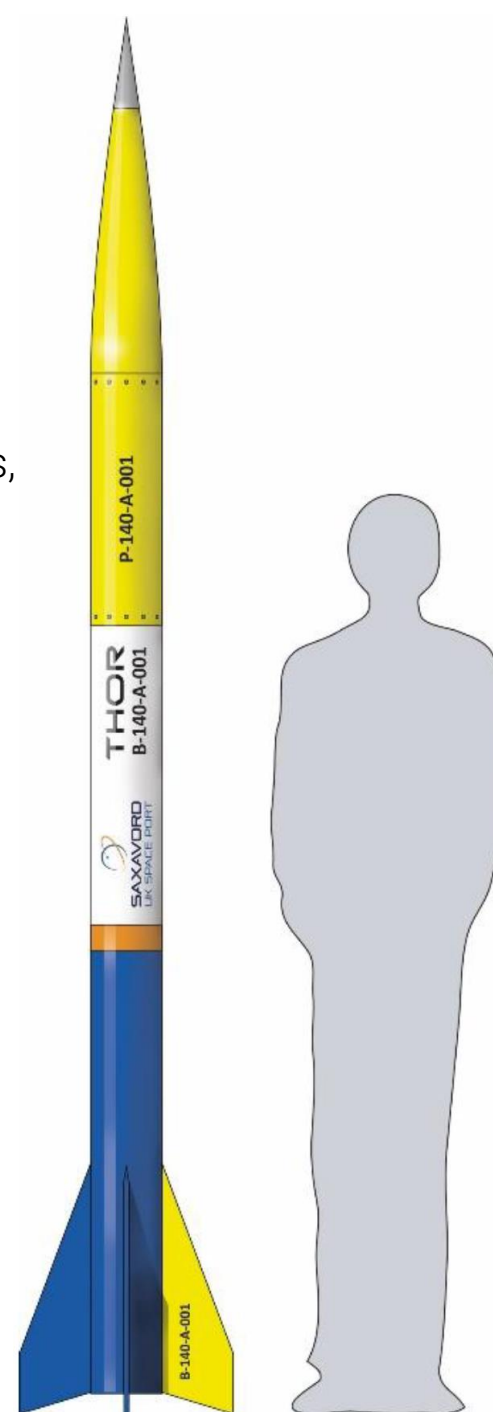


Exercise THOR'S ROCKET

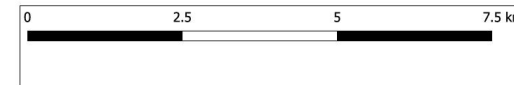
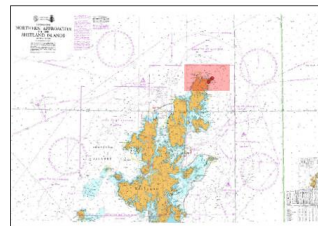
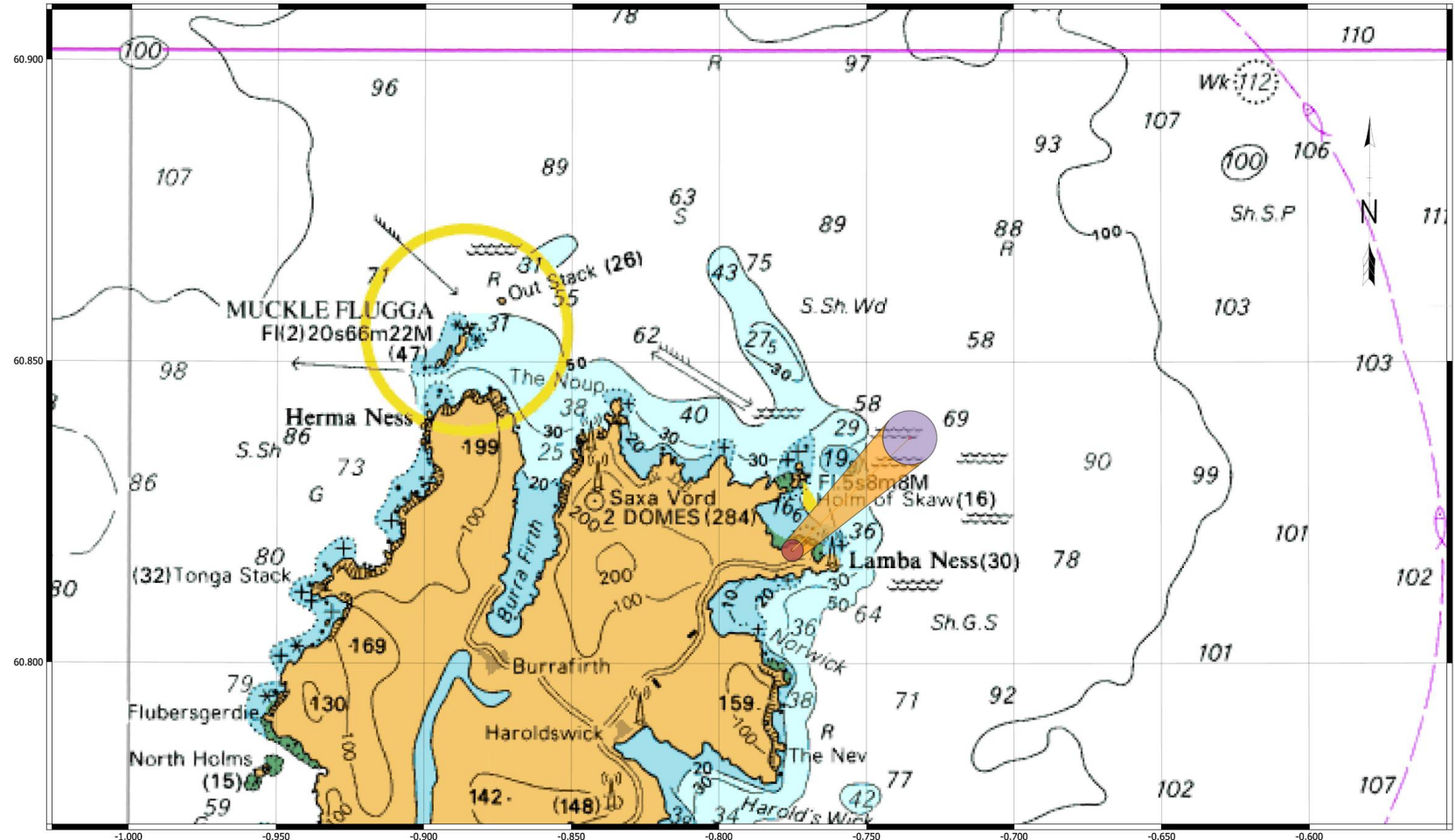
Thor Rocket

- Composite construction with lightweight fibreglass airframe, fins, and nose cone.
- Small number of aluminium components (nose tip, fittings and retaining hardware)
- Reloadable solid fuel rocket motor (APCP Propellant)
- Payload bay filled with foam to ensure rocket floats for recovery
- 2.7m (9ft) tall and 140mm (5.5") in diameter
- Expected launch mass in the region of 15kg and an expected recovery mass of 11kg.
- Single-event parachute recovery system
- <10,240NS Total Impulse = CAA 'Small Rocket' Classification



The Launch

- Proposed launch trajectory of 45°
- Launched at a 70° to 80° elevation
- Apogee in the region of 3.5km (12,000ft+)
- Downrange distance of at least 3km (10,000ft) for sea recovery.



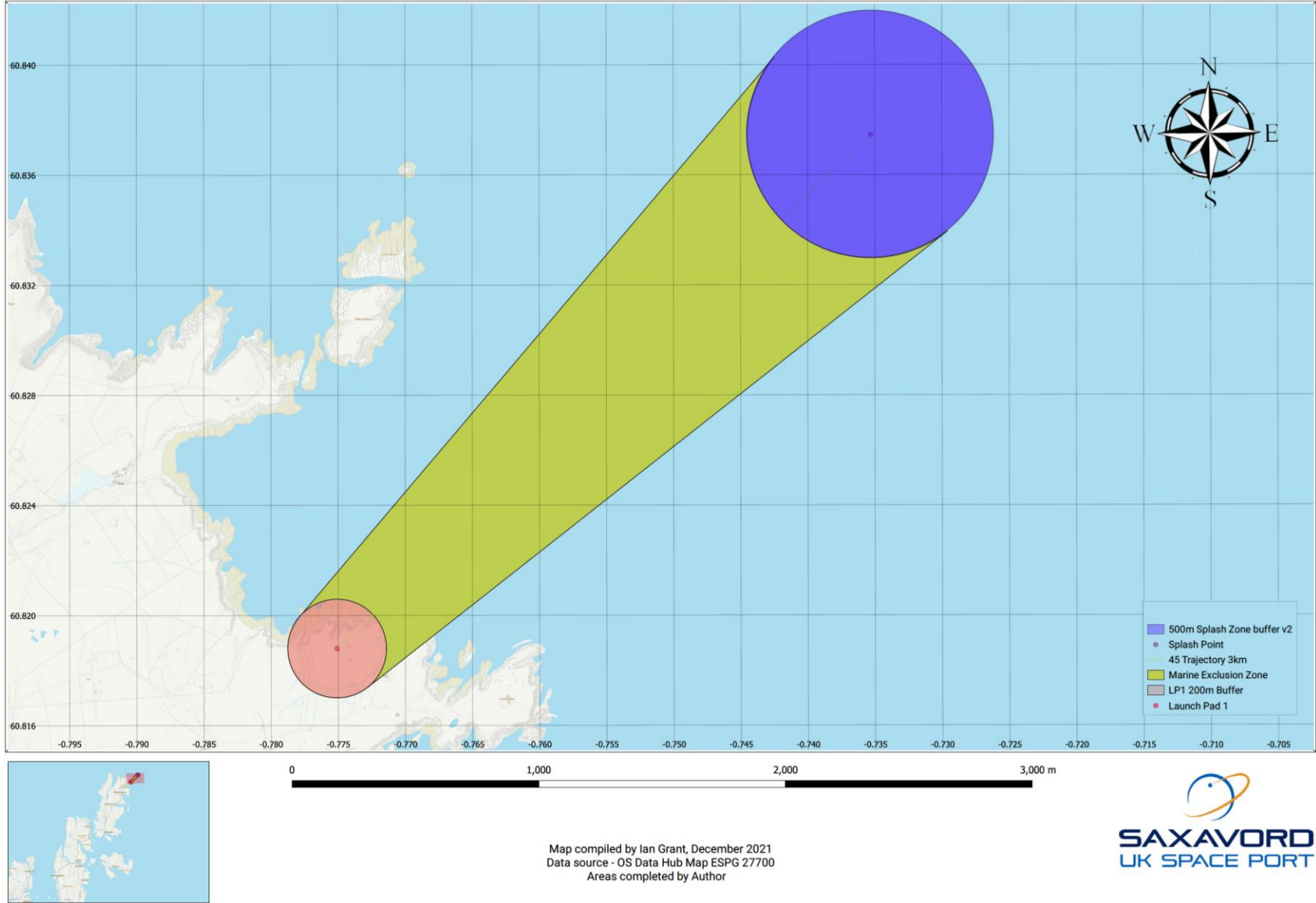
Map compiled by Ian Grant, December 2021
Data source - Admiralty Chart 1233 - Northern Approaches to the Shetland Islands
Areas completed by Author



SAXAVORD
UK SPACE PORT

Hazard Areas

- Along the line of trajectory
- 200m radius centered on Launch Pad
- 500m radius centered on splash zone



What will we test?

- The notifications process.
- Agreements with Relevant Authorities.
- The process of activation and deactivation of the Range.
- The Outdoor Access Plan (OAP).
- Our ability to monitor Exclusions Zones.
- Our ability to handle and store propellants.
- Our ability to handle and store rocket motors.
- Our ability to track and recover items from the sea

How will we do this?

- **Ph 1 – Ground Exercise** SAXA will test the notifications process and OAP in a ‘dry’ setting, ie without the launch of a rocket. **Likely L – 1 month**
- **Ph 2 – Ground and Maritime Exercise** Second ground exercise (also dry) and test the Agreements with Relevant (maritime) Authorities. Operations Team to deploy to Unst for this phase. **Likely L – 1 week**
- **Ph 3 – Live firing of THOR Rocket** This phase will be the culmination of the training exercise and include lessons identified from Phases 1 and 2 as well as the testing of Notices to Airmen (NOTAMs) procedures with the CAA and NATS. In addition, the THOR Rocket will be recovered from the sea and returned to Saxa Vord. **Likely April 2022**
- **Ph 4 – Debrief and Recover** Upon completion of the launch and recovery of the THOR Rocket, the Operations Team will conduct a hot debrief with all stakeholders.