Administration Page

Document Control

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Document Revision

Version	Date	Changes
v1.0	19/05/2023	Initial Issue
V1.1	18/08/2023	Revisions post external consultation

CONTENTS

Abbreviations

AIS	Automatic Identification System
CAA	Civil Aviation Authority
CEO	Chief Executive Officer
GPS	Global Positioning System
HD	High Definition
HMCG	His Majesty's Coast Guard
HP	High Pressure
LNLS	Lamba Ness Launch Site
LP	Low Pressure
MCA	Maritime and Coastguard Agency
MHWS	Mean High Water Springs
MMSI	Maritime Mobile Service Identity
MMF	Mission Management Facility
MOB	Man Overboard
MRCC	Maritime Rescue Coordination Centre
POC	Point of Contact
PLB	Personal Locator Beacon
ROV	Remotely Operated Vehicle
SAIA	Space Accident Investigation Authority
Saxa	SaxaVord Spaceport
SAR	Search and Rescue
VHF	Very High Frequency

1 INTRODUCTION

This Maritime Emergency Response Plan is the contingency plan developed to deal with a maritime related emergency. It has been written in conjunction with the Maritime and Coastguard Agency (MCA) and UK Hydrographic Office, and forms part of the wider Saxa Emergency Response Plan laid out in ERP-001-SAXA Emergency Response Plan. There is a Marine Emergency Action Card (MEAC) at the end of this document. In the event of an emergency and if you have not read this document before or are not familiar with it, go straight to the MEAC and follow the steps within it.

Shetland Space Centre Ltd (trading as SaxaVord Spaceport) is the Duty Holder and the CEO is the Accountable Manager for the Spaceport and Range.

2 SITE LOCATION

SaxaVord Spaceport is located on the island of Unst, in the Shetland Islands, Scotland. SaxaVord Spaceport consists of 2 sites: the Mission Management Facility (MMF), which contains the Saxa Range and client Launch Control Centres, plus Support Facilities at Saxa Vord, and the Lamba Ness Launch Site (LNLS) which includes the Launch Vehicle/Payload Processing Facilities at Lamba Ness. The Range Control Centre acts as the coordinating hub for all range control services, including range safety. Saxa Range control services, operated by Saxa personnel, includes:

1. Co-ordinating arrangements for the activation and operation of the range;
2. Obtaining all necessary information for identifying the range and for co-ordinating its activation and operation;
3. Ensuring that notifications are issued for the protection of persons who might be put at risk by spacecraft or carrier aircraft within the range or in the vicinity of it;
4. Monitoring the range, and the spacecraft or carrier aircraft for which it is provided, to ascertain
    a. whether the restrictions or exclusions to which the range is subject are complied with;
    b. whether planned trajectories are adhered to;
5. Communicating any failure to comply with those restrictions or exclusions, or to adhere to those trajectories, for the purpose of enabling any appropriate actions to be taken in response;

The client Launch Control Centre is where the Launch Operator conducts their flight operations.

SaxaVord – Mission Management Facility Plus Support Facilities located at and close to:

60° 47’.871N, 0° 49’.462W.

Lamba Ness – Lamba Ness Launch Site and Launch Vehicle/Payload Processing Facilities occupies the entirety of the Lamba Ness peninsula, located at:

60° 49’.012N, 0° 46’.228W.

Figure 1 shows these locations in relation to each other.

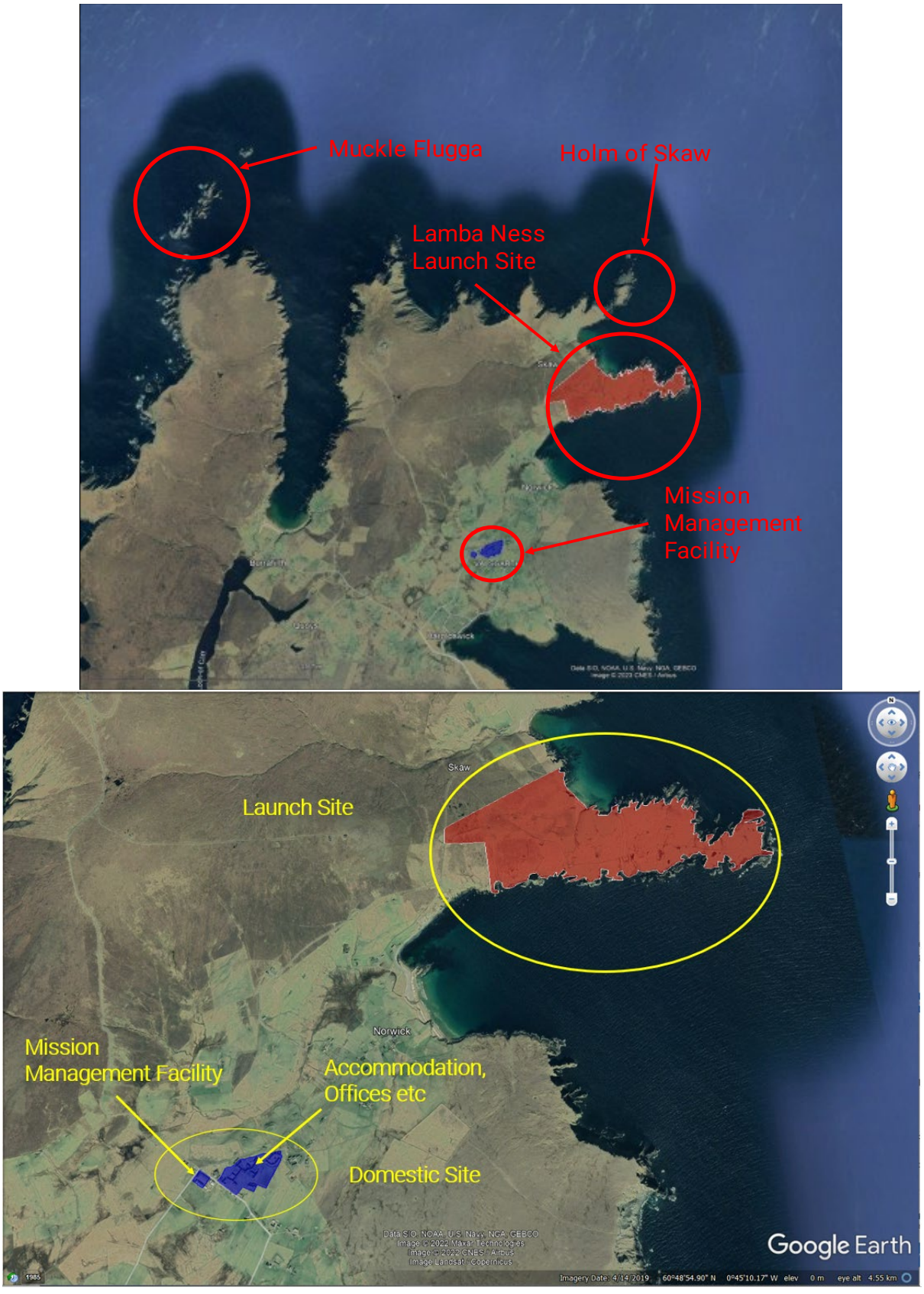

Figure 1 Lamba Ness Launch Site and Mission Management Facility in relation to each other.

3 TYPES OF LAUNCHES

SaxaVord Spaceport is a multi-user spaceport hosting vertical launch operators. Launches will be either sub-orbital or orbital in nature with launch azimuths between 330° and 030° True.

4 CONTACT INFORMATION

4.1 Onshore

Medical emergency

During working hours phone Unst Healthcare Centre is located at Baltasound and can be reached on 01957 711318. Figure 2 shows the location of the Healthcare Centre in relation to the Mission Management Facility, with the route between the two shown by the black line. The distance is 4.5 miles and takes approximately 10 minutes to travel by motorised vehicle. Figure 3 shows the location of Baltasound Airfield in relation to the medical centre, should airborne casualty evacuation be required.

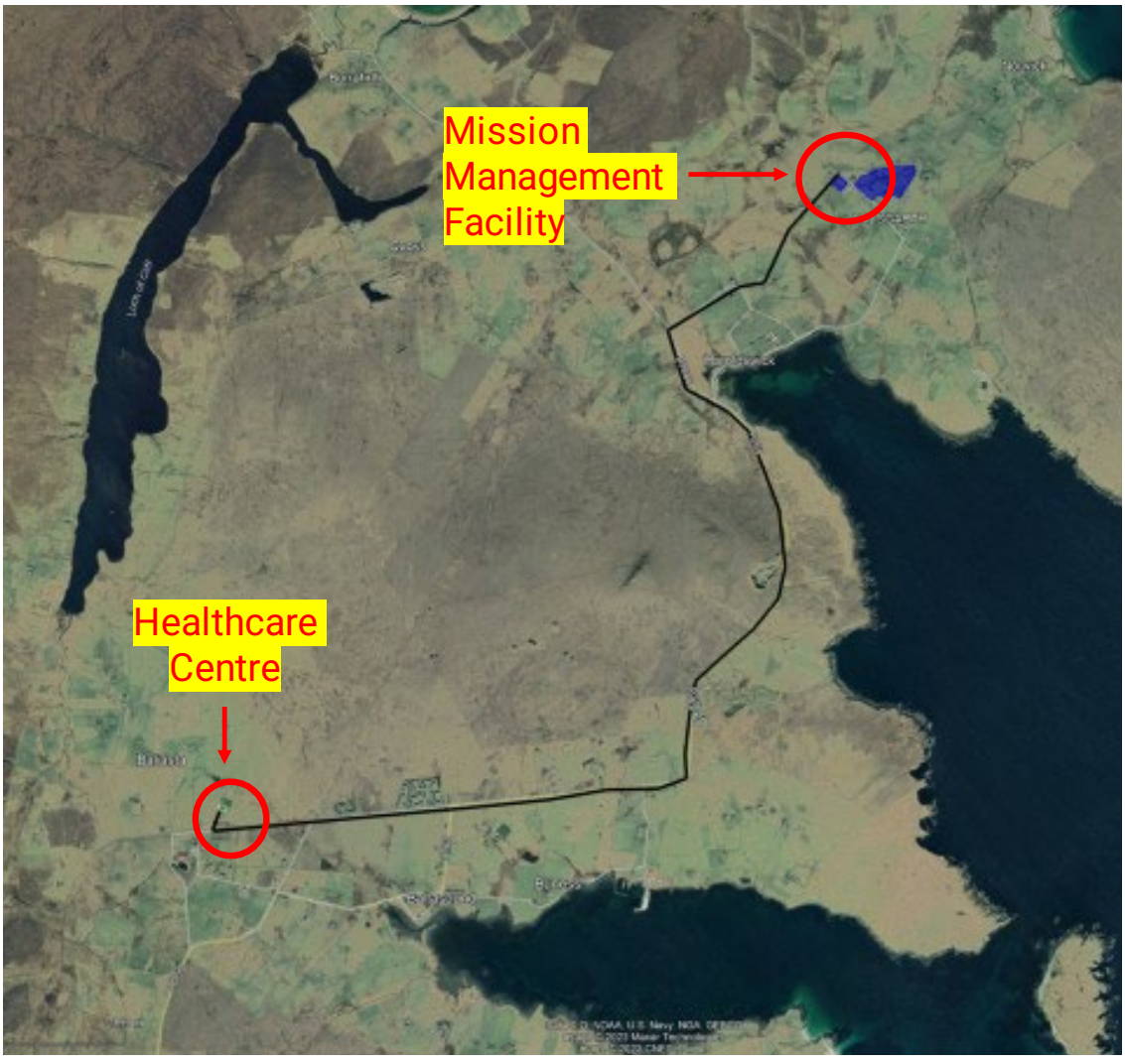

Figure 2 Unst Healthcare Centre in relation to the Mission Management Facility

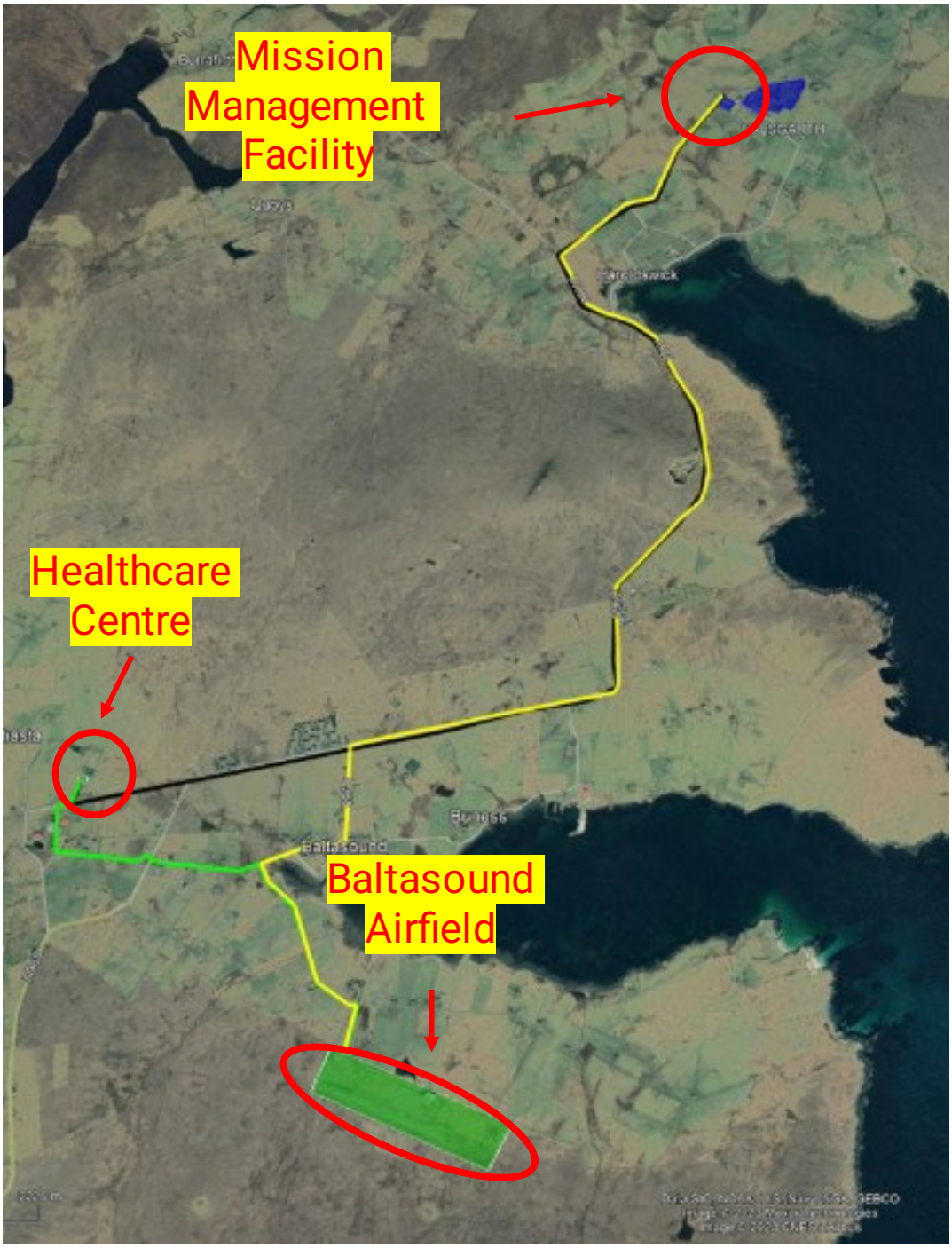

Figure 3 Healthcare Centre and Baltasound Airfield relative locations

Out of hours phone the Gilbert Bain Hospital, Lerwick on 01595 743000.

SaxaVord Spaceport

Spaceport Operations Manager – duncan.swainston@shetlandspacecentre.com

Range Operations Manager – james.slaughter@shetlandspacecentre.com

Range Operations Manager Phone Number - 01479 782042 ext 1010

Range Operations Team - rangeops@shetlandspacecentre.com

Range Operations Team Phone Number - 01479 782040 ext 1008

Back up phone number - 01957 711711

An organisation chart can be seen at Figure 4.

Marine Contractor (Boundary and Recovery Vessel)

The marine contractor responsible for the boundary and/or recovery vessel(s) will have a responsible person ashore, perhaps not located at any Saxa facility who can coordinate any activities necessary from their side.

Details can be added accordingly when appropriate contractor(s) have been appointed.

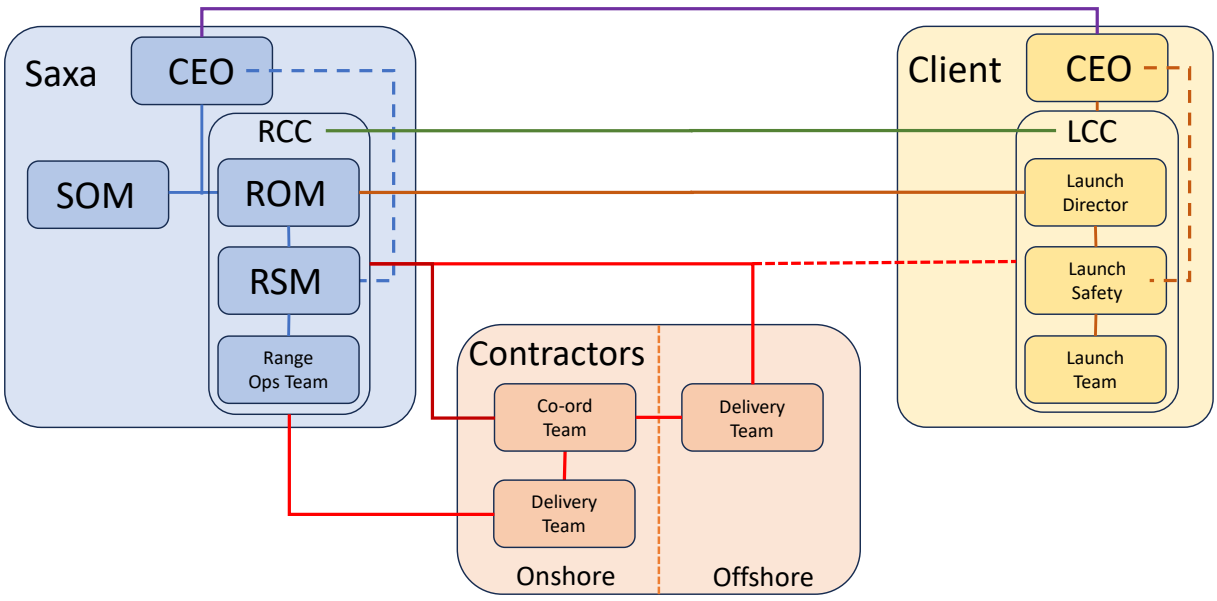

Figure 4 Organisation Chart

SOM: Spaceport Operations Manager
ROM: Range Operations Manager
RSM: Range Safety Manager

4.2 Offshore

Should there be a casualty onboard a vessel it is expected that first aid will be provided on board. This requirement fits under both the International Maritime Organisation (IMO) and the International Convention for the Safety of Life at Sea (SOLAS) and also, for UK based vessels, The Merchant Shipping Regulations.

Rated vessels (IMO and UK Merchant Shipping) are additionally required to follow the Standards of Training, Certification and Watchkeeping (STCW) coding for seafarers, in particular, Chapter 6, which deals with Emergencies and Medical Care.

The vessel should follow SOLAS procedure and activate the GMDSS and await a response. Saxa Range Operations will maintain a listening watch on VHF and aid and assist with communications (ie dial 999 and ask for the Coastguard) if appropriate and/or requested.

Coastguard

In an emergency, *dial **999** and ask for the Coastguard*

UKHO Contact information

Radio Navigation Warnings

Admiralty Way

Taunton

Somerset

TA12DN

Email: navwarnings@ukho.gov.uk

Telephone: +44 (0)1823 353448 (direct line)

Fax: +44 (0)1823 322352

Maritime Rescue Coordination Centre Lerwick

HM Coastguard
The Knab
Knab Road
Lerwick
Shetland
ZE1 0AX

01595 692976

SAR

“RESCUE 900” based at Sumburgh Airport.

RNLI lifeboats at Aith and Lerwick

Radio frequencies

Channel 16, 70 (digital selective calling channel) and Channel 67.

SaxaVord Spaceport, callsign "Saxa Range Control" and any Boundary Boat(s) or Recovery Vessel(s) used will maintain contact via Channel 16, mobile, and satellite phone links.

5 EMERGENCY RESPONSE STRUCTURE

The person with the role of emergency planning co-ordination at SaxaVord Spaceport is the Spaceport Operations Manager, who will be based in the Mission Management Facility for the duration of the launch. That said, nothing in this plan shall relieve any person or organisation from any statutory obligation or responsibility.

In the event of an incident or emergency it is the responsibility of the Spaceport Operations Manager, or their nominated deputy, to initiate procedures set out in the Emergency Orders. The Emergency Orders form part of the spaceport manual.

The Range Operations Manager is responsible for coordinating emergency planning for incidents or emergencies that take place within the 'Range'[1] during spaceflight activities. Should an emergency on the seaward side of the MHWS of the Range take place, the Range Operations Manager (or their nominated deputy) will alert HM Coastguard.

HM Coastguard has responsibility for coordination of any required maritime SAR response.

It is essential that, at the earliest possible stage, in order to control access to a potentially dangerous incident location, that consideration is given to applications for both air and, if necessary, maritime exclusion zones around and above SaxaVord Spaceport. This will ensure the safety and security of the site, particularly during the initial response phase when there is likely to be considerable activity by the responding services and other agencies.

6 BOUNDARY BOAT AND RECOVERY VESSEL INFORMATION

In general, Saxa will contract a vessel hire on a launch-by-launch basis to undertake boundary and/or recovery duties. It could also be that the Launch Operator wishes to contract directly with the maritime operator: Saxa will work closely with the Launch Operator to ensure the proposed operation and requirements are fully understood. The MMF will coordinate all communications between vessels in the field during range clearance and recovery operations.

Vessel operators will be required to submit details of their on-board emergency procedures prior to launch operations. In the event of an emergency the vessel master will be responsible for informing the MMF, who will then contact the coastguard and inform any other vessels or aircraft in the field. The vessel will be responsible for initial response to the emergency and have stated procedures for, amongst others:

- Man overboard
- Fire
- Medical Emergency and MEDIVAC

[1] ""Range" means a zone which (or two or more zones each of which) is subject to restrictions, exclusions or warnings." 5 (1) Space Industry Act 2018.

- Oil/Fuel Spill at sea (also perhaps including RP-1 spill at sea)
- Main Engine, electrical power or Steering Failure
- Abandoning ship

It is also expected that any vessel undertaking these duties will, as a minimum, be equipped with the following:

- VHF radio. Redundancy communications systems may also be required, such as satellite phone. VHF Channels monitored: 16, 67 and 70.
- Standard life saving equipment, MOB recovery equipment and firefighting equipment such as a deck wash hose or fire extinguishers.
- Medical Equipment – Cat C first aid kit (as required) plus standard workplace first aid kit and eyewash station
- Maritime radar system
- AIS transponder

Additional information on crew PLBs etc will be provided on a launch-by-launch basis.

6.1 Range Monitoring

SaxaVord Spaceport has the following equipment at the launch site to monitor the Space Launch Hazard Area:

- Maritime radar – with detection performance ranging from 6nm for small vessels to >40nm for large vessels
- Optical and thermal primary camera – detection ranges from 10 to 25nm
- AIS and ADS-B with ranges out to approx. 50nm or 250 km for aircraft

An application to enable visualisation of tracks and relevant imagery will be used within the Range Control Centre to allow manual observance of activity and alerts to vessels of interest.

Boundary boats must have radar and AIS on board. Communication will primarily be via VHF radio. A satellite phone will also be available for additional ship to shore communications: details TBD for each launch.4.2

6.2 Hazard Markings and/or Lights on the Coast

Nil

6.3 Pollutants or Environmental Hazards

Will be notified on a launch-by-launch basis. The marine contractor will be notified in advance if there are substances hazardous to health on-board recovered rocket components, especially if they are to recover debris.

Most launch vehicles will be propelled by a kerosene fuel (RP-1) with a liquid oxidiser (LOx) but some may contain more noxious substances and so due regard must be taken in assessing downwind safety distances for any craft at sea

Additionally, the marine contractor will be briefed on maintaining appropriate safety distances offshore as a Launch Vehicle may contain noxious substances. These measures will ensure that appropriate PPE is specified and available.

6.4 Nearest MRCC and SAR Resources

Maritime Rescue Coordination Centre Lerwick, see section 4.2 above.

7 PROCEDURE IN EVENT OF LAUNCH/ROCKET FAILURE

In the event of a launch or rocket failure which effects the marine domain the operator must follow the following procedures:

- If debris falls within the planned Splashdown Area or Space Launch Hazard Area, a RNW will have already been issued and vessels do not need to be informed.
- If floating debris is still present in the maritime environment after the completion of any Launch Activity and cessation of supporting navigation warnings, issue an updated temporary RNW and HMCG must be informed within 30-minutes. Information provided should include size, material, mass, position and time of floating debris. Examples would include failed or aborted recovery of vehicles or debris.
- If debris falls outside of the planned Splashdown Area or Space Launch Hazard Area, issue an updated temporary RNW and HMCG must be informed within 30-minutes. Information provided should include size, material, and mass of likely floating debris; the estimated position and time and if recovery is expected.

Any reports of floating debris or other marine hazards made directly to the launch operator by vessels, aircraft or any other means, should be forwarded to UKHO to issue an official RNW and HMCG as soon as practicable after receiving the report.

8 SHORESIDE COMMUNICATIONS RESPONSIBILITY

The task of dealing with media pressure onshore at the scene of any major incident is primarily the responsibility of the Police once they are on-scene. Media personnel may already be on-site to cover a launch when an incident occurs or could attempt to reach SaxaVord Spaceport very quickly, as they will often have heard of the incident at the same time as the emergency services. In the case of a major incident it is likely to be prudent to hand over control of access to the Spaceport site to the Police as rapidly as possible as significant numbers of press arriving at an ongoing incident could jeopardise safety and control of the situation. For Search and Rescue Operations at sea, the MCA will lead the response.

It has been agreed that in the absence of the Police Public Communications Advisor, particularly during the initial stages of a major incident, advantage will be taken of the professional media personnel from Shetland Islands Council and Shetland Health Board to assist with all media related matters, in particular, the organisation and management of media briefings.

However, the police have the co-ordinating role in managing media response and any media release should only be made in liaison with Police Service of Scotland on call or designated media representative who can be contacted through the Area Control Room Inverness.

- Saxa media POC: Paul Riddell paul.riddell@shetlandspacecentre.com
- Shetland Islands Council media POC – Carol Anderson. carol.anderson@shetland.gov.uk
- Shetland Health Board POC – Amy Gallivan. amy.gallivan2@nhs.scot
- Police media POC – NewsDesk@scotland.police.uk
- MCA – public.relations@mcga.gov.uk. Outside Mon Fri 0900-1700, bank holidays and weekends, media enquiries only should have #urgent in the subject title

8.1 Initial Holding Statement

This initial holding statement will be issued automatically by the Duty Officer, Police Service of Scotland Area Control Room, once it is clear that an incident has occurred at SaxaVord Spaceport. The statement will be along the following lines:

"An incident has occurred at (time and date) at SaxaVord Spaceport which is operated by Shetland Space Centre Limited. Emergency services are currently at the scene and an update will be given when further information becomes available."

The purpose of this initial holding statement is to provide time to create a more detailed and considered statement with the engagement of a number of relevant parties, most critically: Management and Media Liaison staff from Shetland Space Centre, representatives from the CAA Regulator and potentially the SAIA and UK Space Agency.

MARINE EMERGENCY ACTION CARD

In the event of a casualty to shipping the following actions are to be taken in this Marine Emergency Action Card:

No.	Saxa Control Actions (Range Control)	Comment / Tick
1.	Contact vessel to gather information	
	a. Number of personnel on board	
	b. Type of cargo or any hazardous	
	c. Any personnel casualties	
	d. Nature of vessel casualty, damage, fire, flooding, stability	
	e. Any pollution or danger of pollution	
	f. What assistance required.	
2.	Contact Coastguard who will instigate Search and Rescue response	
3.	Contact other Emergency services as necessary	
4.	Contact Spaceport Operations Manager, Range Operations Manager	
5.	Broadcast navigational warnings to all ships in area, advising of the incident	
6.	Ensure other vessels are not put at risk	
7.	Record events in the log	
8.	Obtain weather forecast and tidal information for next 24hrs	
9.	Brief Ops Director and Accountable Manager	
Actions for Spaceport Operations Manager and Range Safety Manager		
A	Provide information to the Coastguard in Search and Rescue	
B	Act as coordination centre for other emergency services (if required)	
C	Prepare media response (as instructed by Accountable Manager)	
D	Obligated to report to the Marine Accident Investigation Board (MAIB), this is a separate procedure	
E	Next of Kin: Communications, Travel and Accommodation (Hospital)	
F	Collate witness statements, gather evidence, draft Incident Report	
G	Review Emergency Response performance	