



Maritime &  
Coastguard  
Agency



UK Hydrographic  
Office

# UK Civil Hydrography Programme

Hydrographic Instruction 1709

Version 3

Duncansby Head to Pentland Skerries

Addition to MCA Hydrographic Survey Services in UK and European Waters v 2018

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## Document Versions

Version Number	Date of Issue	Comment
1	27/08/2020	Issued to MCA
2	08/09/2020	Minor amendments requested by MCA
3	22/09/2020	Removal of polygon centroid from survey area coordinates table

## Abbreviated Terms

Symbol	Meaning
BA	British Admiralty
CD	Chart Datum
CORS	Continuously Operating Reference stations
ENC	Electronic Navigational Chart
ETRS	European Terrestrial Reference System
GNSS	Global Navigation Satellite System
HI	Hydrographic Instruction
IHO	International Hydrographic Organisation
MCA	Maritime & Coastguard Agency
MSL	Mean Sea Level
MLWS	Mean Low-Water Springs
OD	Ordnance Datum
RoS	Report of Survey
SD	Sounding Datum
UKHO	United Kingdom Hydrographic Office
VORF	Vertical Offshore Reference Frame
WGS	World Geodetic System

## 1. Scope

This document details the project specific requirements for conducting HI1709 – Duncansby Head to Pentland Skerries. It is authored by the UK Hydrographic Office (UKHO), on behalf of the Maritime & Coastguard Agency (MCA), for issue to the appropriate contractor. The area is described in the coordinates and diagrams in section 4.

## 2. Related Standards

The following publications are to be adhered to in the conduct of this HI:

- MCA UK Civil Hydrography Programme Survey Specification v 2018

In addition, the following documents should also be referenced and followed where applicable:

- Standards for Hydrographic Surveys. Special Publication No. 44, 5th Edition, February 2008. International Hydrographic Organisation (Order 1A).

## 3. Government Furnished Data

The following Government furnished data will be provided to support this HI:

- All known wrecks within the limits of each survey block.
- BA Charts for the area in GeoTiff format.
- S57 ENC data for the area.
- VORF Model outputs for the area in ASCII format.
- NP52 – Pilot: North Coast of Scotland

Note: Government furnished data remains the property of the UKHO. As such, the data must be deleted from all storage systems once the contract has been completed. All government furnished data is Crown Copyright and must not be duplicated or distributed without the permission of the MCA or UKHO. Government Furnished Data must not be used for navigation.

## 4. Area to be Surveyed

The contractor shall survey the area stated in Table 1 in line with the UK Civil Hydrography Programme Survey Specification v 2018. All co-ordinates are quoted in ETRS89 in degrees decimal minutes.

Consideration should always be given to extending a survey area if a particular seabed feature such as the edge of a critical bank is not adequately covered by the prescribed areas. If the contractor feels an area should be extended in this way, please consult the MCA as soon as possible.

As stated in the specification, where significant differences to depths for a given area are found, particularly to the controlling depth, a Hydrographic Note (H102) should be immediately sent

to the UKHO notifying them of the critical depth changes and their positions, and copied to the MCA Hydrography & Meteorology and Receiver of Wreck Teams.

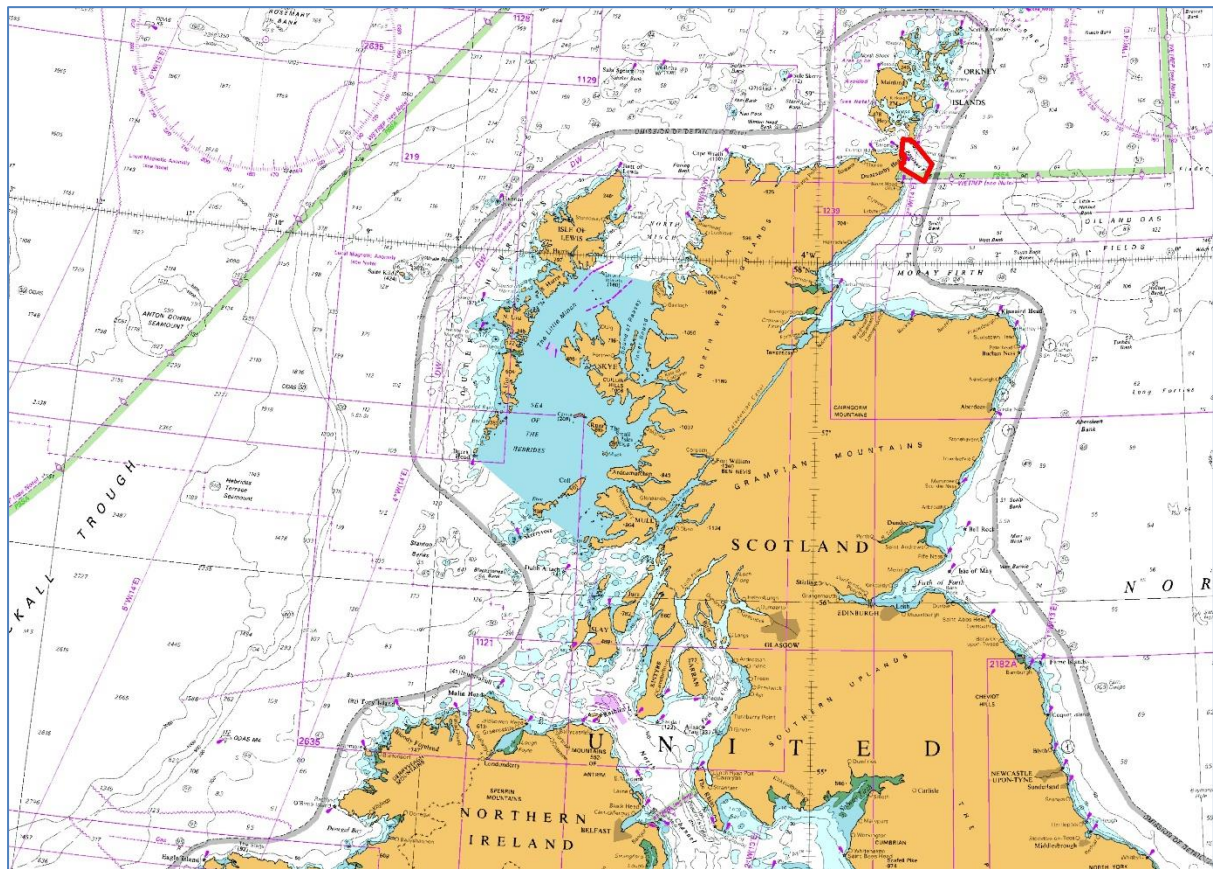


Figure 1 - Overview of Survey Area



HI1709 - Coordinates – 335 km <sup>2</sup>		
Point	Latitude	Longitude
01	58°44.1039 N	003°03.2079 W
02	58°43.8020 N	002°57.7393 W
03	58°43.3366 N	002°57.7768 W
04	58°43.0665 N	002°56.7005 W
05	58°43.0547 N	002°55.6388 W
06	58°35.2986 N	002°43.5514 W
07	58°29.1815 N	002°48.7750 W
08	58°33.9986 N	003°04.3724 W
09	58°35.6032 N	003°04.4691 W
10	58°35.9034 N	003°02.7735 W
11	58°38.6025 N	003°02.2930 W
12	58°38.6455 N	003°04.4330 W
13	58°44.1039 N	003°03.2079 W

Table 1 – Survey Area Coordinates

## 5. Survey Control & Positioning

Positioning System:

In line with specification.

Datum: ETRS89

Spheroid: GRS '80

Projection: UTM Grid Zone 30 North (Central Meridian 3° West)

All positioning data (including bathymetry positioning) and reports rendered as part of this survey shall be quoted in terms of the ETRS89 reference frame.

All rendered positions within RoS shall be quoted as geographical co-ordinates (i.e. in terms of Lat. / Long) as degrees and decimal minutes.

## 6. Tides and Tidal Stream Observations

### 6.1 Confirmation of GNSS System and Application of VORF Model

Not required.

### 6.2 Tidal Data



Not required.

### 6.3 Tidal Stream Data

Tidal stream observations are required in line with the specification at or near:

- a)  $58^{\circ} 44' \cdot 175 \text{ N}$ ,  $3^{\circ} 01' \cdot 340 \text{ W}$
- b)  $58^{\circ} 42' \cdot 000 \text{ N}$ ,  $3^{\circ} 00' \cdot 000 \text{ W}$

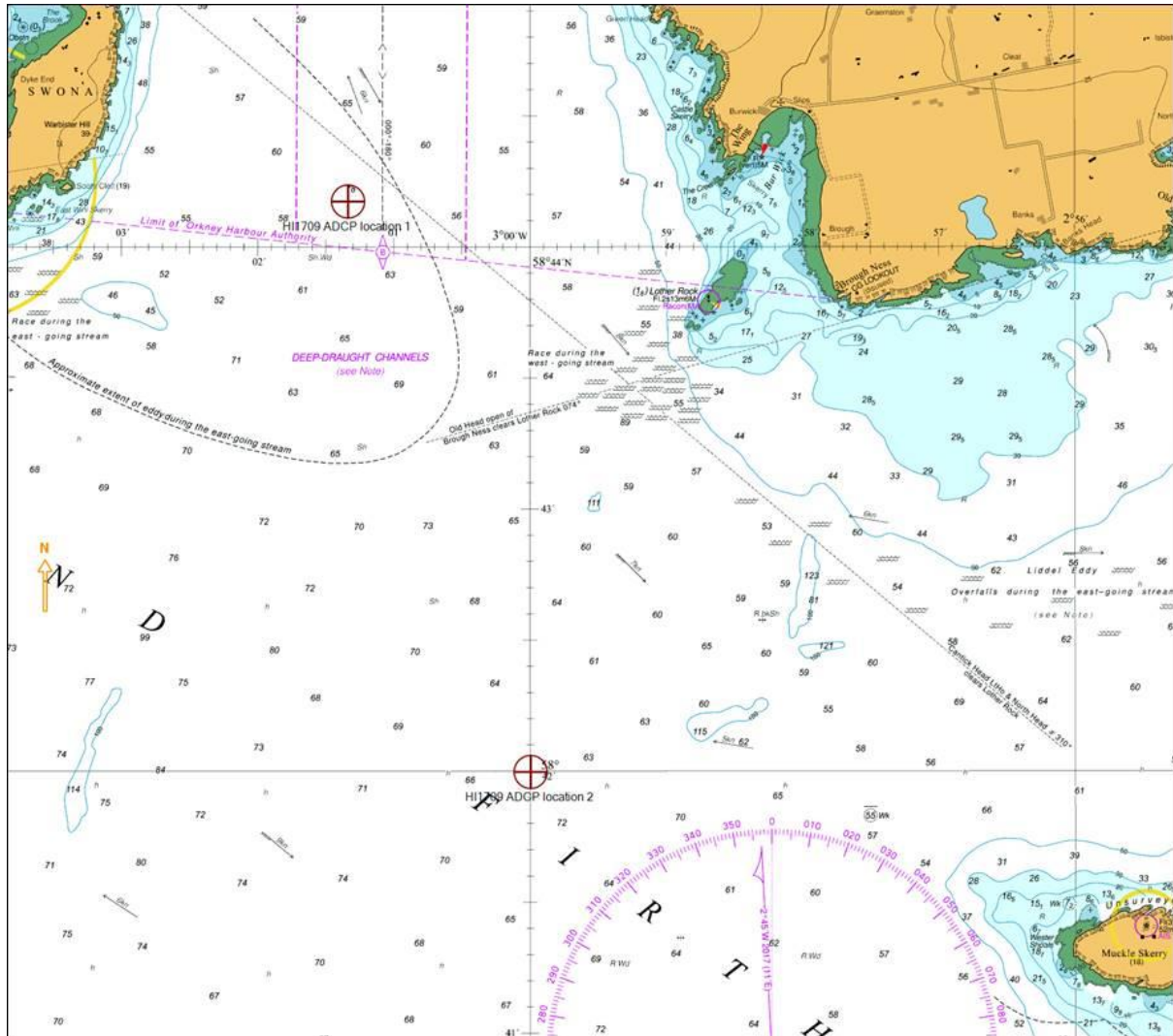


Figure 3 – Approximate ADCP locations



## 7. Bathymetry

Full seafloor coverage shall be achieved within the defined polygon into the 5m CD contour as found.

## 8. Wreck Database for Area

The UKHO Wreck/Obstruction Database contains the following number of wrecks/obstructions in the survey areas:

**Total: 25**                      **Live: 19**                      **Lift: 0**                      **Dead: 6**

For details see

- [HI\\_1709\\_CHP\\_ListOfWrecks.csv](#)
- [HI\\_1709\\_CHP\\_Duncansby\\_Head\\_to\\_Pentland\\_Skerries.html](#)

## 9. Seabed Sampling and Classification

### 9.1 Seabed Classification

Required in line with specification.

### 9.2 Seabed Sampling

Required in line with specification.

## 10. Sailing Directions

10.1 The appropriate Sailing Directions (Pilot) has been supplied in PDF format and should be checked in the field with appropriate amendments rendered. Particular attention should be paid to any recommended approach routes and anchorages within or adjacent to the survey area.

The following specific views are required.

No	Description	From Direction	Position of Stated Feature (Degrees-Minutes decimal minutes)	Type of view (see note below)	NP Page (NP Publication, Paragraph number)
1	Muckle Skerry Lighthouse	W and from S	58°41'·41N 2°55'·48W	Portrait/Close-up	NP52, para 3.125
2	Duncansby Head Light	NE	58°38'·64N 3°01'·52W	Portrait/Close-up	NP52, para 3.125
3	CG Lookout (disused) on Brough Ness	S	58°43'·82N 2°57'·60W	Portrait/Close-up	NP52, para 3.125
4	The Stacks of Duncansby	E	58°37'·92N 3°02'·10W	Portrait/Close-up	NP52, para 4.18
5	Noss Head Light	E	58°28'·76N 3°03'·09W	Portrait/Close-up	NP52, para 4.17
6	Lother Rock (at low water)	S	58°43'·79N 2°58'·69W	Portrait/Close-up	NP52, para 3.129

**Note** - Type of view refers to: Panoramic views, Aerial Oblique views, Pilotage views, Portrait views and Close-up views. Please refer to P100 (chapter 4.37) for view descriptions.

10.2 Confirm whether the following Principal marks, Landmarks and Useful marks listed in NP52 remain as such:

- a) Freswick House (58°35'·29N 3°04'·34W) (para 4.19)
- b) Water tower (58°33'·25N 3°06'·58W) (para 4.19)
- c) John o'Groats Hotel (58°38'·60N 3°04'·25W) (para 3.135)

10.3 If appropriate, propose new Useful marks and/or Landmarks to support port entry and coastal passages. All proposals should be accompanied by full details including geographical position and photographs taken from seaward.

## 11. Magnetic Anomalies, Eddies and Over-falls

### 11.1 Magnetic Anomalies

There are no charted magnetic anomalies in the survey area. Any such anomalies found should be reported to MCA and UKHO at the earliest opportunity to enable further investigation.

### 11.2 Eddies and Over-falls

Positions of all such charted features are to be checked, and any significant differences reported in line with the specification.

## 12. Deliverables

The deliverables and RoS for this survey should not be split into multiple parts. One set of deliverables is requested.

Data should be rendered to the UKHO upon completion of processing and reporting in line with specifications. Please submit all data and reports in digital form on suitable electronic media to the address below:

**Bathymetric Data Management (Survey Receipt)**

UK Hydrographic Office  
Admiralty Way  
Taunton  
TA1 2DN

Please note that no named individual should be addressed.