reserves (so may offer less payload) and a diversion airfield within reach where the weather is forecast to remain suitable. It is not possible to fly IFR when the air temperature is at or below freezing, as ice could form on the rotors and degrade their performance.

4.12.3. **Adverse Weather Guidance.** Consideration should be given to delaying operations if:

4.12.3.1. The wind speed is in excessive, gusting severely or in a direction that creates excessive turbulence

4.12.3.2. There is falling snow or icing conditions

4.12.3.3. There is a tangible risk of the weather, particularly visibility, deteriorating below limits during the flight.
5. **SAFETY**

5.1 **General Information**

5.1.1. GLA helicopter operations are at all times to be carried out in accordance with the relevant provisions of national Safety, Health and Welfare at Work Acts. European (EASA) and national aviation authority (UK Civil Aviation Authority and Irish Aviation Authority) regulations are to be adhered to as appropriate, and account is to be taken of the relevant sections of the local GLA Safety Management System (SMS).

5.1.2. The three GLA’s SMSs are key business management systems and performance criteria. Ashore, each GLAs’ SMS aligns with the requirements of national statutory and regulatory requirements and is subject to internal and independent accredited audits. All three GLAs’ SMS follow the broad requirements of the UK HSE’s ‘Successful Health and Safety Management HSG65, and the UK GLAs are audited and accredited to ISO 9001, 14001 and either ISO 18001, or the RoSPA Quality Safety Audit system which incorporates ISO 18001 requirements. Helicopter operations across all GLAs are subject to regular compliance audits by their respective national aviation authorities.

5.1.3. For the vessels, each GLAs’ SMS aligns with national and international maritime statutory and regulatory requirements and is certificated to the International Safety Management Code for the Safe Operation of Ships and For Pollution Prevention (ISM) and the International Ship and Port Facility Security Code (ISPS Code).

5.1.4. It is the policy of the GLAs that all reasonable practicable measures will be taken to avoid risk to employees or others involved in helicopter operations.

5.1.5. Management and supervisory staff have the responsibility for implementing this policy throughout their service and must ensure that Health and Safety considerations are always given priority in planning and day-to-day supervision of work.

5.1.6. Every employee has a duty to take reasonable care for his own health and safety and that of others who may be affected by his acts or omissions while at work.

5.1.7. All employees should be conscious of the threat to flight safety posed by interference with the aircraft and its fuel resupply system. In the event of anything suspicious or anyone acting suspiciously they should immediately bring it to the attention of the HLO, pilot, lead passenger or their line manager.

5.2 **Open Safety Reporting**

5.2.1. Open Reporting is a culture in which any and every matter, however small or trivial it might appear which does or might affect safety can be raised by anyone involved without blame or disciplinary action (unless the result of malice). The observation can then be discussed and assessed and if it highlights a potential risk, mitigating action can be taken. The object is to ensure that potential accidents and incidents are spotted before they occur and are prevented. Since GLA personnel operate in, under and around the helicopter, they are personally affected by the safety of the
operation and have a considerable contribution to it; flight safety is not just for
pilots. The culture depends on the timely and honest reporting of all safety issues,
errors, dangerous occurrences and practices which might cause incidents, and a
constructive attitude to assessment and mitigation by supervisors.

5.2.2. Open Reporting is the GLAs’ and Helicopter Operator’s policy in relation to
helicopter safety. The Helicopter Operator operates an SMS in accordance with
aviation practice, and Open Reporting is a fundamental component of that system.
Passengers and others involved in helicopter operations are positively encouraged
to familiarise themselves with it and contribute to it through their GLA’s Open
Reporting system.

5.2.3. All personnel should raise their concerns both verbally with their HLO or
supervisor, and by using Annex 5A, Report of Safety Concern or Occurrence,
3GLA Form (also available on xxx@gla.com) which is designed to facilitate Open
Reporting in a structured way to enable the problem to be investigated and
rectified quickly. The form is to be completed by the concerned person and be
given to the HLO, who is to initiate an investigation and forward the report to the
Operations Department. Forms are available at Operating Bases. HLOs or others
receiving verbal Open Reporting observations should encourage the reporter to
submit the form, and only complete it themselves as a last resort.

5.2.4. Reports will be investigated on a no fault basis, i.e. no fault or blame will be
attributed to the person making the report except in the event of malice. Similarly
no blame will be attributed to any GLA or Helicopter Operator’s personnel following
investigation of a report other than in cases of serious dereliction of duty.

5.2.5. The findings of the investigation together with any closure actions will be circulated
to all GLA personnel involved in helicopter operations and publicised on operations
notice boards to spread the lessons and enhance safety awareness. Where
possible these reports will not identify individuals.

5.3 Performance and Safety Improvement.

5.3.1. All personnel are responsible for reporting any deviations from the procedures
detailed in this GLA Helicopter Operations Manual or any other non-conformities or
Opportunities for Improvement which they identify. Initial reports should be made to
their GLA or Helicopter Operator’s line manager who should forward the reports by
e-mail to the CFM. The CFM will investigate and analyse all reported non-
conformities and ensure that corrective action in response to the non-conformity is
sufficient to prevent re-occurrence.

5.3.2. All reported non-conformities potential improvements will be progressed using the
form at Annex 5B, NCN and PIN which is also available on xxx@gla.com.

5.3.3. Helicopter Manual. Anyone identifying an improvement to this Manual should
forward their suggestions to their Line Manager who should forward them to the
CFM.

5.4 General Safety Precautions
5.4.1. No unauthorised persons are to be allowed onto the location of active helicopter operations.

5.4.2. All personnel not involved in the helicopter operations are to be kept clear of the Landing Site, and Emergency Areas.

5.4.3. All personnel are to be kept clear of the helicopter's approach and take off path.

5.4.4. No one who, in the opinion of the pilot, is under the influence of alcohol or drugs will be permitted near or on board the helicopter; the HLO shall report such instances directly to his line manager. Anyone taking prescribed drugs should seek medical advice before being involved in helicopter operations.

5.4.5. **Smoking** is not permitted during helicopter operations, nor within 30 metres of the helicopter or bulk fuel.

5.4.6. The use of **portable electronic appliances** such as computers and mobile phones is not permitted in or near the helicopter without permission from the pilot.

5.5 **Survival Suits.**

5.5.1. Survival suits must be worn for all flights, except those entirely overland at the discretion of the pilot.

5.5.2. Persons requesting helicopter flights must ensure that every passenger travelling under their authority, including GLA employees, contractors and others, has a survival suit for the flight. Early arrangements may be necessary to arrange for suits of the correct size to be available from a ship, depot or Landing Site.

5.5.3. Survival suits protect the wearer when immersed in water by retaining an insulating layer of air between the sea and the wearer. They are therefore critical survival aids which must be stored and worn correctly, and inspected at frequent intervals. Before donning the suit, wrist watches, sharp jewellery and shoes must be removed to avoid damaging the suit and the wrist- and neck-seals. Shoes are put on again after the suit has been donned. Do not place sharp objects in the pockets.

5.5.4. On arrival at the destination the suit must be taken off as soon as practicable and stored correctly.

5.6 **Safety - Clothing.**

5.6.1. Lifejackets are provided by the Helicopter Operator and must be worn for all flights, except those entirely overland at the discretion of the pilot.

5.6.2. All personnel working near the helicopter or involved in helicopter operations are always to wear suitable clothing which covers the arms and legs. This provides valuable protection in the event of fire. However, clothing made from most manmade fibres can melt when exposed to fire and should not be worn next to the skin.
5.6.3. Anoraks and other coats must not be worn over survival suits or lifejackets.

5.6.4. All passengers must wear the headsets carried in the helicopter while in the aircraft to hear instructions from the Aircrew. The headsets also relay all radio traffic, so minimise any talking, wait for silence before speaking, and stop speaking if you hear talk on the headset.

5.6.5. Groundcrew must wear protective helmets, high visibility clothing and safety footwear during helicopter operations.

5.6.6. Hearing protection must be worn for any more than a few moments exposure to the high pitched noise emitted from the engines and rotors.

5.6.7. Hearing and eye protection and gloves should be used where appropriate.

5.6.8. Caps/hats, if worn, should be secured by using a chin strap.

5.6.9. On GLA vessels the Hooker and his Back-Up Man will also wear lifejackets and fire retardant boiler suits.

5.7 **Underwater Escape Training.** All personnel who travel frequently in a helicopter shall be trained in the techniques of escaping from a helicopter which has ditched in the water.

5.8 **FOD.** No loose or light articles are to be left on or near a Landing Site. There is a considerable downwash from the helicopter main rotor and a consequent danger of small or light objects being blown about causing injury to personnel and damaging the helicopter. Serious accidents have occurred due to items such as loose tarpaulins being lifted into the helicopter blades. Special care should be taken to secure or remove articles such as clothing, survival suits, lifejackets, plastic bags, newspapers, string, rope, tarpaulins and light sheet metal and plastic. These must be weighted down securely, preferably at a safe distance from the Landing Site.

5.9 **Pre-Flight Safety Briefing**

5.9.1. The Aviation Authorities require that all passengers be briefed on safety and emergency procedures and equipment before each flight or series of flights. GLA passengers are briefed either by watching the Safety Briefing DVD or by a personal briefing from the Aircrew. Ships, Operating Bases and some Field Sites are equipped with DVD players.

5.9.2. **Occasional Passengers.** GLA, sub-contractors’ personnel and others who fly rarely should be briefed before the first flight of every day from Operating Bases, Field Sites and ships.

5.9.3. **Frequent Passengers.** GLA personnel who fly frequently in the helicopter must be briefed at least once per SAP.

5.9.4. **Others.** Personnel working near the helicopter or involved in helicopter operations who are not passengers should also receive a briefing relevant to their exposure to
risk. The briefing should cover the relevant items from the pre-flying checklist at Annex 5C.

5.9.5. The HLO is to log all safety briefings in the Helicopter Operations Log, issue a cow-tag to each person briefed and [subsequently report the list of persons briefed to the GLA Planning Manager?].

5.9.6. Cow-tag colours will be managed by each GLA, will change each SAP, and will be notified to the Helicopter Operator in the flight programme for the SAP. Cow-tags are attached to the survival suit in a position that is readily visible to the Aircrew.

5.9.7. In addition to the Safety Briefing DVD, passenger safety briefing cards are carried in the helicopter cabin. All personnel shall ensure that they are familiar with the drills shown on these cards.

5.10 **Approaching the Helicopter**

5.10.1. When a helicopter is on the ground with engines running and blades turning, the noise and rotor downwash make normal voice communication difficult. This is a potentially dangerous environment unless discipline and control are maintained. All personnel should keep clear of the helicopter by at least another rotor blade’s length until instructed by the Aircrew or HLO.

5.10.2. Helicopter rotors are lethal. The main rotor is normally at a safe height above people walking under it, but not if the ground slopes up from the helicopter’s skids, not if long objects are carried vertically under the rotor, and not when the rotor is turning slowly during start-up and shut-down. Do not approach the helicopter from higher ground, or move away from the helicopter towards higher ground, where head clearance is reduced.

5.10.3. The tail rotor can decapitate you and is almost invisible because of its speed of rotation.

Never walk aft of the horizontal tail fin.
Never walk around the tail

Never approach the helicopter from the rear. In addition to the risk of the tail rotor, the pilot may need to lift off quickly and will not be unable to see you.

5.10.4. Always approach and leave the helicopter from the front left or front right side, where the pilot can see you. Approach with great caution, and only on the pilot’s instruction (indicated with a positive thumbs up). When departing from the helicopter, remain close to the fuselage, move around to the front and obtain clearance from the pilot (thumbs up), and move away to the front. Always make sure that you can see where the rotor blades are.

5.10.5. The pilot may employ the following hand signals to indicate that it is safe to approach, or to instruct people to stop or to move away from the aircraft.

- Move towards the aircraft: hand and forearm moved repeatedly fore and aft, or thumbs up.
- Stop: hand and forearm held vertical and stationary
- Move back from aircraft: hand moved repeatedly in front of pilot’s face.

5.10.6. When entering and leaving the helicopter use the step provided. Do not step on the flotation equipment attached to the skids.

5.10.7. Seat belts must be fastened and adjusted before take-off, and be kept fastened until the helicopter has landed and the pilot has cleared you to exit the aircraft.
When an Aircrewman is carried, he will ensure that seat harnesses and lifejacket straps have been loosened prior to issuing to new passengers.
Annex 5A, Report of Safety Concern or Occurrence, 3GLA Form A

HELICOPTER INCIDENT REPORT COVER SHEET

Date of Incident

Aircraft

Pilot

Brief Outline of Incident:

Originator of Report

GLA

CONTRACTOR

OTHER

Circulation of Reports

GLA

CONTRACTOR

A. C.

Has incident been fully examined

Yes

No

Are there recommendations to ensure non re-occurrence

Is an amendment to GLA Handbook or Contractor Operations Manual required

Outcome:

Signed: ________________________________
Date: ________________

Annex 5B, NCN and PIN, 3GLA Form

Annex 5D, Use and Maintenance of Survival Suits

1.1 Storage and Transport

1.1.1. Incorrect storage may cause deterioration to a survival suit’s water-tight properties. When not in use suits must be hung on the plastic moulded coat hangers in a dry, ventilated area, away from heat and direct sunlight. Wire hangers or hooks must never be used as they could damage the fabric.

1.1.2. Suits should be put in a bag for transportation purposes only. They should not be stored rolled up, or in a bag or in a vehicle where they may deteriorate and become ineffective.

1.2 Survival Suit Issue

1.2.1. Regular fliers may be issued with personal suits for their use. Holders of personal suits must arrange for suits to be sent for service at least one month before the service is due.

1.2.2. Irregular flyers will draw loan suits from an HLO, Depot, vessel or Operating Base when required and return them after use. All issues are to be recorded on the form at Annex 5C, Survival Suit Issue and Returns, 3GLA Form C (also available at xxx@gla.com).

1.2.3. When a suit is issued, the user should ensure that it is in good condition and fits well, with a good seal against water when the hood is up and the suit is fully zipped up. The suit should allow sufficient freedom of movement; that mittens/gloves are stowed in the appropriate pocket; and, in the case of suits with neck-seals, that the hood is stowed in the appropriate pocket.

1.2.4. Users should return used suits as soon as possible to the HLO or store from which it was issued for re-use by others.

1.3 Care and Daily Inspection

1.3.1. Holders of suits are personally responsible for the care of the suit. In particular, suits must be protected from fuel, oil, grease, or dirt which will impair the water-proofing and therefore the insulation properties.

1.3.2. Prior to use, check the suit, zip, hood and neck seals are undamaged. Check the mitts are contained in the sleeve pockets. Do not use a
defective suit.

1.4 **Donning and Doffing**

1.4.1. Several layers of clothing should be worn under survival suits to trap the air which provides the insulation.

1.4.2. Before donning the suit, wrist watches, sharp jewellery and shoes must be removed to avoid damaging the suit and the wrist- and neck-seals. Shoes are put on again after the suit has been donned. Do not place sharp objects in the pockets.

1.4.3. On arrival at the destination the suit must be taken off as soon as practicable and stored correctly.

1.5 **Suit Maintenance**

1.5.1. Suits returned to store should first be checked as follows:

1.5.1.1. Check the main zip for freedom of movement, and grease the metal parts lightly with Vaseline if necessary.
1.5.1.2. Check the wrist seals for tears or porosity.
1.5.1.3. Check for contamination such as fuel, oil, grease or paint, etc.
1.5.1.4. Check all over for tears or rips.
1.5.1.5. Spray inside suit with a bactericidal cleaner, paying special attention to the hood area.
1.5.1.6. Dab french chalk/talcum powder inside and outside the wrist seals.
1.5.1.7. Hang the suit on moulded plastic hanger with the zip fully open.

1.5.2. Lightly soiled suits can be cleaned by sponging with hand-hot soapy water and rubbing dry with a towel. The suit must never be ironed, bleached or dry cleaned.

1.5.3. Each suit is to be tested and cleaned by an approved service agency every two years, or more frequently if the daily inspection reveals wear or damage.

1.5.4. HLOs, vessels and others responsible for storing suits at Operating Bases must arrange for suits to be sent for servicing at least one month before the service is due.

1.5.5. All repairs must be carried out by the manufacturer.

1.6 **GLA Responsibilities**

1.6.1. The individual GLAs are responsible for keeping records of survival suit location, maintenance and issue by depots and Operating Bases, including:
1.6.1.1. Each suit’s unique reference number
1.6.1.2. Size
1.6.1.3. Suit type
1.6.1.4. Last servicing date
6. **EMERGENCIES**

6.1 **Emergency Reporting**

6.1.1. **Radio Watch.** In the unlikely event that the pilot considers the helicopter and its occupants are (or will shortly be) in grave danger, he will attempt to transmit a distress message. He will normally transmit this on his primary frequency, which may be his GLA frequency, so all personnel maintaining radio watch must be conversant with these emergency procedures. Swift compliance will minimise the delay between an emergency landing and initiation of Search and Rescue action, helping to save life.

6.1.2. **First Alert the Emergency Services.**

6.1.2.1. Whenever a helicopter crash is seen, heard or imminent, the HLO or in his absence any Groundcrew or any other person, must call the emergency services immediately by dialling 112 or using the most appropriate means. In addition vessels should use GMDSS Alert.

6.1.2.2. If the helicopter is on a GLA operating channel, do not change that frequency; continue to monitor the frequency and to assist the pilot if requested. If the GLA Marine Band operating channel is not in use, it may be quickest to alert the emergency services (coastguard) by using Channel 16.

6.1.2.3. Pass as much of the following information as is available:

- *Helicopter crashed/in danger of crashing*
- *Location of the incident*
- *Number of persons on board*
- *(Pilot's intentions if appropriate)*

6.1.2.4. Once all the above actions are complete, inform the respective GLA monitoring centre by telephone. The Centre will inform the Helicopter Operator.

6.1.3. **Rescue Agency Response.** When a distress message is received by the Police or coastguard it is passed to the Aeronautical Rescue Coordination Centre at Kinloss for UK and Shannon for Ireland. The Centres have immediate access to all forms of rescue services, both civil and military and will co-ordinate their use to maximum effect.

6.2 **Distress Call (Mayday).**

6.2.1. The distress message sent by the helicopter will be in the following form if time permits:

- The distress signal "Mayday" repeated three times.
- Name of the station being addressed.
- Identification of the helicopter.
Present position, height, heading etc
Nature of distress
Intention of pilot

Under some conditions it may not be possible to send the complete message, in which case an abbreviated call may be used.

6.2.2. **Action on Hearing a Distress Call.** Immediately upon hearing a distress call, the GLA station must:

- Acknowledge the call with a brief read back.
- Record the time and the position of the helicopter.
- Pass the details of the helicopter’s position, distress condition and the number of persons on board to the coastguard immediately by the quickest means available, usually by calling 112. See paragraph 6.1.2.4.
- Minimise unnecessary communications and monitor all relevant frequencies and devices.

Once other actions are complete, inform the respective GLA Monitor centre by telephone. The centre will inform the Helicopter Operator.

6.2.3. **Example Distress Call.**

Helicopter: "Mayday, Mayday, Mayday, St Ann’s, Tango Hotel, 3 miles east of Smalls at 500ft. heading 090. Fire in cabin; landing on the sea.

GLA Station: "Tango Hotel, Tango Hotel, Tango Hotel, St. Ann’s; Roger Mayday, understand 3 miles east of Smalls, am alerting coastguard".

6.3 **Urgency Message (Pan).**

6.3.1. The pilot may wish to report an urgent situation whilst not declaring it to be an emergency, e.g. in the case of a seriously ill passenger or the failure of one engine. The message will be prefixed by the word Pan repeated three times, will be addressed to a specific station, and will be in a similar format to the Mayday message.

6.3.2. On receiving a Pan message, the station should acknowledge with a read back of the main points, action any requests made by the pilot and maintain a listening watch. For example:

Helicopter: "Pan, Pan, Pan, St. Ann’s, Tango Hotel, have passenger collapsed, with severe chest pains. I have just passed Skokholm and am returning to St Ann’s. Estimate on the ground in 10 minutes, please arrange for an ambulance.

GLA Station: "Pan Tango Hotel, St Ann’s, understand you have a passenger collapsed, with severe chest pains and are returning to St Ann’s, am informing the ambulance service".
Once other actions are complete, inform the respective GLA Monitor centre by telephone. The centre will inform the Helicopter Operator.

**Notes**

1. Both the prefixes "Pan" and "Mayday" impose silence on the frequency – PAN during the passing of the message and the reply, and Mayday throughout the duration of the emergency except for urgent calls directly concerning the incident.

2. In an emergency situation it is imperative that ground stations keep their transmissions to an absolute minimum.

3. Once a master station, (Rescue Service, ATC or GLA Operating Base), has established contact with the helicopter, all other stations should retain a listening watch and not initiate any calls unless requested to do so.

6.4 **Helicopter Overdue.**

6.4.1. If the GLA station holds a listening watch and the helicopter has not been in contact for 10 minutes or in all cases if the helicopter has not arrived within 10 minutes of the planned time, the HLO or lead passenger on station should attempt to make contact on Marine Channel 30 and the Aeronautical VHF frequency and by mobile phone. If no contact is established with the helicopter, he must contact the respective GLA monitor centre immediately to establish the whereabouts of the helicopter.

6.4.2. In any case, where a helicopter is 15 minutes overdue or serious doubt exists for its safety, the coastguard should be advised first (by calling 112 or Channel 16) and then the respective GLA Monitor centre by telephone. The centre will inform the Helicopter Operator. Continue to listen out on both GLA frequencies (Channel 30 and the Aeronautical Band frequency if appropriate).

6.5 **Crash Response Principles.** Crash landings and fire in the helicopter are highly unlikely occurrences. Nevertheless, HLOs or lead passengers on the ground should always follow the principles of preparedness and saving lives:

6.5.1. **Preparedness.** The HLO, Groundcrew and any rescue and fire-fighting equipment should be at instant readiness whenever a helicopter is in the vicinity.

6.5.2. **Life Saving.** HLOs should take only those actions which should minimise loss of life and injury. They should not put themselves, Groundcrew, waiting passengers or bystanders in a position that could add to the toll of injury or death. People on the landing site should be briefed to act only on the orders of the HLO and the pilot, and should not go to the helicopter to attempt a rescue until instructed.
6.5.3. Each emergency incident should be judged according to its circumstances. Responses to an emergency incident should be in accordance with the individual GLA Response plans. The most likely events are:

6.5.3.1. **Fire during Start-Up or Shut Down.** The helicopter engines could cause a fire during start-up or shut down; such fires are usually contained within the engine if extinguishing action is taken quickly. The HLO should:

 Signal to the pilot who will take the immediate actions; helicopters are fitted with engine fire warnings for the pilot, and engine fire extinguishers which should put out the fire. The pilot will probably stop the rotors before asking for assistance.

 Enter the area of the main rotor disc only when signalled by the pilot. If it is safe to do so, the HLO should then take a CO\(_2\) extinguisher up to the cockpit window, confirm whether the pilot requires it to be used on the engine and, if so, discharge it into the engine intake or onto the base of the fire.

 The pilot will direct further actions as soon as he has stopped the rotors and unstrapped.

6.5.3.2. **Crash on or near the Landing Site.**

 If the helicopter warns that it is returning to the Landing Site with an emergency which could result in a heavy landing, everyone at the Site should take cover behind any structure which will protect them from flying debris or lie prone until the crash sequence is over. The fire and crash equipment should be similarly protected. The pilot may be able to keep the rotors turning, and might signal to the HLO that he needs help. Otherwise, everyone near the Landing Site should wait behind cover until all helicopter movement has ceased and then assess whether to approach the aircraft.

6.5.4. **HLO Actions.** Either situation could cause the pilot to land the aircraft heavily either on or within sight of the Landing Site. It could then catch fire. If it appears safe, the HLO should proceed as follows:

 Keep other people back from the crash scene.

 Approach the helicopter in sight of the pilot and from up-wind (both to avoid the effects of smoke and flames and because fire extinguishers are more effective when applied from up-wind).

 Gain access to the cabin by the normal door handles or the emergency door release mechanisms. If these methods fail, use an axe in the area of the doors or windows but be careful to avoid causing further injury.

 Evacuate uninjured passengers and crew first, and then the injured. Call in other helpers at this stage if it is safe to do so. Assess the likelihood of fire and the likely arrival of an ambulance or SAR helicopter before moving badly injured survivors.
If people are trapped, be very alert for signs of fire and attempt to extinguish them immediately.

Ensure all survivors are moved well away from the helicopter in case a major fire develops.

Once all the survivors are clear of the helicopter, keep every-one at a safe distance.

Establish a secure perimeter around the crash site to prevent access.

6.5.5. A helicopter crash will not inevitably result in a fire but it remains a possibility for some time after the event; the helicopter’s fuel tanks are designed to contain any damage, and the pilot will attempt to reduce the sources of ignition. Spilled fuel should be either washed away or covered with foam immediately.

6.6 Crash in the Sea. Should all power be lost or the helicopter catch fire, the pilot will make a controlled descent into the water and trigger the inflation of four large flotation bags, (two per landing skid). These should ensure the helicopter's buoyancy and orientation, depending on the sea state. Photographs of the helicopter with the floats fully inflated are at Annex 6A, Helicopter Flotation Bags. In the event of a helicopter ditching in the sea, it should be assumed that it may invert and sink at any time. The helicopter carries location aids: an Emergency Locator Transmitter and a Crash Position Indicator, which both transmit continuously on several emergency frequencies and will be heard by the coastguard.

6.6.1. Ship/HLO Actions. In the event that any GLA station / vessel is aware that the helicopter has ditched, they shall raise the alarm on VHF Channel 16 and GMDSS Alert (and any other means available). As long as the helicopter floats upright, its radios will continue to function. When in the life raft the pilot should be able to communicate with Search and Rescue units by means of the speech facility of the SARBE beacon attached to his lifejacket. This beacon and a second contained in the life raft both transmit on emergency frequencies.

6.7 Airborne Emergency – Passenger Procedures

6.7.1. The helicopter has two engines. During most flight operations it is capable of flight using one engine in an emergency. In the unlikely event of a complete loss of power, the helicopter is capable of controlled flight in an auto rotational/glide mode. This will result in a controlled forced landing (similar to a normal landing but quicker and firmer) or a ditching in the sea. If the aircraft ditches in the sea, floats will be deployed which will keep the helicopter afloat on the surface.

6.7.2. The pilot’s instructions must be followed at all times.

6.7.3. During an emergency descent over water, passengers should ensure that survival suits are fully zipped up and hoods pulled on. Over land or water, passengers should adopt the following brace position:
Feet flat on the floor
Seat belts tightened
Bend forward with hands clasped round the back of the neck to support the head
Do not release seat belts until instructed, or until all helicopter movement has stopped.
Do not inflate life jackets until outside the helicopter as to do so would impede your exit; inflate it immediately outside the aircraft.

6.7.4. Life Raft Procedures:
6.7.4.1. Passengers should exit the aircraft only on the pilot’s instructions. The pilot will wait for the rotors to stop turning, when evacuation will be safer.
6.7.4.2. The life raft should be launched and inflated on the Aircrew’s instructions.
6.7.4.3. [Drills tbd according to type of raft and Helicopter Operator's requirements]

6.8 Emergencies during Underslung Load Operations. The only persons likely to be involved in an emergency over the pick-up area will be the helicopter crew, the HLO and the Hooker. The following procedures apply:

6.8.1. Action by the Pilot. The pilot will attempt to move to the helicopter to his right, release the load quickly in a safe area and land. On GLA vessels, he will attempt to jettison the load in the sea and land in the Emergency Area.

6.8.2. Action by the HLO and Hooker. Move quickly away from the helicopter in the direction of the pilot’s left (the pilot will move the helicopter to his right) and out of the Emergency Area and any other clear areas where the helicopter might release its load and land.

6.9 Emergencies on Offshore Landing Sites. In the event that the helicopter becomes unserviceable or damaged on an offshore or very remote landing site, all personnel should first take all steps to preserve life. Care of the helicopter and GLA facilities should be a secondary consideration. If people are stranded because the landing site is blocked by an unserviceable or damaged helicopter, they will be recovered either by boat or by coastguard helicopters using rescue hoists. The HLO or Lead Passenger should call 999 on a mobile phone or alert the coastguard on Channel 16, and should also inform his GLA Planning Manager or the Tri-GLA Emergency Contact Centre.
Annex 6A, Helicopter Flotation Bags

[pix to be replaced by the Helicopter Operator to show his aircraft]
7. **SERVICE PLANNING**

7.1 The Tri-GLA arrangement for sharing helicopters is managed by the CFM which allocates helicopter support for periods of the year (SAPs) to each GLA. Once allocated, the helicopter is tasked by the individual GLA Planning Manager.

7.2 **Typical process for Reserving Helicopter Flights and Routine Operations**

7.2.1. The Planning Manager is responsible for scheduling and co-ordinating helicopter operations within each GLA.

7.2.2. Requests for helicopter transport are to be sent directly to the Planning Manager by e-mail using the form at Annex 7A, Helicopter Flight Request Form (also available on xxx@gla.com). The application is to state full details of the requirement and must be submitted seven days before the start of the SAP at the latest. The flight request must include:

- The names and weight of personnel flying
- The load weights of tools, equipment and personal baggage
- The period of time required on station
- Details of Dangerous Goods
- Cost code

7.2.3. Where a flight request has been submitted but the requirement has changed, the Planning Manager must be informed. Failure to comply could result in the flight being refused on the day.

7.2.4. The Planning Manager will enter detailed information on the Helicopter Resource Plan (accessible at xxx@gla.com) and send a SAP Flight Programme four days before the start of the SAP to:

- The Helicopter Operator
- Own GLA personnel affected
- Other agencies including airfields to be used and their air handling agents.
- The CFM

7.2.5. Delays to the programme by weather or helicopter unavailability may result in flight bookings being reviewed and the less essential of them postponed. In all cases of delay and postponement all parties involved will be fully informed.

7.3 **Short-Notice Operations.** A request for an urgent task arising after the tasking for a SAP has been promulgated or during a SAP within the affected GLA’s area will be managed by the Planning Manager. If the helicopter is operating outside the affected GLA’s area, the relevant Planning Manager will pass the request to the Chair of the CFM, who will consult with the Planning Managers of the other GLAs and the Helicopter Operator and make decisions concerning diverting the helicopter, employing a second helicopter, or repairing the Casualty by other means.
Annex 7A, Helicopter Flight Request Form, 3GLA Form J
8. **COMMUNICATIONS**

8.1 **Introduction.**

8.1.1. The objectives of these communications procedures are to ensure the efficient use of the helicopter and to provide a flight-watch system to get help quickly in the event of an emergency. To this end, it is of paramount importance that good communications are maintained between the helicopter and any GLA station or vessel involved in flying operations, and that the GLA station is aware of the approximate position of the helicopter at all times.

8.1.2. When GLA stations cannot maintain radio contact with the helicopter, it will work on the frequency of the appropriate ATC or coastguard in accordance with the Helicopter Operator’s standard procedures.

8.2 **Radios.**

8.2.1. **VHF Marine Band.**

8.2.1.1. [Channel 30 (157.500 MHz)] is the principal channel for routine GLA communications between Operating Bases, Field Sites, lighthouses, vessels and the helicopter. Channel 16 may be used to make initial contact with the coastguard but this is a first-contact and emergency channel; once contact has been made, the coastguard may tell the GLA station to change to another channel to hold the conversation.

8.2.1.2. Fixed VHF Marine Band radios are available at Operating Bases, on vessels and at some offshore lights. Handheld sets are to be provided and used at Field Sites and other locations which do not have fixed sets. The Helicopter Operator provides six safety helmets incorporating Marine Band radio transceivers to each GLA to assist with USL operations.

8.2.2. **VHF Aeronautical Band.**

8.2.2.1. The VHF Aeronautical Band is for communication between ground and air and is the back-up system to Marine Band VHF. It should be used only when necessary to achieve a better range with the helicopter than the Marine Band can provide. On no account must it be used for communication between two GLA ground stations.

8.2.2.2. A VHF Aeronautical Band frequency might also be used when approved by the ATC at an airport to clear vehicle movements on the airport.

8.2.2.3. Frequencies have been assigned to the GLAs for helicopter operations (TH: 129.7 MHz, CIL: 129.95 MHz, NLB: xxx.x MHz). These frequencies are shared with other aircraft operators who may be flying at high altitudes so GLA calls will be heard at great distances by non-GLA aircraft; consequently it is important that all messages are kept short and clear.

8.3 **General Procedures.**
8.3.1. The GLA station’s callsign is the name or location, e.g. “Pharos” or “Blacksod”.

8.3.2. The helicopter’s callsign is its registration (painted on the tail), e.g. G-ABCD, but is usually shortened to the last two letters (in this example, “Charlie Delta”).

8.3.3. The standard phraseology for use on all radios is at Annex 8A, Standard Words and Phrases to be used on Radios.

8.3.4. Handheld radios must be kept charged.

8.3.5. Whenever a manned Landing Site is to be visited by the helicopter, the HLO or lead passenger is to keep a continuous listening watch on Channel 30 from 15 minutes before the intended helicopter ETA.

8.3.6. The listening watch is also to be maintained until 15 minutes after the final departure of the helicopter, unless the pilot confirms to the HLO or lead passenger that he is in contact with an ATC station and is changing frequency. This is so that the pilot is always in contact with a ground station in case of forced landing or the aircraft returning to the Landing Site because of a lesser emergency or bad weather on the route.

8.4 Reporting Procedures.

8.4.1. Initial Call. On the initial approach to a station, the pilot will call on Channel 30 or the local VHF Aeronautical Band frequency as early as possible to establish contact. He will give his location, the number of POB, and his ETA or intentions. When replying to this initial call, the receiving station should confirm that the Landing Site/helideck is clear for landing and give brief details of the wind and weather.

8.4.2. Approach Calls. Subsequently during operations, the pilot will advise the HLO or lead passenger every time he is approaching an Operating Base or Landing Site to land.

8.4.3. Position Reports. All aircraft position reports are to be made by reference to local landmarks, or by a range and bearing from a landmark or by a bearing and ETA at a Landing Site. The HLO or lead passenger will acknowledge and read back all reported positions.

8.4.4. Wind Reporting. Wind direction should either be given in degrees (magnetic) or in points of the compass. The wind speed should always be given in knots, not by the Beaufort scale, e.g. "Wind 300 degrees, 15 knots" or "Wind West North West, 15 knots". Expressions such as "Calm", and "Light and Variable" should be used when appropriate.

8.5 Flight Watch.
8.5.1. Whenever possible the pilot will maintain a watch on Marine Channel 30 for routine GLA operations, on the local GLA’s Aeronautical VHF frequency, and with the local Air Traffic Control Unit using its published VHF Aeronautical frequency.

8.5.2. The HLO or lead passenger will operate the flight watch on Channel 30 and where practical will log all position reports, noting the time of the call and the position given by the pilot.

8.5.3. The pilot will contact his flight watch station every 10 minutes if he has not had to make contact with the station for a normal operational reason. The special flight watch call will include his location and ETA or intentions.

8.5.4. The HLO should call the helicopter if there is any sudden deterioration in the weather, e.g. fog, line squall or heavy rain.

8.5.5. **Transfer of Flight Watch.** There must always be a positive hand over of flight watch from a GLA station to ATC or CRS by the helicopter pilot. The pilot will first establish communications with the new station he requires to carry out his flight watch and then revert to the current station to close their flight watch responsibility.

8.6 **Unmanned Off-shore Stations**

8.6.1. On arrival at an unmanned off-shore station, the pilot will call the land-based HLO. A member of the landing party is to:

8.6.1.1. Immediately switch on the Marine Band radio and establish contact with the helicopter on Channel 30 to confirm the serviceability of the equipment.

8.6.1.2. Immediately on arrival and prior to departure, inform his respective GLA monitor centre by mobile phone.

8.6.1.3. Maintain a listening watch throughout helicopter operations.

8.7 **CIL Procedures.**

8.7.1. Primary flight watch is provided by CIL shore based HLOs and ATC. However, CIL has contracted the CRS to provide a flight watch and radio communications service for the helicopter when the HLO or ATC service is out of range.

8.7.2. Primary flight watch in Dublin bay is provided by Dublin ATC; clearance is required for all operations.
Annex 8A, Standard Words and Phrases to be used on Radios

**Acknowledge:** Let me know that you have received and understood the message.

**Affirmative:** Yes.

**Cancel:** Annul the previously transmitted message.

**Changing to:** I am about to call … (unit) on…. frequency.

**Coasting in:** When crossing the coast from sea to land.

**Coasting out:** When crossing the coast from land to sea.

**Confirm:** Have I correctly received the following? OR Did you correctly receive this message?

**Correct:** That is correct.

**Disregard:** Consider the transmission as not sent.

**How do you read?** What is the readability of my transmission?

**I say again:** I repeat for clarity or emphasis.

**Negative:** No, or that is not correct.

**Over:** My transmission is ended and I expect a response from you.

**Out:** This exchange of transmissions is ended and no response is expected.

**Read Back:** Repeat all, or the specified part, of this message back to me exactly as received.

**Roger:** I have received all your last transmission. Not to be used in reply to a question requiring a direct answer in the affirmative or negative.

**Say Again:** Repeat all or the following part of your last transmission.

**Speak Slower:** Speak more slowly.

**Standby:** Wait and I will call you back.

**Wilco:** I understand your message and will comply with it (abbreviation for will comply).
9. **HELMOCOTER LANDING SITES**

9.1 **Introduction.** GLA Landing Sites are provided to enable Aids to Navigation (AtoN) to be maintained. They are not to be used by third parties except for helicopters undertaking Search and Rescue (SAR) or other life saving operations, or in an emergency. Any enquiries from outside organisations (such as the Ministry of Defence, news agencies or commercial companies) are allowed only when authorised through the CFM chain.

9.2 **Landing Site Register.** All approved Landing Sites for GLA operations are listed in the Tri-GLA Landing Site Register. This is a description of each site including contact numbers, photographs and details required by GLA personnel and aviation rules (such as obstacles and warnings), and general information of each site. An extract from the Register showing the approved Landing Sites, their type, dimensions, maximum weight and associated Operating Bases/Field Sites for TH are at Annex 9A for NLB at Annex 9B and for CIL at Annex 9C.

9.3 **Airports.** When operating from airports, the GLA staff must comply with airport procedures; GLA procedures are applied where practicable.

9.4 **Markings**

9.4.1 All helipads and helidecks in regular use shall be marked where practicable with an “H”, orientated to be read by a pilot using the usual approach path.

9.4.2 Where a helipad has a maximum loading restriction for engineering reasons, it is to be painted in a convenient position adjacent to the landing area; it applies to the maximum weight of a helicopter and any freight which may rest on the helipad simultaneously. This is different from helidecks which are marked only with the maximum all up weight of the largest permissible helicopter type in accordance with CAP 437.

9.5 **Site Inspection.** All sites must be inspected prior to use by the HLO/lead passenger and including (where appropriate):

9.5.1 Touch down area and immediate vicinity clear of potential FOD.

9.5.2 Approach and departure paths clear of obstructions.

9.5.3 Wind direction, wind speed, visibility and cloud base suitable for operations at site,

9.5.4 Vehicle parking, load parking, refuelling, Safe and Emergency areas identified.

9.5.5 Marshalling position identified.

For unmanned sites the pilot is to conduct an airborne recce prior to landing to cover as much of the above as practicable.
9.6 **Helicopter Shutting Down.** The helicopter should stop its engines and rotors only on sites where, should it not be able to restart, technical help can be provided easily. This excludes Lantern Tops, Tidal Sites, and other offshore stations which are clearly listed in the Landing site directory. If a helicopter has to wait for an extended period at a site where shutting down is inadvisable, the pilot may elect to stop the rotors and one engine, but keep one engine running to provide electrical power for radios and for re-starting the second engine.

9.7 **New Sites.** Should a new permanent site be required, the options must be assessed and approved at the project planning stage by the Helicopter Operator in consultation with the land owner and an HLO. Where practicable the proposed sites should be level, at least 25m in diameter, and the surface should be firm with no loose items such as gravel or grass cuttings. The immediate approaches must be clear of power and telephone lines, trees and anything that could obstruct the helicopter’s approach. It may also require access for heavy vehicles such as a fuel bowser and lorries bringing freight.

9.8 **Fire and Rescue Equipment.**

9.8.1. **GLA Vessels** are equipped with Fire Fighting and Rescue Equipment to CAP 437

9.8.2. **Operating Bases and Field Refuelling Sites.**

One handheld CO\(^2\) extinguisher for aircraft engine fires
One large, wheeled foam extinguisher for fuel fires.
One mobile kit containing:

- Two 2 kg carbon dioxide (CO\(^2\)) fire extinguishers
- One fireman’s axe
- One pair of heat-resistant gloves
- One crowbar
- One fire blanket

9.8.3. **Other Landing Sites.** There is no statutory requirement or guidance on fire fighting equipment at occasionally-used Landing Sites which is relevant to the GLAs. However, some lighthouses are equipped with extinguishers which should be used if required.

9.9 **Environmental Factors.**

9.9.1. **Fuel and hazardous substance Spillage.**

(steve durham)

9.9.2. **Flora and fauna.** Some sites are affected by bird activity, rare flora and other animal breeding activity. Where this impacts on helicopter operations it will be listed in the Landing sites directory.
### Annex 9A, Summary of TH Landing Sites

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Diameter</th>
<th>Max weight</th>
<th>Operating Base/Field Site/Contacts/Comments</th>
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<tbody>
<tr>
<td>Alderney</td>
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<td>Guernsey Airport</td>
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<tr>
<td>Bardsey</td>
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<td></td>
<td>Roberts Farm / Caernarfon</td>
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<tr>
<td>Bishop Rock</td>
<td>Lantern-Top</td>
<td>26.90 ft (8.2m)</td>
<td>7920 lb (3600 kg)</td>
<td>St Just / St Marys</td>
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<tr>
<td>Caldey Island</td>
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<tr>
<td>Casquets</td>
<td>Elevated</td>
<td>33.78 ft (10.3 m)</td>
<td>8096 lb (3680 kg)</td>
<td>Guernsey Airport / Alderney</td>
</tr>
<tr>
<td>Eddystone</td>
<td>Lantern-Top</td>
<td>26.90 ft (8.2m)</td>
<td>7920 lb (3600 kg)</td>
<td>Penlee Point / Plymouth Airport</td>
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<tr>
<td>Flatholm</td>
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<td></td>
<td>HMS Cambria</td>
</tr>
<tr>
<td>Godrevy Island</td>
<td>Ground Site</td>
<td>32.14 ft (9.8 m)</td>
<td>7920 lb (3600 kg)</td>
<td>Gwithian / St Just</td>
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<tr>
<td>Gwithian</td>
<td>Ground Site</td>
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<tr>
<td>Hanois</td>
<td>Lantern top</td>
<td>26.24 ft (8.0m)</td>
<td>7920 lb (3600 kg)</td>
<td>Guernsey Airport</td>
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<tr>
<td>Hartland Point</td>
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<tr>
<td>Hartland Field</td>
<td>Ground helipad</td>
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<tr>
<td>Harwich Pier</td>
<td>Ground helipad</td>
<td>54.94 x 29.85 ft (16.75 x 9.1 m)</td>
<td>22000 lb (10000 kg)</td>
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<tr>
<td>HMS Cambria</td>
<td>Ground helipad, Operating Base for Flatholm</td>
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<tr>
<td>Longships</td>
<td>Lantern top</td>
<td>26.90 ft (8.2m)</td>
<td>7920 lb (3600 kg)</td>
<td>St Just</td>
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<td>Hartland Point</td>
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<tr>
<td>Lundy Is South</td>
<td>Ground helipad</td>
<td>34.11 ft (10.4 m)</td>
<td>14960 lb (6800 kg)</td>
<td>Hartland Point</td>
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<td>Manorbier Range</td>
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<td>Mumbles</td>
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<td>Ship</td>
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<tr>
<td>Mumbles Car Park</td>
<td>Ground helipad</td>
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<tr>
<td>Nab Tower</td>
<td>Elevated</td>
<td>32.80 ft (10.0m)</td>
<td>7920 lb (3600 kg)</td>
<td>Bembridge Airport</td>
</tr>
<tr>
<td>Needles</td>
<td>Lantern top</td>
<td>26.24 ft (8.0m)</td>
<td>7920 lb (3600 kg)</td>
<td>Bembridge Airport</td>
</tr>
<tr>
<td>Penlee Point</td>
<td>Ground helipad for the area</td>
<td>28.21 ft (8.6 m)</td>
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<tr>
<td>Location</td>
<td>Description</td>
<td>Capacity</td>
<td>Additional Info</td>
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<tr>
<td>Eddystone</td>
<td>Ground helipad, operating base for Skerries</td>
<td>Unlimited</td>
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<tr>
<td>Rhoscryman</td>
<td>Ground helipad, Operating Base for Bardsey</td>
<td>Unlimited</td>
<td>St Just / St Mary’s</td>
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</tr>
<tr>
<td>Round Island</td>
<td>Ground helipad</td>
<td>36 ft (11m)</td>
<td>Unlimited</td>
<td>Shoreham Airport</td>
</tr>
<tr>
<td>Royal Sovereign</td>
<td>Elevated</td>
<td>38.05 ft (11.6 m) square</td>
<td>13816 lb (6280 kg)</td>
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<tr>
<td>Sark</td>
<td>Ground helipad</td>
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<tr>
<td>Scratchells Bay</td>
<td>Ground helipad</td>
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<tr>
<td>Skerries</td>
<td>Ground helipad, Operating Base for Bardsey</td>
<td>Unlimited</td>
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<tr>
<td>Skokholm</td>
<td>Elevated</td>
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<tr>
<td>Smalls</td>
<td>Ground helipad, Operating Base for Skokholm, Smalls and S Bishop</td>
<td>Unlimited</td>
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</tr>
<tr>
<td>South Bishop</td>
<td>Ground helipad</td>
<td>26.24 ft (8.0m)</td>
<td>7920 lb (3600 kg)</td>
<td>St Annes Head</td>
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<tr>
<td>South Stack</td>
<td>Ground helipad</td>
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<tr>
<td>St Annes Head</td>
<td>Ground helipad, Operating Base for Skokholm, Smalls and S Bishop</td>
<td>Unlimited</td>
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<tr>
<td>St David’s Field</td>
<td>Ground helipad</td>
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<tr>
<td>St Tudwals</td>
<td>Ground helipad</td>
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<tr>
<td>Stables Hotel</td>
<td>Ground helipad</td>
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<tr>
<td>Wolf Rock</td>
<td>Ground helipad</td>
<td>24.27 ft (7.4m)</td>
<td>7920 lb (3600 kg)</td>
<td>St Just</td>
</tr>
<tr>
<td>THV Patricia</td>
<td>Helideck</td>
<td>D Value 12 (width of landing circle 11.88 m)</td>
<td>Maximum distributed load 10,000 kg</td>
<td></td>
</tr>
<tr>
<td>THV Galatea</td>
<td>Bow helideck</td>
<td>D Value 13 (landing circle diameter 12.5 m)</td>
<td>Helicopter with Max Take-Off Weight of 3,200 kg</td>
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<td>Stern Vertrep area</td>
<td>Used for vertical resupply (lifting and</td>
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<td>depositing USLs) and for winching casualties, not for landing</td>
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</table>
### Annex 9B, Summary of NLB Landing Sites

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Diameter</th>
<th>Max weight</th>
<th>Operating Base/Field Site/Contacts/Comments</th>
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</thead>
<tbody>
<tr>
<td>Bell Rock</td>
<td></td>
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<td>In suitable weather conditions, the pad is usable from two hours before until two hours after Low Water at Leith. With the ship in attendance and therefore the ability to land as soon as the pad is clear, a height of approx. 2.6m ebb at Arbroath will allow a landing in quiet conditions. The work must be completed by 2m flood at Arbroath. Extreme care is required to watch the incoming tide as sea conditions can quickly mean the pad becomes unusable.</td>
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<tr>
<td>Chicken Rock</td>
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<td>In quiet conditions the pad can be accessed across the walkway from three hours before until three hours after Low Water at Port St. Mary.</td>
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<tr>
<td>Dubh Artach</td>
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<td>Helicopter landing at this light is only to be carried out on the ebb tide. During very quiet weather conditions it can appear feasible to land. During the flood tide however, there is a real risk of a swell wave running in and washing over the rock and the pad without warning. Helios can only commence after high water Oban and must be</td>
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<td></td>
<td>halted approximately 30mins before low water.</td>
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<tr>
<td>Skerryvore</td>
<td>In quiet weather conditions there is generally no restriction. In adverse weather from the SW in combination with high water springs the pad can be unusable due to spray or waves breaking across.</td>
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</tbody>
</table>
## Annex 9C, Summary of CIL Landing Sites

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Diameter</th>
<th>Max weight</th>
<th>Operating Base/Field Site/Contacts/Comments</th>
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<tbody>
<tr>
<td>Achill Beg</td>
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<td>Allihies Sport Fields</td>
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<td>Aran Mór</td>
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<td>Bailey</td>
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<td>Ballycotton</td>
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<td>Ballycotton, Peter Manning's Field (</td>
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<tr>
<td>Barley Cove Beach</td>
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<td>Bhead Clare</td>
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<td>Blackrock Mayo</td>
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<td>Broad Haven</td>
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<td>Bull Rock</td>
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<td>Casey House Bhead Clare</td>
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<td>Castletownbere</td>
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<tr>
<td>Connemara Golf Club</td>
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<td>Deer Island</td>
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<td>Eagle Island</td>
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<td>Eeragh Island</td>
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<tr>
<td>Falcarragh Beach</td>
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<td>Falcarragh Landing Site</td>
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<td>Fanad Head</td>
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<td>Laneway at Currain</td>
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<td>Maidens</td>
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<tr>
<td>Malin Beg</td>
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<td>Malin Head (Dennis Glackins Land)</td>
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<td>Mew Island</td>
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<td>Rathlin East</td>
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<td>Rathlin O'Blrune</td>
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<td>Rathlin West</td>
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<td>Roancarrig</td>
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<td>Scotchport Bellmullet</td>
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<td>Slyne Head</td>
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<td>St Johns Point Donegal</td>
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<td>Straw Island</td>
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<td>Thornhill Murrisk, John Cummins Field</td>
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10. **HLOs AND GROUNDCREW**

10.1 **Helicopter Landing Officers (HLO).** Where an HLO is present, he is the sole person in charge of a helicopter Landing Site and all activities on it for the duration of helicopter operations. He is responsible for the safety (see paragraph 5) and efficiency of the operation from arriving on site until departing after the operation. The HLO has full authority to conduct all ground operations on behalf of the GLA and his decisions on matters relating to general safety, passengers, baggage, packaging and the activities associated with the safe support of flying operations are final.

10.1.1. **Qualifications.** An HLO shall have undertaken HLO training and have undertaken as a minimum Dangerous Goods by Air awareness training.

10.1.2. **Identification.** The HLO shall be identified by high visibility clothing marked with “HLO” and a white radio helmet at all times during helicopter operations.

10.1.3. **Responsibilities.** The HLO shall be responsible for:

10.1.3.1. Ensuring that all operations are responsibly and properly conducted in accordance with the requirements contained in this Manual.

10.1.3.2. Ensuring that all documentation pertaining to the flight is correct, including:

- Correctly completed log (see Annex 10A, Helicopter Operations Log) and completed documentation for the transport of Dangerous Goods.

10.1.3.3. Checking and recording as complete all items on the appropriate pre-flying checklist (see Annex 10C; Pre-Flying Checklist - Land and Lighthouse Operations Annex 11A, Pre-Flying Checklist – Ship Operations, 3GLA Form N).

10.1.3.4. Completing and providing the pilot with an Aircraft Manifest (see Annex 10D, Aircraft Manifest, 3GLA Form O, also available on xxx@gla.com), on all tasked flights, giving details of loads to be carried including weights of passengers, cargo and USLs.

10.1.3.5. Working closely with the pilot, liaising either directly or through the Aircrewmn, and fully updating him on all relevant information concerning the flight and significant changes in wind or weather conditions.

10.1.3.6. Managing and assisting as required with re-fuelling, loading/unloading and Dangerous Goods.

10.1.3.7. Maintaining communication with the helicopter in accordance with Section 8, Communications.

10.1.3.8. Ensuring that everyone working within the landing area wears high visibility clothing and correct PPE.

10.1.3.9. Ensuring that all passengers have seen the Safety Briefing DVD within the approved timeframe and if not, that an Aircrew provides a personal safety briefing.

10.1.3.10. Ensuring that passengers are properly dressed with lifejackets and
survival suits as appropriate, and that none are wearing loose items such as hats which could get caught in the downwash.

10.1.3.11. Checking the packaging and documentation of any Dangerous Goods flown, ensuring that the pilot is given the appropriate Dangerous Goods Declaration before take-off.

10.1.3.12. Rejecting internal and underslung loads which have been improperly prepared for flying.

10.1.3.13. Informing the pilot that he is clear to land / take off, and marshalling the aircraft in accordance with the procedures at Annex 13B

10.1.3.14. Monitoring the pilot’s radio frequency whenever he departs the Landing Site until he confirms he is speaking to another Air Traffic or coastguard radio station. This is most important to ensure that the alert can be raised quickly should the helicopter crash ditch in the sea; the helicopter carries a beacon to alert the rescue services but the HLO should be aware more quickly.

10.1.3.15. Handling any complaints arising from flying operations by escalating through the respective GLA Management Chain without dispute.

10.1.3.16. At the end of operations, confirming with the despatching/receiving location that the times of helicopter arrival and departure logged on the record (Annex 10B, Helicopter Flying Hours Record, 3GLA Form L, also available on xxx@gla.com) are correct.

10.2 Groundcrew. Groundcrew shall always be led by an HLO. Their role is to assist the HLO with the safety and efficiency of the operation. Groundcrew duties may include: acting as fireman, loading, unloading and refuelling the helicopter, and attaching USLs as directed.

10.2.1. Qualifications. Members of the Groundcrew must have undertaken Groundcrew Training. Those assisting with the loading and unloading of passengers and freight must hold at least a current Dangerous Goods By Air Awareness Certificate.

10.2.2. Identification. High visibility clothing must be worn by all Groundcrew involved in helicopter operations.

10.3 Lead Passenger. Where a HLO or Air Crewman is not required a Lead Passenger will be appointed. The Lead passenger will be responsible for ensuring that passengers are properly dressed with lifejackets and survival suits as appropriate, and that none are wearing loose items such as hats which could get caught in the downwash
Annex 10B, Helicopter Flying Hours Record, 3GLA Form L

10.3.1.1.
Annex 10C, Pre-Flying Checklist - Land and Lighthouse Operations, 3GLA Form M

SITE:         DATE:

START TIME:        NUMBER OF: PGO BAGS:

HELO CALL SIGN:           FW BAGS:

WEATHER:          U/S LOADS:

PRIOR TO HELICOPTER OPERATIONS

☐ Check JET A1 and PGO delivery and ensure all personnel involved are familiar with relevant work instructions.
☐ Obtain helo nets, strops and pillow tanks from storage and ensure that lifting equipment is correctly colour coded for the inspection period.
☐ Remove/lash down all moveable objects in the vicinity of Vertrep and helo Landing Site.
☐ Inspect perimeter nets (Towers).
☐ Cargo: loads prepared and weights confirmed/recorded.
☐ Check Cargo for any Dangerous Goods.
☐ Dangerous Goods Check sheet and Notification to Captain completed as appropriate.
☐ Passengers and freight weighed and recorded on H/C F2.
☐ Brief all personnel involved in the day’s operations and allocate duties.
☐ All personnel handling cargo, baggage etc. to have valid Dangerous Goods training certification.

TO BE COMPLETED 1 HOUR BEFORE

☐ Flight Operations manual available.
☐ Helicopter log started.
☐ VHF Channel xx.
☐ Passengers in flight suits, briefed and Safety Briefing DVD viewed.
☐ CO2/dry powder extinguishers, portable foam monitors, and emergency equipment, first aid kit, available.
☐ Cargo loads ready for loading / lifting.
☐ 2 x earthing wires available.
☐ FOD plod completed.

TO BE COMPLETED 15 MINUTES BEFORE

☐ Communications tested (VHF channel).
☐ All unauthorised persons clear of flight operation areas/ restricted access signs in place.
☐ Groundcrew party closed up.

No baggage or freight is to be loaded into the aircraft unless it has been accurately weighed, recorded and the pilot advised.

Pilot to be advised of all Dangerous Goods and to sign Notification to Captain.

Responsible HLO:
11. OPERATIONS FROM VESSELS

11.1 Helicopter Pilot's Responsibilities

11.1.1. The pilot retains responsibility for the safety of the helicopter at all times except when it is closed down and secured to the deck of the vessel to the pilot's satisfaction and in accordance with the procedures at paragraph 11.9 below.

11.1.2. The pilot is responsible for determining whether the weather, sea state and the vessel's pitch and heave are within limits for helicopter operations including landing, taking off, load-lifting and sailing with the helicopter secured to the deck.

11.1.3. The pilot should discuss and agree all proposed helicopter operations with the Captain before implementation. Such discussions may be carried out by VHF radio or mobile telephone.

11.2 Ship's Captain's Responsibilities. The Captain shall ensure that his vessel and crew are fully prepared to receive the helicopter for the planned operation and is responsible for:

11.2.1. Ensuring the specific Pre-Flying Checklist is completed prior to commencing flying operations (see Annex 11A, Pre-Flying Checklist – Ship Operations, 3GLA Form N).

11.2.2. Informing the HLO, both verbally and by means of the red/green visual deck signals where fitted, that permission is granted for the helicopter to land / take off.

11.2.3. Aborting the landing if the situation demands, e.g. the vessel needs to alter course.

11.2.4. Ensuring that passenger, internal and underslung operations are carried out in accordance with this Manual.

11.2.5. The safety of the helicopter when it remains on the vessel, once the pilot has ensured its security in accordance with paragraph 11.9 below.

11.2.6. Discussing in advance with the pilot and the HLO the vessel's heading and manoeuvres during helicopter operations and when the helicopter is secured to the deck.

11.3 HLO Responsibilities. The First Officer is usually the appointed HLO for the vessel. When conducting flying operations to/from the vessel the HLO is responsible for ensuring that:

11.3.1. Prior to the commencement of any helicopter operation the Flight Deck and Deck Crew are fully prepared and the checks and routine specified in the Pre Flying Checklist for the vessel is completed (see Annex 11A, Pre-Flying Checklist – Ship Operations, 3GLA Form N).
11.3.2. Having received notification from the vessel’s Captain that the ship is prepared to receive the helicopter, the descent of the helicopter is marshalled in accordance with paragraph 13.28.

11.3.3. The helicopter is secured to the deck in accordance with the procedures at paragraph 11.9 below.

11.3.4. The only persons allowed on the Flight Deck during helicopter operations are those required for the operation. Deck Crew and passengers must remain clear of the Flight Deck area or within adjoining accommodation until summoned.

11.3.5. Drainage openings and scuppers on the perimeter of the Flight Deck are kept clear to prevent any build-up of surface water.

11.4 **Chief Engineer’s Responsibilities.** The Chief Engineer is responsible for the Jet A1 refuelling facility and its maintenance in accordance with the Helicopter Operator’s procedures at paragraph 15, Refuelling. Prior to the commencement of any helicopter operation, he must ensure and report to the Captain that all necessary services including the fire main and the fuel delivery system are available and operating satisfactorily.

11.5 **Duty Officer on Watch (OOW)**

11.5.1. The OOW shall ensure, and report to the Captain, that the Bridge and all the associated facilities including communications and radar are manned and fully operational. The OOW is also responsible for monitoring and operating the Marine and Aeronautical VHF sets and maintaining a Flight Operations Log of all ETAs, arrivals, departures and the details of passengers and loads.

**Notes:**

1. Prior to the landing on-board, a pilot will need to know the vessel's heading, the wind velocity and other meteorological data, and the estimated heave, pitch and roll. He may call for this prior to the taking off for the vessel and at other times as required.

2. During take-off and landing, radio contact with the pilot should be limited to messages affecting the safety of the helicopter or vessel.

3. The helicopter’s calls should be logged in accordance with paragraph 8.5, Flight Watch

11.6 **Hooker and Back-up Men.** Only deck ratings who have undertaken Groundcrew training shall act as Hooker and Back-up Man. They will be responsible for earthing the helicopter and for the connection of USLs in accordance with paragraph 13.

11.7 **Firemen.** Two Ratings, suitably trained in fire fighting techniques and wearing approved fire suits, helmets (with neck curtain and visor), gloves and boots will have prime responsibility for fire fighting and the rescue of personnel.
11.7.1. On flight decks, one Fireman will man the foam-making monitor on the Flight Deck and other will man the foam-making appliance and the CO² fire extinguisher on the other side of the deck.

11.7.2. On Vertrep areas, one Fireman will man the fixed foam monitor on the crane housing and the other will man a foam monitor.

11.8 Safety Boat Party. During all helicopter operations a rescue boat and crew shall be prepared and ready for immediate launching.

11.9 Securing the Helicopter on Deck. The helicopter must be secured to the deck quickly every time it lands on deck unless it is to remain there only briefly with rotors running. The following procedure is to be followed:

11.9.1. Lashing Team. The lashing team will consist of four team members under the control of the HLO. Each team member is responsible for the attachment and securing of one lashing. Each member of the lashing team should be equipped with a, hard hat, hearing protection (ear plugs/ear defenders) and eye protection.

11.9.2. Lashings. Each ship will carry a total of twelve lashings: 4 x primary lashings, 4 x secondary lashings and 4 x storm lashings. The lashings are secured to the helicopter as indicated in the diagram at Annex 11B, Helicopter Deck Lashing Points. Each lashing consists of:

- A hooked end that attaches to the Flight Deck attachment point;
- A hooked end that is attached to the [lashing eye on the helicopter] and
- A tensioning assembly for tightening the lashing.

11.9.3. Lashing Procedures after Landing. On landing the pilot will signal the HLO to direct the lashing team to secure simultaneously the four primary fore and aft lashings. Each lashing should initially be attached to the Flight Deck securing point before securing the other end to the helicopter. Once both ends are secure the lashing should then be tightened. The lashing team should then clear the rotor disk area of the helicopter under the direction of the HLO. The pilot will then instruct the HLO as to his requirements for securing the secondary and, if required, the storm lashings once the helicopter is shutdown.

11.9.4. Lashing Procedures before Take-Off. The secondary and storm lashings (if fitted) should be removed before the engines are started. After the helicopter has engaged the rotors the lashing team should assemble adjacent to the HLO. On the signal from the pilot the HLO will direct the lashing team to remove the primary lashings simultaneously as follows. The lashing ratchet should be released; the lashing strop should then be removed from the helicopter skid. Finally, the lashing should be removed from the Flight Deck attachment point. The lashing team should then clear the rotor disc area under the supervision of the HLO and reassemble next to the HLO and count off the four lashings in view of the pilot, giving a thumbs up to confirm that the lashings are
clear. Only if the orientation of the helicopter prevents the pilot’s visual check should the confirmation be provided by radio.

Notes

1. Whenever the helicopter is partly lashed to the deck, it is at risk: it is not properly secured yet it is unable to take off from the deck in the event of risks such an unexpectedly large deck movement. Therefore the lashing and unlashing processes must be completed quickly in a coordinated fashion to minimise the danger period.

2. Working under the disc of a rotors-turning helicopter is potentially hazardous due to the noise and rotating components. All lashing team members should be risk aware and take all instructions from the HLO.

3. Once on the deck, the lashings present a trip hazard. Lashing team members and other personnel should be vigilant at all times.

4. Lashing teams should take every opportunity to practise the process of securing the helicopter on the flight deck.

Annex 11A, Pre-Flying Checklist – Ship Operations, 3GLA Form N

R/V: PGO BAGS:
START TIME: FW BAGS:
HELO CALL SIGN UNDERSLUNG LOADS:
WEATHER: SHIPS STAFF REQUIRED:

24 HOURS BEFORE OPERATIONS
- Advise E/R estimated quantity of PGO required
- Check JET A1 and PGO delivery and ensure all personnel involved are familiar with relevant work instructions.
- Clear gangways and rubbish bins
- Remove awnings and stanchions aft and forward
- Remove Jack and Ensign Staffs
- Lift helo nets, strops and pillow tanks from storage
- Remove/lash down all moveable objects from Vertrep and helo decks
- Sweep up rubbish on all decks and on top of buoy crane
- Inspect and lower perimeter nets
- Cargo: loads prepared and weights confirmed/recorded
- Passengers and freight weighed and recorded on H/C F2
- Remove and stow side scan sonar frame
- Remove towing gob eye
- Remove aft deck portable floodlights
- Clear buoys from Vertrep area / ensure aft buoy pod is empty and secure
- Stow buoy working crane in forward position
- Ensure towing winch cover secure
- Fixed foam systems tested and flushed through
- Brief all hands in following days operations and allocate duties

TO BE COMPLETED 1 HOUR BEFORE
- Produce helideck monitoring system report and email to relevant parties
- PIPE – “Prepare for flying. Close and secure all ports beneath flight deck. Aircraft expected at …….hrs. Prepare for flying”
- Clear and stow stern safety net
- Rescue boat ready for launching
- Flight Operations manual and Heli Ops Manual available
- Helicopter log started
- RAM lights tested / RAM shapes bent on
- Answering pennant displayed and light tested
- VHF Channel xx on
- VHF xxx.x MHz on
- Radars available
- CCTV system on displaying aft Vertrep area and helideck
- Passengers briefed and Safety Briefing DVD viewed
- 6 x webbing lashings ready
- CO2/dry powder extinguishers, portable foam monitors, SCBA and emergency equipment available both working areas.
- Cargo loads ready for lifting.
- Fore mast lowered
- Palfinger stores cranes available and in stowage positions
- Fixed foam systems set up as per on-board work instruction and monitors trained on centre of working area. Remote control system tested for’d.
- Dynamic Positioning system set up and tested as required
- 2 x earthing wires available
- Battery room and paint store exhaust fan stops in
- All vents on buoy working crane secured shut
- Main deck hatch and rope store hatches closed
- 2 x lifebuoys transferred forward from aft end of working deck
- Red warning light on top of buoy working crane activated
- Flight deck xenon and perimeter lights tested
- Flight deck hatches closed
- External deadlights on flight deck closed and secured
- External mezzanine hatches and vents shut
- Check valves to fuel spill tanks shut and scupper overboards open (reverse for fuelling)
- Helideck Palfinger stores cranes to be facing aft, as close to the side and as low as possible
- FOD plod completed

**TO BE COMPLETED 15 MINUTES BEFORE**
- PIPE “Hands to flying stations, hands to flying stations”
- On-board communications tested (VHF channel xx and talk backs)
- All Accommodation ports and doors closed
- All unauthorised persons clear of flight deck areas/ restricted access signs in place
- RAM lights and shapes shown
- AIS showing RAM
- Flying courses established
- Emergency courses established
- Flight deck party closed up
- Access from flight deck clear
- If working at night mezzanine deck floodlights off
- Pre-flight checklist completed by HLO, name and signature entered in bridge deck log book

FDO informs bridge when vessel ready for aircraft
OOW gives green light when vessel steady on flying course speed or in DP mode
OOW may not manoeuvre without Master’s consent
FDO may not land or launch aircraft when in red light mode. Red light to be given if alteration of course or speed is unavoidable.

**No baggage or freight is to be loaded into the aircraft unless it has been accurately weighed, recorded and the pilot advised.**
Annex 11B, Helicopter Deck Lashing Points

[Diagrams to be provided by the Helicopter Operator]
The Flight Deck is equipped with 15 lashing points. These are not colour coded as the position and direction in which the pilot may land are varied. The HLO will agree with the pilot the best lashing points to use after landing and before shutdown.
Annex 11D, Deck Lashing Scheme, TLV Patricia

The flight deck of THV Patricia is equipped with six lashing points, three port and three starboard. These lashing points are colour coded red, green and blue from forward to aft.
Annex 11E, Deck Lashing Scheme, NLV Pharos

Lashing Points
Annex 11F, Deck Lashing Scheme, ILV Granuaile
12. **PASSENGER AND INTERNAL FREIGHT OPERATIONS**

12.1 **Standing Instructions.**

12.1.1. Whenever personnel fly from any GLA Operating Base or Field Site, an HLO/Lead Passenger must be present to ensure their despatch conforms to the regulations and these procedures.

12.1.2. Where the task involves transporting only personnel to and from a lighthouse it is not necessary to appoint an HLO for the lighthouse landing area. However, one of the Groundcrew or a designated Lead Passenger should ensure that the Pre-Flying Checks are carried out during the visit (Annex 10C, Pre-Flying Checklist - Land and Lighthouse Operations, 3GLA Form M).

12.1.3. All personnel at a Landing Site or engaged in flying operations shall obey the instructions of the HLO/Lead Passenger.

12.1.4. All passengers mustering at a Landing Site shall be ready 30 minutes before flying operations commence.

12.1.5. When visiting an off-shore lighthouse there must be a minimum of two persons present on the lighthouse at any one time, not including the crew of the helicopter except in extreme circumstances.

12.1.6. A minimum of two forms of communication (marine band VHF, sat phone etc) are to be carried on all visits to lighthouses.

12.1.7. All passengers and internal freight (freight carried in the cabin or the boot) are to be weighed prior to take off whenever possible. Portable scales are provided at each Operating Base for this purpose. Passenger must wear their survival suits for weighing.

12.1.8. Since the helicopter rotors will normally be kept turning during the loading and unloading of cabin freight and passengers, it is essential that the process is carried out promptly and calmly.

12.2 **Internal Freight.**

12.2.1. All loose freight to be carried in the cabin or the boot including personal baggage, tools, equipment, food and other cabin/boot freight should be packed in containers up to a maximum weight of 25 kg for single person lift. Box lids must be secure; if not, they could easily be caught by the wind or the rotor downwash.

12.2.2. The weight of items in excess of 25 kg is to be clearly marked and identified to the Air Crewman / Lead Passenger.

12.2.3. Individual items should be labelled to ease unloading when the helicopter has to deliver to more than one location.
12.2.4. Whilst loading and unloading the helicopter boot, the doors must be secured open using the struts.

12.2.5. When loading the boot, heavier items should be loaded first and placed as far forward as possible.

12.2.6. All items transported in the cabin and boot of the aircraft must be secured beneath a cargo net which must be tightened down using ratchet strops or restraint straps attached to the floor-mounted connection points.

12.2.7. Passengers are to advise the HLO/Lead Passenger/Aircrewman of any Dangerous Goods to be loaded in the cabin or boot that may be included in their personal baggage or carried on their person.

12.2.8. Only personnel trained in Dangerous Goods by Air Awareness are allowed to load any items onto the aircraft whether dangerous goods or not. All Dangerous Goods items are to be clearly identified and have the relevant documentation (Refer to Section 14).

12.3 **Passengers and Internal Freight on Ground/Elevated Helipads.**

12.3.1. When the pilot is satisfied that the helicopter is safely on the helipad, the Aircrewman/Lead Passenger will leave the helicopter and open the appropriate passenger door. All passengers will then:

- Remove headsets in the cabin
- Disembark by the opened door
- Remove Lifejackets when clear of the aircraft
- Help to unload and remove baggage as directed by the Aircrewman / Groundcrew / Lead Passenger.
- Help to re-load baggage for the return flight.

When all the freight is loaded, departing passengers are to don lifejackets prior to embarking the aircraft, board the helicopter and don headsets when inside.

Prior to departure, the Aircrewman or Groundcrew or Lead Passenger will ensure that all passengers are wearing lifejackets and seat belts and that the boot and passenger doors are secured.

12.4 **Passengers on Lantern-Top Helipads.** The procedures above are to be followed on Lantern-Tops except:

12.4.1. All personnel must remain below the helipad until the on-coming people have reached them. They may then proceed up to the helipad to load their baggage, and embark the aircraft.

12.4.2. Helipad hatches are usually opened and closed by GLA personnel. During helicopter operations, one hatch is left open so the pilot can
orientate the helicopter to enable access to and from the helipad. This will normally be the hatch to the right of the pilot when the helicopter is facing into the wind.

12.4.3. Prior to final departure the Aircrewman/Lead passenger will confirm to the pilot that all hatches have been closed.
13. **UNDERSLUNG LOADS**

13.1 **Introduction**

13.1.1. Underslinging is the most efficient way to transport bulky or heavy freight and large quantities of small freight. Loads may be carried on pallets and in nets, bundles, bags and tanks. It is easier to amalgamate small items into a single Underslung Load (USL), rather than struggle to lift heavy packages into the helicopter’s cabin or boot.

![Mixed items of freight loaded in a net](image)

13.2 **Standing Instructions.**

13.2.1. USL operations from Field Sites shall be undertaken by a minimum crew of two: an HLO and one Groundcrew to act as Hooker. A third Groundcrew should be included whenever practicable to act as Back-up Man or Fireman.

13.2.2. Only one person is normally necessary at the dropping site to marshal the aircraft to the correct position for releasing the load, although others may be at hand, for example to return nets and slings.

13.2.3. Should the HLO detect any operational problem or uncertainty once lifting has commenced, he must advise the pilot, who may return to the lifting site and shut down to discuss and resolve the issue.

13.2.4. GLA personnel may assist with USL operations but the ultimate responsibility for preparing, marshalling, lifting, flying and releasing USLs rests with the Helicopter Operator.

13.2.5. The following paragraphs on preparing and flying USLs are only for guidance in planning routine operations. Every load has different flying characteristics and must be discussed and assessed by the HLO and pilot at the time of lift. It may be that the pilot is content to vary the following instructions, for example on minimum, normal and maximum
weights, slinging methods and sheet material sizes. The pilot must make all such judgements, and those concerning the speed of flight, based on information provided by the GLA, the conditions on the day and his experience. He may wish to alter the loads or the slinging arrangements or to attempt a test lift before starting deliveries; his requests and decisions are final.

13.3 Groundcrew Roles. The following roles may be required at a USL lifting site; some may be combined:

13.3.1. HLO who normally acts as the Marshaller, and wears a white radio helmet.

13.3.2. The Hooker, who also wears a radio helmet, works under the control of the HLO and is normally the only person permitted beneath the hovering helicopter.

13.3.3. The Back-up Man/Fireman, who may be needed to assist the Hooker. On no account shall there be more than two persons underneath the helicopter.

13.3.4. A load handling team.

13.4 Planning.

13.4.1. USLs may not be flown over populated places or areas. At the planning stage, the need for extra landing site security, road closures and co-ordination with the local police should be considered.

13.4.2. Unusual loads and loads which will not conform to the following guidance must be discussed with the Helicopter Operator during the project planning stage.

13.4.3. Repetitive short flights on USL operations are tiring and potentially dangerous for helicopter crews. The pilot will assess the distances to be flown, the weather and the nature of the loads, and may plan to break up the task with rest periods. This must be considered when planning USL operations.

13.5 Briefing.

13.5.1. Prior to commencing external load lifting the pilot will shut down the helicopter and discuss the operation with the HLO, including:

13.5.1.1. Current and forecast weather.

13.5.1.2. Site plan including the selection of Emergency and Safe Areas.

The Emergency Area is where the pilot will jettison the load and may make an emergency landing without danger to people on the ground. This area must be agreed with the pilot, and personnel on site must be made aware of the area. If practical, the area should be marked by flags or markers.
The Safe Area is the area to which all personnel except the HLO and Hooker must retire during the approach and departure of the helicopter. All personnel are to go to the Safe Area if warning is given of an impending forced landing on the landing area and time permits.

13.5.1.3. Routine and emergency procedures including engine and hook-release failure and load jettisoning.

13.5.1.4. The number, order, nature and weights of the loads; lighter loads are normally lifted first and heavier ones flown once the helicopter has burned off some fuel.

13.5.1.5. Dangerous Goods.

13.5.1.6. Timescales, and rest periods during repetitive short sectors.

13.5.1.7. Load positioning and orientation. If these are critical, landing positions must be clearly marked.

13.5.2. The pilot will then brief all of those concerned with the operation. Exceptionally, if circumstances prevent an on-site briefing, the pilot will brief the HLO by radio/phone prior to commencement and the HLO will brief the other members of the lifting site team.

13.6 USL Equipment.

13.6.1. Helicopter Strop. Loads should usually be hung from the helicopter’s hook on the [3]m strop provided by the Helicopter Operator, which has a hook at the bottom end which is opened electronically by the pilot. This ensures that the helicopter hovers well above the Hooker during hook-up, giving the pilot more opportunity to move the helicopter to one side in the event of an emergency. Load operations on Lantern-Tops may be flown with a short strop or with the load connected to the hook via just a swivel to allow the pilot to operate in a lower hover where he can see the edge of the deck for reference. Labelled diagrams and Hooker's instructions for the normal and emergency operation of the aircraft hook and the [3]m strop are at Annex 13A Helicopter Underslung Load Hook.

13.6.2. Six-Monthly Inspection. Each GLA is responsible for providing all USL equipment to be attached to the hook at the bottom of the [3]m strop including nets, slings, strops, chains and special-to-purpose containers. All such equipment is to be inspected by the GLA Lifting Gear Examiner or specialist subcontractor at the required frequency (normally 6-monthly) and cow-tagged; the colour of the current cow-tag is to be included on every work schedule. Helibags are not cow-tagged because their working lives are too short. Each GLA shall keep records of the inspection of each piece of USL equipment.

13.6.3. Inspection before Use. The HLO is to inspect all USL equipment immediately prior to its use to ensure:
13.6.3.1. It has the current cow-tag
13.6.3.2. It is adequate for the load
13.6.3.3. It is serviceable: no strands are broken; no signs of kinking; no damage or corrosion to metal eyes; no chemical or oil contamination, chafing, cuts, fraying or loss of stitching in nets and webbing strops. The mesh cord of nets must have no more than 10% of its strands severed it and there must be no damage to the border cord or the main lifting strops.
13.6.3.4. The security, function and condition of attached components including swivels, links etc.

13.6.4. **Storage and Repair.** Lifting equipment should be stored in a clean dry ventilated area clear of the ground. Ideally it should be hung from the master link. If this is not possible it should be coiled or neatly folded in such a manner that no strain is applied to any component. Avoid hanging items over sharp edges. Strops and nets can be washed in clean cool water and hung up to dry naturally; they should not be heated or otherwise force-dried. The same procedures should be used for nets and strops which have become wet in use. No attempt should be made to repair damage USL equipment; repairs should only be carried out by the manufacturer.

13.7 **Preparation of Loads**

13.7.1. Made-up loads must be prepared in advance. All items making up a single load must be securely fastened together.

13.7.2. USL operations can be optimised by preparing loads to fly at best speed, which depends on the size, shape, weight and density of the load. Round shaped (netted) loads fly better and faster than box-shape loads, and heavy loads fly better than light ones.

13.7.3. Close control of the weight and balance of loads is essential. Sand and aggregate can absorb water and gain weight; they should be kept dry and, if possible, weighed immediately before loading. Large loads should bear an indication of the position of the centre of gravity.

13.7.4. The HLO must ensure that all loads have been properly prepared and weighed, and that no loose lashings, wrappings, strops, nets, etc could be picked up by the helicopter downwash. As facilities for weighing freight at lighthouses are limited, the weight should be entered on a label on the outward flight and the same weight used on the return flight.

13.7.5. Dangerous Goods carried underslung are still Dangerous Goods; the same documentation, packaging, labelling, handling and segregation rules apply as for DG transported in the cabin or boot.
13.7.6. All USLs must include a swivel mechanism in the lifting system. This will normally be the swivel hook on the lifting strop.

13.7.7. Loads to be lifted should be located at or near the centre of the lifting site, ensuring that the rotors will be well clear of any obstacles while the pilot is concentrating on the load.

13.8 **Underslung Load Weights.** The weight of all USLs must be determined by weighing or by calculation. The maximum weight that can be carried by the helicopter is dependent on the fuel load in the helicopter, the distance the load is to be carried, the location of refuelling facilities and the wind velocity and air temperature.

13.8.1. **Routine Maximum Weight.** For general planning purposes on most operations, the normal maximum load should be xxx lbs (xxx kg) gross giving a radius of action of xx NM.

13.8.2. **Greater Weights.** The pilot may agree to carry up to xxx lb (xxx kg) over a maximum xx NM radius of action if necessary. The increase requires cool temperatures, some wind and unobstructed pick-up and drop areas. It is imperative that the pilot is consulted on the maximum weight that can be lifted.

13.8.3. **Minimum Loads.** Large light loads are potentially dangerous. No load should weigh less than 200 kg, and all large light items must be ballasted or (more efficiently) combined with other heavy items to be delivered. The pilot must always be informed of the load weight, but light loads should be given extra emphasis.

13.8.4. The weight of strops, slings, hooks, swivels, etc. must be included in the total weight to be lifted.

![Empty plastic tanks weighted with batteries in a net](image)
13.9 **Helibags.** A helibag which fails in flight poses a considerable danger to the aircraft, with potentially fatal results. If it has been abraded or torn and a load such as sand leaks out in flight, the bag will act like a flag and may fly up into the tail rotor.

13.9.1.1. Helibags must have a Safe Working Load (SWL) of 1000kgs and have a safety factor of 6:1.

13.9.1.2. All bags are to be thoroughly inspected and the safe working load checked prior to loading, especially when returning from a site where the bags may have been subject to weather and misuse. They are to be rejected if there are any signs of damage including cuts, stitching and worn fabric where the bag has been dragged when loaded.

13.9.1.3. Helibags can be lifted in cargo nets, but the tops should be secured with cord in case they tip over, spilling their loads which might fall through the net.

13.9.1.4. It is imperative when using bags for underslinging that the whole load is contained within the bag, with no parts protruding from the top. If the bag does not close when lifted by its handles a net should be used instead. There must be no sharp edges in contact with the bag; sharp items such as scrap metal should be wrapped and loaded carefully. If necessary the top of the bag must be closed or tied off securely to prevent the escape of light items.

13.9.1.5. Concrete blocks may be underslung in helibags on condition that new bags are used and that each bag is properly checked prior to use. The blocks must be laid into the bag in such a way that a minimum of sharp edges or corners are in contact with the bag, and the corners should be padded to protect the bag. Care must be taken to place the blocks and not drop or throw them into the bags.

13.10 **Netted Loads.**

13.10.1. Nets should be used when the load consists of a number of small articles; netted loads should be prepared so that the net easily closes over the load to prevent any items coming out in flight.

13.10.2. Extreme care must be taken when lifting items with sharp or rough edges, e.g. slates, ridge tiles. Slings, strops and the load net must be routed to avoid sharp or rough edges or protected from being cut using timber packers, secured so as not to dislodge during flight.

13.11 **Bundled Loads of Long Items.** Individual items should not exceed 3 m in length. Items such as scaffolding poles, reinforcing bars and planks must be prepared in bundles secured by three ratchet straps, and slung horizontally using two continuous (round) slings, positioned as far out towards the extremities as possible. The two slings must be passed around the load in opposite directions. Where more than one bundle is underslung at a time they must all be tied together with ratchet straps.

13.12 **Pallet loads** should normally be carried in nets.

13.13 **Boxed Loads.** Strong wooden boxes and plastic creates are a good means of transporting general work and domestic equipment, engine parts etc. The crates may be retained on site for re-use on site clearance.
13.13.1. Cargo packed in boxes and crates must be tightly packed and cushioned to prevent movement in flight. Lids must be secured tightly to the crates, either with ratchet straps or cable ties.

13.13.2. Boxes and crates must be forklift-compatible. Webbing slings used to carry boxed loads must be prevented from slipping in towards the centre of the load (causing it to tip over) and outwards (releasing the load).

13.14 Building Materials

13.14.1. Sand, Gravel, Cement etc is to be supplied and transported in 25 kg bags (for easier handling on site) which are placed inside helibags.

13.14.2. Bricks and blocks should be stacked into helibags. Several bags may be carried in a net.

13.15 Sheet Materials should be flown horizontally in nets, heavily weighted with other items or sand bags or full water containers. Sheet materials are very difficult to fly because they tend to generate lift like a wing; it may be necessary to fly at a much reduced airspeed.

13.15.1. Reinforcement sheets should be cut so that no dimension is greater than 3 m, then ratchet strapped together to produce a load of sufficient weight.

13.15.2. Solar Panels should be crated for protection and either flown in a net or slug individually depending on size.

13.16 Security Fencing. Section sizes are normally 1.8m high x 2.4m long. They must not be slung through the wires as the tack welds are not capable of taking the load without damaging the fence. They are best bundled together or flown with ballast.

13.17 Plant and Machinery. Items with tested and certificated lifting eyes (compressors, grit blasting equipment, concrete skips, etc) are lifted using chains hooked to the lifting eyes, or in a net. They must be checked for DG compliance: fuel tanks should be drained, and batteries disconnected and packed correctly. Machinery must also be checked for loose items such as starting handles that might fall off in flight.

13.18 Empty Tanks and Drums must be underslung in nets with sufficient ballast added. Large numbers of drums can be underslung using two nets together. The two nets are to be connected together by a shackle at the attachment point so that the cargo hook has only one load attachment. Empty drums must not be underslung in helibags.

13.19 Scrap Metal. If the quantity and nature of scrap metal is not suitable to be wrapped and carried in helibags, it should be cut to size and ratchet strapped to a pallet larger than the metal, and slung by strops, protected where necessary from the sharp edges.

13.20 Fluids. [NLB use Aliberts, TH use pillow- and toblerone- tanks and plastic washing-water tanks. CIL? Standardise before future container procurements?]

13.21 Lifting Procedure.
13.21.1. Before load lifting commences, the normal and emergency hook release systems will be tested by the Aircrew.

13.21.2. It is important that good two-way radio communication exists between the HLOs at the departure and receiving stations and the helicopter. Combined helmet/headsets are provided by the Helicopter Operator on frequency 157.500 MHz (VHF Marine Channel 30).

13.21.3. The HLO must inform the pilot of the weight of each load prior to lifting.

13.21.4. The Hooker stands by the load facing the approaching helicopter with the static probe ready.

13.21.5. The Marshaller marshals the helicopter towards the load as specified in paragraph 13.28 below.

13.21.6. The Aircrewman if carried directs the pilot to position the hook above the load.

13.21.7. The Hooker touches the static probe on the hook to discharge static electricity, immediately attaches the load to the hook, and moves quickly to a safe area, with the Back-Up Man if used. The Hooker may remain beside the load if required to stabilise netted loads or to ensure that strops to not tangle or catch on the load during the lift.

13.21.8. When they are clear, the Hooker gives a "thumbs up" sign to the Marshaller and the helicopter climbs away as directed by the Marshaller.

13.21.9. When the strops are taut and the load is light on the ground, the Hooker and the Marshaller must check that the strops are not twisted, that the load is stable and correctly suspended and that there is no damage to the net, helibag or lifting straps before the Marshaller gives the signal to fly away.

13.21.10. As the load flies away, the Hooker and the Marshaller must watch it to check that it is flying normally until it is out of sight. If the load tilts or swings unusually, inform the pilot immediately by radio.

13.21.11. Before each load, the pilot will inform the HLO by radio of his available payload and the HLO will confirm the weight of the next load.
13.22 Underslung Load Speed and Stability in Flight.

13.22.1. Most loads carried beneath a helicopter will become unstable at too high a speed, determined by the aerodynamic characteristics of the particular load. This airspeed is difficult to predict accurately; it requires the experience of the pilot and sometimes experimentation to determine the best speed at which to fly. The nature of all loads should be therefore be discussed with the pilot during the onsite briefing prior to lifting operations commencing.

13.22.2. It is important that all loads should be watched by ground crew on departure, and any unusual behaviour reported immediately to the pilot. While pilots will monitor the load at all times, additional observation by ground crew enhances the safety of USL operations and should be a matter of standard practice.

13.23 Underslung Loads from Lantern-Tops

13.23.1. USLs should be made up on the Lantern-Top in a position to the left of the helipad when facing into the wind so the pilot can keep sight of the helipad when he is lifting the load.

13.23.2. All personnel are to remain below the helipad as the helicopter approaches and comes to the hover alongside the lighthouse.

13.23.3. When the Aircrewman or pilot indicates, the Hooker should move up onto the helipad and position himself alongside the load with the earthing probe in his hand. The helicopter will then position over the load allowing the hook-up to be effected.

13.23.4. The Hooker must then return to his position below the helipad before the helicopter lifts the load.

13.23.5. Under no circumstances shall the number of full pillow tanks held on a Lantern-Top helipad exceed 8 x 400 litre tanks or 4 x 800 litre tanks to avoid overloading.

13.23.6. The pillow tanks should be located around the perimeter of the helipad ensuring that there is sufficient area for the helicopter to land.

13.24 Underslung Loads from Vehicles.

13.24.1. When it is necessary to undersling cargo out of the back of a lorry, the lorry is to stay clear of the site until the helicopter has landed and briefed. The loads are to be prepared and secured before the lorry arrives on site. The lorry must not be parked in the lifting zone until the loads are ready in all respects for lifting.

13.24.2. When loads are being placed on a lorry, the lorry must be in place in good time before the helicopter arrives.
13.24.3. Every effort should be made to avoid vehicle movements while the aircraft is flying. Where this cannot be avoided it must be included in the briefing. Care must be taken to avoid conflict between vehicles and aircraft or personnel.

13.25 **Underslinging – Weather.** Because of the danger of a lightning strike, loads must not be carried when electrical storms are known to be in the immediate area.

13.26 **Dropped and Jettisoned Loads.** All incidents of partial or complete load spillage and load jettisoning are to be reported in accordance with *Annex 5A, Report of Safety Concern or Occurrence, 3GLA Form A* to the GLA Planning Officer who will forward the report to the GLA QHSE Manager. Any dropped loads containing DG must be reported to the Aviation Authority and environmental agencies as soon as possible.

13.27 **Marshalling the Helicopter**

13.27.1. There are two methods of marshalling: by radio and by hand signals. Marshalling by radio is the preferred option; Marine Band radio headsets are to be used. Hand signals may be used in addition or as back-up; the standard signals are shown at *Annex 13A*.

13.27.2. Marshalling is normally done by the HLO but may be delegated to trained Groundcrew. Only trained personnel are permitted to marshal helicopters.

13.27.3. **Routine Hand Marshalling Procedures.** Whenever possible, the Marshaller should always:

13.27.3.1. Have his back to the wind and face the approaching or manoeuvring helicopter so that it can fly into the wind.

13.27.3.2. Complete all marshalling signals positively and with emphasis.

13.27.3.3. Remain in line of sight of the pilot so that he can be seen at all times.

13.27.4. **Hand Marshalling.** The Marshaller should:

13.27.4.1. Position himself upwind of the Landing Site or USL, outside the periphery of the main rotor blades, to one side of the track which the helicopter will follow as it flies away, and in sight of the pilot.

13.27.4.2. Start directing the helicopter to lift into the hover at a suitable height, or at about 200 m away on the approach. The pilot will generally be able to position the helicopter approximately over the load, but the Marshaller should provide the fine sideways, backwards and forwards movements to ensure it is directly overhead.

13.27.4.3. Signal the hover while the helicopter is over the load being hooked up, and then signal to lift slowly. If the helicopter is not directly over the load signal the hover again, then direct it over the load before signalling to continue climbing slowly. Otherwise violent swinging can occur.
13.27.4.4. When the strops are taut and the load is light on the ground, quickly check visually that the strops are not twisted and the load is correctly suspended; if not, signal the helicopter to descend to a lower hover and correct the situation or abort the lift.

13.27.4.5. When the load is airborne and stable, signal the helicopter to continue climbing and fly away.

13.27.4.6. As the load flies away, watch it to check that it is flying normally until it is out of sight. If the load tilts or swings unusually, inform the pilot immediately by radio.

13.27.5. Remember: a pilot would rather be marshalled than not. The pilot may not follow your signals exactly because of other considerations, but be assured that marshalling is a valuable contribution to safe and efficient operations.

13.28 Oil Pollution. Should the pilot be required to jettison a load containing fuel oil during a delivery flight, flying operations are to be suspended and the appropriate action taken in accordance with the Oil Pollution Emergency Plan.
Annex 13A Helicopter Underslung Load Hook

[Labelled diagrams and Hooker’s instructions for the normal and emergency operation of the aircraft hook and the [3]m strop to be inserted by Helicopter Operator]

[Picture to be replaced by one of the Helicopter Operator’s hook:]
Annex 13B, Helicopter Marshalling Signals
HELECOPTER HAND SIGNALS

CLEAR TO START ENGINE
make a circular motion above head with right arm.

HOLD ON GROUND
extend arms out at 45
thumbs pointing down.

MOVE UPWARD
arms extended
swooping up.

MOVE DOWNWARD
arms extended
sweeping down.

HOLD HOVER
arms extended with clenched fists.

CLEAR TO TAKE-OFF
extend both arms above head in direction of take-off.

LAND HERE, MY BACK IS INTO THE WIND
extend arms toward landing area with wind at your back.

MOVE FORWARD
extend arms forward and wave helicopter toward you.

MOVE REARWARD
arms extended downward
using shoving motion.

MOVE LEFT
right arm horizontal,
left arm sweeps over head.

MOVE RIGHT
left arm horizontal,
right arm sweeps over head.

MOVE TAIL ROTOR
rotate body with one arm extended.

SHUT OFF ENGINE
cross neck with right hand, palm down.

FIXED TANK DOORS
open arms outward,
close arms inward.

RELEASE SLING LOAD
contact left forearm with right hand.

WAVE OFF DO NOT LAND
wave arms from horizontal
to crossed overhead.
14. **DANGEROUS GOODS**

14.1 **Introduction.**

14.1.1. **Definition.** Articles or substances capable of posing a risk to health, safety, property or the environment which are shown in the list of Dangerous Goods (DG) in the International Civil Aviation Organisation’s (ICAO) Technical Instructions, are subject to the Chicago Convention on International Civil Aviation; ‘The Safe Transport of Dangerous Goods by Air’. The Convention is ratified by the UK and Ireland and enforced by their Aviation Authorities.

14.1.2. **Compliance.** The GLAs will comply with all the legal requirements of DG legislation, subject to any exemptions granted to its helicopter Helicopter Operator by the Aviation Authorities. To comply, all loads will be packed in accordance with ICAO Technical Instructions (which are not repeated here). In addition, the Aviation Authorities require that a copy of Section [X] of the Helicopter Operator’s Operations Manual is available to all GLA employees involved in the packing or despatching of DG; it is reproduced at Annex 14A, Helicopter Operator’s Operations Manual, Dangerous Goods, [to be provided].

14.2 **General.**

14.2.1. **Responsibilities.** For the purpose of the regulations, the GLA is deemed to be the Shipper and usually the Packer of the goods. It is the responsibility of the Shipper to determine whether a substance or article is dangerous, and to ensure that it is packed correctly so as to enable it to be carried safely by helicopter. For the GLAs, this is the responsibility of the trained Dangerous Goods by Air operative on site whether the goods have been purchased locally, delivered directly by the supplier, or despatched from a depot.

14.2.2. **Ordering DG.** When ordering DG which will be transported by helicopter consideration should be given to the quantities contained in the supplier’s individual packages or containers to facilitate the most convenient and cost effective method of complying with the relevant packing instructions.

14.2.3. **Training Requirement.** All personnel involved in packaging, labelling and transporting DG by air must have completed an approved course on the Safe Transportation of Dangerous Goods by Air hold a valid certificate of competency. For the GLAs, “transporting” this means that the HLO and/or Groundcrew despaching the load must be qualified to check the loads and complete the proformae, and anyone loading the helicopter must be qualified in DG by Air awareness.

14.2.4. **Underslung Loads.** All DG transported by under-slinging have the same classification as though they were being transported within the helicopter. Therefore all documentation, packaging, labelling, handling and segregation rules apply.
14.3  **DG Dispensations.**  [to be confirmed/amended by the Helicopter Operator]

14.3.1. In addition to the main classifications of DG, there are two transport classifications relevant to the GLAs: “Passenger and Cargo Aircraft” and “Cargo Aircraft Only”. The GLA helicopter(s) operate in both roles, but it is forbidden to transport ‘Cargo Aircraft Only’ DG on a passenger flight unless an exemption has been granted by the Aviation Authority.

14.3.2. The Helicopter Operator has dispensation from the Aviation Authority from other DG regulations for the purpose of lighthouse support. These include:

14.3.2.1. The quantities and weights of some DG carried;
14.3.2.2. The dimensions of hazard warning labels on cylinders of compressed gas and the use of "Cargo aircraft only" labels;
14.3.2.3. Emergency response information, the use of the Dangerous Goods Transport Document for a series of related flights, and a single notification to the pilot-In-command on a series of related flights;
14.3.2.4. The inspection of DG by the shipper on behalf of the Helicopter Operator;
14.3.2.5. The carriage of aerosols in passenger baggage and of butane gas powered soldering irons;
14.3.2.6. The carriage as USLs of wet filled batteries not packed in accordance with the requirements.
14.3.2.7. The carriage of Cargo Aircraft Only DG on the same flight as passengers. Where possible, this should be avoided but if this is not practical, passengers may travel with the cargo under the following conditions:
   - The DG must be carried in the approved storage container or designated area on the helicopter;
   - The DGD should quote the exemption reference number;
   - At least one passenger, trained in the use of fire extinguishers, must be qualified under DG training requirements. (see column 6 of Table 1.5.A within the IATA Regulations);
   - The Passenger must have knowledge of the DGs and be capable of dealing with adverse cargo movement or leakage;
   - The Captain must be aware before the flight.
   - All relevant declaration documentation, checklists, packaging, handling and labelling requirements (including 'Cargo Aircraft Only' labels) apply.

14.4  **DG Classifications.**

14.4.1. DG are divided into nine Classes:

Class 1:  Explosives and pyrotechnics

Class 2:  Gases including compressed, liquefied, dissolved under pressure and refrigerated)

Class 3:  Flammable liquids, e.g. petrol, diesel, oil-based paints etc.
Class 4: Flammable solids.
Class 5: Oxidizing substances, e.g. oxygen and certain cleaning materials.
Class 6: Poisonous and infectious substances, e.g. rat poison and disinfectants.
Class 7: Radioactive materials
Class 8: Corrosives, e.g. batteries, acid etc.
Class 9: Miscellaneous DG not covered by Classes 1 to 8 (e.g. life rafts, asbestos, magnetized materials)

Some DG have subsidiary risks where there is more than one hazard associated with them. For example, a chemical could be both a toxic liquid and a corrosive; each subsidiary risk requires its own hazard label.

14.4.2. **Incompatible Dangerous Goods.** Certain classes of DG are liable to react dangerously if in close proximity. These are referred to as Incompatible DG and must be segregated during storage and handling. They must not be loaded on the helicopter together but must always be transported on separate flights.

14.4.3. **Packing Groups.** Most DG are assigned to one of three Packing Groups according to the degree of danger they present:

- Packing Group I: Substances presenting high danger
- Packing Group II: Substances presenting medium danger
- Packing Group III: Substances presenting low danger

14.5 **Planning.** The intention to transport DG by helicopter must be declared on the Helicopter Request Form (Annex 7A, Helicopter Flight Request Form, 3GLA Form J, also available on xxx@gla.com). Requests should state the proper shipping name for the DG, the UN number if known, the type and number of units and all weights in kg. Failure to declare DG to OPC could result in the flight being aborted on the day.

14.6 **Packaging and Labelling.**

14.6.1. The GLA’s have dedicated supplies team who will ensure that the relevant DGA paperwork is completed and that the stores are appropriately packaged. They will then be sent in appropriate transport to the relevant Operating Base.

14.6.2. The "proper shipping name" is shown in **bold** text in column B of table 4.2 of the IATA Dangerous Goods Regulations and must be used on the appropriate documentation & packaging.

14.6.3. Where DG are to be removed from a lighthouse and flown ashore they are to be packaged in accordance to the IATA DG requirements either
in the original packaging in which they were flown out (provided it remains fit for purpose) or in appropriate new packaging available from depots.

14.7 Documentation.

14.7.1. DG Checklist. A DG Check List is to be completed for each consignment of DG to ensure that the packaging, labelling and documentation comply with current regulations. The form is at Annex 14B, Dangerous Goods Checklist, 3GLA Form T. Two copies are to be forwarded with the goods for completion by the trained Dangerous Goods by Air operative on site.

14.7.2. Dangerous Goods Declaration (DGD). The trained Dangerous Goods by Air operative on site is responsible for the completion of a DGD for each shipment. A specimen is at Annex 14C, Declaration of Dangerous Goods for Air Transportation and supplies of pre-printed carbon forms should be demanded from [?]. It must be completed in triplicate whenever DG are to be carried by the helicopter and the copies handled as follows:

14.7.2.1. The person packing and completing the DGD will sign all copies and retain the BLUE copy for reference.

14.7.2.2. The WHITE and PINK copies of the DGD plus the two copies of the Dangerous Goods Checklist are to be forwarded with the goods.

14.7.2.3. The HLO, on receipt of the DG package, is to conduct acceptance checks on the package and DGD against the Check List, then complete and sign the DGD.

14.7.2.4. The HLO retains the PINK copy of the DGD and one copy of the Checklist and passes the WHITE copy of the DGD and one copy of the Checklist to the pilot for signing.

14.7.2.5. If DG are to be shipped from a lighthouse and there is not a second qualified person available to conduct acceptance checks, the Aircrewman has received the relevant training and approval from to perform this duty.

14.7.2.6. The Yellow copy of the DGD is not required.

14.7.3. Return from Offshore. Where DG are sent ashore from offshore lighthouses, the trained Dangerous Goods by Air operative on site will be responsible for ensuring that the regulations are complied with on the return flight.

14.7.4. Retention of Documents. Completed DGDs and Check Lists must be kept for a minimum of six months. After this period the forms can be shredded.

14.8 Loading of Dangerous Goods.

14.8.1. Inspection. Packages must be inspected prior to loading in an aircraft or load container. Any package found to be damaged or leaking shall
not be loaded. Any remaining packages are to be checked to ensure that they are undamaged and free from contamination.

14.8.2. Segregation. Packages containing DG which might react dangerously with each other must not be stowed on an aircraft next to each other or in a position that would allow interaction between them in the event of leakage. Table 9.3.A in the IATA manual should be referred to ensure correct segregation between packages having hazards requiring separation.

14.8.3. Securing. All packages must be secured in the helicopter in such a manner as to prevent their movement in flight.

14.8.4. Orientation. Package orientation must be strictly observed during handling, storage, loading, and transport.

14.8.5. Hidden Dangerous Goods. All staff involved in helicopter operations must be alert for hidden DG that may have been inadvertently placed in packages, personal baggage, tool kits etc. Some passengers may not be aware that certain items are classified as DG. Guidance on hidden DG can be found in Sect 2.2 of the IATA manual.

14.9 Dangerous Goods Carried by Passengers. DG are not to be carried by passengers in either their personal baggage or on their person without the permission of the Helicopter Operator. Section 2.3 of the IATA manual advises those DG that may be considered for passengers to carry on board with the Helicopter Operator’s consent. The HLO or responsible person should report to the Management Chain any passengers taking undeclared DG onto the helicopter.

14.10 Empties, Returns, Waste and Scrap. UN specification packaging is expensive and should always be stored carefully offshore for use on the return journey or sent ashore for re-use. In the case of empty uncleaned containers which contain the residue of DG, e.g. petrol containers, gas cylinders etc., a DGD form must be completed. The words EMPTY UNCLEANED are to be placed after the UN number on the Declaration form.

14.11 Dangerous Goods Accident, Incidents and Other Occurrences

14.11.1. Any damaged or leaking packages found on the helicopter either when loading or unloading should be immediately notified to the pilot. The helicopter should be shut down and inspected, by a qualified engineer if available, at the first suitable location. Any contamination of the helicopter should be cleaned immediately if safe to do so in consultation with the Aircrew; appropriate PPE should be worn,

14.11.2. The Helicopter Operator is required to report DG accidents, incidents and other occurrences to the Aviation Authority. The GLAs will assist in the process as required and the Helicopter Operator will provide a copy of the completed report to the CFM.
Annex 14B, Dangerous Goods Checklist, 3GLA Form T
15. **REFUELLING**

15.1 **Background**

15.1.1. **Quality.** The fuel used in a helicopter requires special handling and storage. Negligence or carelessness can endanger a helicopter and the lives of all on board. It is therefore essential that the correct grade, quality and quantity is supplied.

15.1.2. **Type.** The helicopter uses "Jet A1" turbine fuel which is a form of kerosene with a minimum flash point of 38°C, which is unlikely to explode or to catch fire without a heat source. However the vapour is flammable; any fuel spillage should be washed away or covered with foam as soon as possible.

15.1.3. **Availability.** GLA operations require fuel readily available close to each operating area to ensure that the helicopter can lift large loads and not waste time flying off frequently to refuel.

15.1.4. **Responsibility.** The Helicopter Operator is responsible for the quality of all fuel used by the helicopter including that managed and issued by GLA personnel. Therefore GLA personnel are to comply with the Helicopter Operator’s instructions below.

15.2 **Vessels**

15.2.1. **ILV Granuaile** has a single 1,800 litre Jet A1 tank; **THV Galatea** has a single 6,000 litre Jet A1 tank; **NLV Pharos** has two 6,000 litre Jet A1 tanks; all three vessels have the associated dispensing equipment. The GLAs manage the fuel system and its inspection and maintenance, order and own the bulk fuel, and issue it to the helicopter. For ILV Granuaile and THV Galatea, bulk fuel may be purchased from the Helicopter Operator and delivered by one of the trailer-bowsers. For NLV Pharos, it may be purchased from the Helicopter Operator’s fuel stock in the Oban static tank.

15.2.2. **THV Patricia** requires drummed fuel which is provided by the Helicopter Operator; TH owns, manages and issues it using a TH pump.

15.3 **Bulk Tanks.** NLB owns one 35000-litre static tank and dispensing system at Oban. CIL owns three static tanks and dispensing systems, a 28000-litre tank at Casteltownbere, a 28000-litre tank at Blacksod and a 5000 –litre tank at Rossaveel. The Helicopter Operator orders and owns the fuel in the bulk tanks, and is responsible for always keeping sufficient in them for impending NLB/CIL requirements. NLB/CIL personnel manage the fuel and issue it to their vessels and to the Helicopter Operator’s helicopter.

15.4 **Road Bowsers.** TH owns two 1,900-litre trailer-bowsers, one based at St Just and one at Swansea. TH personnel replenish them at St Just or other airports with fuel bought on the Helicopter Operator’s account, manage the fuel and drive the trailer-bowsers to appropriate locations and assist with issuing the fuel. The driver must be certified to carry DG by road.
15.5 **Procedures.** [To be provided by the Helicopter Operator, to include:]

- Bulking
- Settling
- Road bowser transport procedures
- Helicopter refuelling:
  - Smoking
  - Bonding
  - Fire and rescue equipment
- General procedures:
  - Sampling
  - Testing
  - Retention of samples
  - Hose and nozzle care
- Vessel procedures
- Bowser procedures
- Bulk tank procedures
- Drum stock procedures
- Spillages:
  - During Helicopter Refuelling
  - Actions – unbunded
  - Actions – bunded
  - Actions – during road transport
  - Skin Contamination by Aviation Fuel
- Maintenance of Equipment
16. **TRAINING**

16.1 To be inserted after contract