UK management of NAVTEX capacity

Submitted by United Kingdom

SUMMARY

Executive Summary: The UK NAVTEX service has often been over capacity resulting in UK Coastal and NAVAREA I warnings being excluded from broadcasts. UK Coastal Warnings have been reformatted to use shipping forecast areas in lieu of a geographical general area in the warning preamble. This has resulted in a significant saving.

Action to be taken: Paragraph 4

Related documents: None

1. Background

1.1. The UK NAVTEX service has use of four NAVTEX stations each with its own transmitter identification character (B1). Each transmitter identification character is allocated a maximum transmission time of 10 minutes every four hours. Each time slot contains navigation warnings and weather forecasts.

1.2. The UK National Coordinator (UKHO) has been receiving a higher volume of viable information concerning potential risks to navigation than could be consistently transmitted over NAVTEX using the existing methods of message format. The quantity of viable information is forecast to continue to trend upwards. This is mainly due to increased commercial activity in the blue economy, including space operations and offshore renewables.

1.3. Due to the density of NAVTEX services, establishing new stations or amending existing service areas was not considered a practical or efficient solution to reduce capacity issues.

1.4. His Majesties Coastguard (HMCG) act as the UK NAVTEX coordinator. When the 10-minute timeslot is exceeded, the NAVTEX coordinator contacts the National coordinator to determine how the warnings should be prioritised.

2. Data

2.1. Due to the age of our NAVTEX systems and the available software, it is a significant challenge to obtain accurate data.

2.2. Over multiple years we tracked the average total broadcast time per station and per timeslot. This showed that we regularly had more data than could be broadcast withing the 10-minute transmission time.

2.3. The National Coordinator tracked warnings that had to be dropped from the broadcast. In Feb 2022, the National coordinator had to remove in excess of 200 warning repetitions from broadcast. This was due inclement weather causing an increase in meteorological warnings and lengthier forecasts and resultant navigational warnings.

2.4. We calculated our average warning length to be approximately 144 characters (not including shift symbol characters). We identified that reducing the character counts of the warnings would increase the quantity of warnings that could be transmitted.

2.5. The UKHO reviewed message content and subjects to identify patterns or potential savings.

3. Actions

3.1. This additional load on the NAVTEX system is carefully managed and clear procedures are in place for prioritisation to ensure mariners remain in receipt of critical and important warnings.

3.2. The NAVTEX System Steering Group was set up with stakeholders from UKHO, Met Office, HMCG and Maritime and Coastguard Agency. The steering group had multiple SME's on NAVTEX infrastructure, Data and MSI operations.

3.3. As part of the work by the steering group, the UKHO reviewed warning content identifying that the largest causer of navigational warnings was as a result of AtoN failures on offshore installations (about 17%). Working collaboratively with the MCA & the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) we encouraged offshore operators to improve the timeliness of repairs.

3.4. In December 2023 UK Coastal Warnings were reformatted to use the defined UK Shipping Forecast Areas (Annex A) in lieu of the previously used geographically named general areas within the preamble of a warning. This change was made in line with the guidance provided in the Joint IHO/IMO/WMO Manual on Maritime Safety Information section 6 (Message Format of Navigational Warnings) which states "*If appropriate, the established meteorological forecast areas as defined in WMO publication No.9 Volume D and also published in various nautical publications may be used*.".

3.5. Further reductions have been made by refining the use of locality, reducing punction and reviewing preformatted warning structure. See Annex B: Warning Examples and Savings.

3.6. Our standardised warnings in two designated military practice areas were also reformatted and negative reporting was removed.

3.7. Mariners were forewarned of the changes in the Weekly Admiralty Notices to Mariners and Admiralty List of Radio Signals Volume 3(1) (NP283(1)) updates, see Annex C.

4. Conclusions

4.1. The total data broadcast from navigational warnings issued in 2023 has been compared to 2024.

- We are projected to make an average saving of 35.4%.
- Warnings excluded from broadcasts has reduced by 54.2%.

4.2. The changes have streamlined to process for watchkeepers, which has reduced formatting errors in issued navigational warnings. Having standardised areas also supports the introduction of S-124.

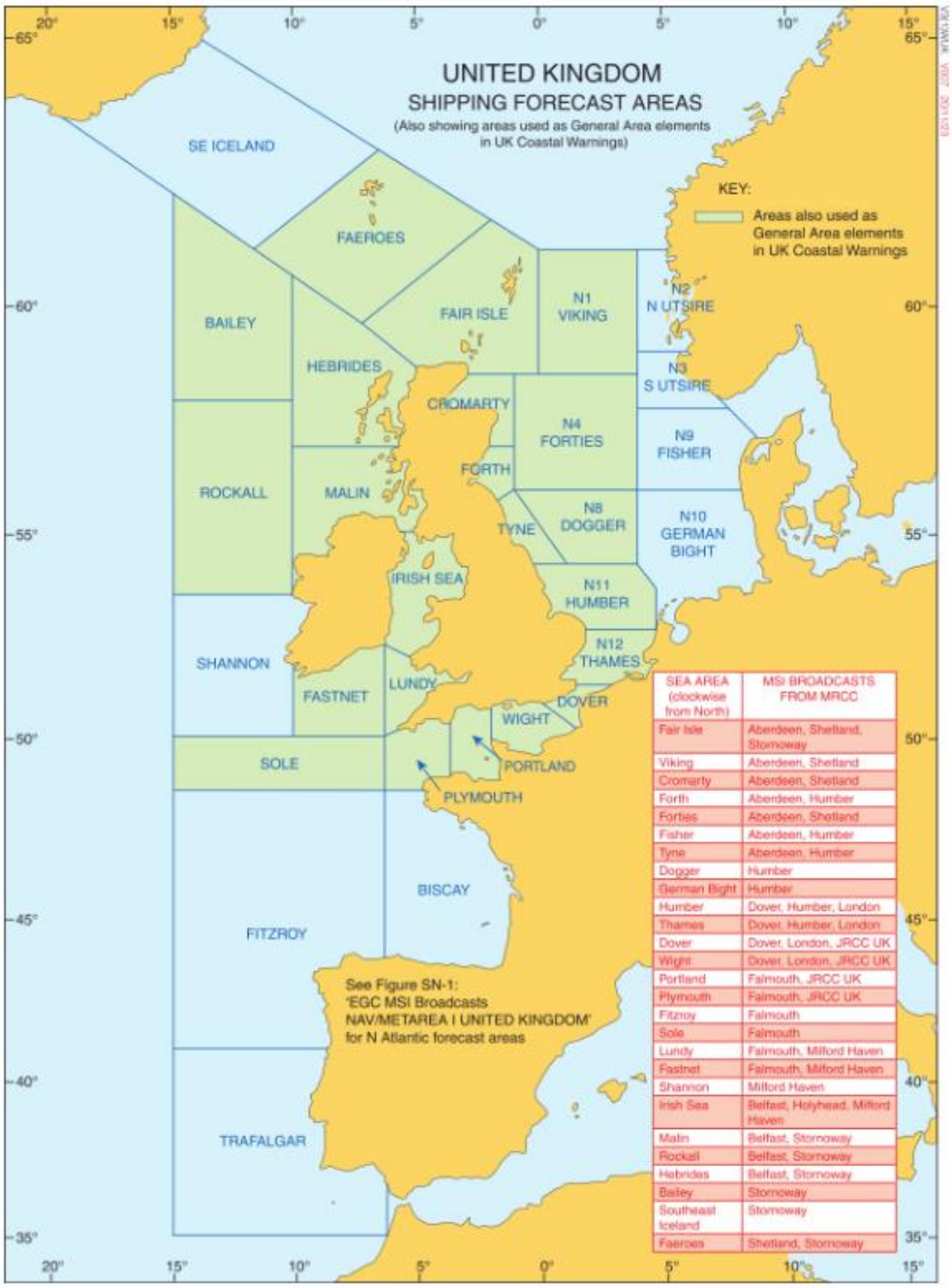
4.3. No negative feedback has been received from mariners.

5. Recommendations

5.1. Invite the sub-committee to note the paper**.**

5.2. Invite the sub-committee to request Document Review Working Group to consider the impacts of NAVTEX capacity when reviewing MSI documentation.

Annex A: UK Shipping Forecast Areas



Annex B: UK Coastal Warning Examples and Savings

ID	Warning Text	Chara	Diff	Saving %
WZ 613/23	ENGLAND, EAST COAST. Cromer Knoll Southwards. Dudgeon buoy, 53-16.6N 001-16.9E, Racon inoperative.	99	40	40.4%
WZ 002/24	HUMBER. DUDGEON BUOY 53-16.6N 001-16.9E, RACON INOPERATIVE.	59		

ID	Warning Text	Chara	Diff	Saving %
WZ 969/23	ENGLAND, EAST COAST. Approaches to the River Humber. 1. Outer Sand buoy, 53-36.4N 000-29.4E, AIS, reduced power. 2. Cancel WZ 814 (GA91).	137	46	33.6%
WZ 014/24	HUMBER. 1. OUTER SAND BUOY 53-36.4N 000-29.4E, AIS, REDUCED POWER. 2. CANCEL WZ 969 (GA82).	91		

ID	Warning Text	Chara	Diff	Saving %
WZ 1002/23	IRISH SEA. Lambay Deep Eastwards. 1. M2 buoy, 53-28.0N 005-25.0W, unlit. 2. Cancel WZ 862 (OA70).	97	23	23.7%
WZ 051/24	IRISH SEA. 1. M2 BUOY 53-28.0N 005-25.0W, UNLIT. 2. CANCEL WZ 1002 (OA35).	74		

Savings (KB)				
Month	2023	2024	2024 Forecast	Difference %
January	265.524	173.0365		-34.8
February	536.578	377.9055		-29.6
March	873.775	555.9715		-36.4
April	1194.2385	741.5905		-37.9
May	1478.7675	924.049	924.049	-37.5
June	1756.1845		1108.8588	-36.9
July	2006.0985		1293.6686	-35.5
August	2277.975		1478.4784	-35.1
September	2570.295		1663.2882	-35.3
October	2848.958		1848.098	-35.1
November	3148.796		2032.9078	-35.4
December	3414.1095		2217.7176	-35.0
			Average	**-35.4**

Annex C: Extracts from Admiralty Notice to Mariners Wk. 50/23

PAGE 232, UNITED KINGDOM.
GENERAL NOTES, Maritime Safety Information (MSI) Broadcasts section.
Delete section and replace by:

Maritime Safety Information (MSI) Broadcasts
NAVTEX is the prime means of promulgating MSI using the 518 kHz service with additional information made available on the 490 kHz service. Full MSI broadcasts are made twice a day on VHF and MF consisting of: Inshore Forecast, Gale Warnings, Shipping Forecast, 3 day Fisherman's Forecast where appropriate, Navigational Warnings, GUNFACTS/SUBFACTS (from selected stations only, broadcasts are made only when exercises are expected) and any other authorised information. Note, vessels should select the B1 NAVTEX transmitter identity for the area they are working in and transiting to.

The first broadcast of fresh Gale Warnings, Strong Wind Warnings, abnormal tide warnings and some UK Coastal Warning (WZ) Navigational Warnings will be made on receipt after an announcement on VHF Ch 16 and 2182 kHz MF and may be announced through DSC.

UK Coastal Warning (WZ) Navigational Warnings General Area Message Element
With effect from December 18th 2023 UK Shipping Forecast Areas are used in the General Area message element of UK Coastal Warning (WZ) Navigational Warnings to describe the broad geographic area each message refers to. See ALRS Volume 3(1) (NP283(1)) diagram 'United Kingdom Shipping Forecast Areas' for full details of broad geographic area limits. For further information on message elements of Navigational Warnings See ALRS Volume 3(1) (NP283(1)) entry 'MARITIME SAFETY INFORMATION, Extracts from the revised Joint IMO/IHO/WMO Manual on Maritime Safety Information (MSI) January 2016'.

Example:

Message Elements	Former Style	New Style Using Shipping Forecast Area
Message series identifier	WZ XX/YY	WZ XX/YY
General Area	NORTH SEA.	***HUMBER.***
Locality	Barque Gas Field.	Barque Gas Field.
Key subject with Geographical position	Platform 48/13-PB, 53-36.8N 001-31.6E, unlit.	Platform 48/13-PB, 53-36.8N 001-31.6E, unlit.

NAVAREA I Coordinator (RSDRA2023000303499) 50/23

UK COASTAL WARNING (WZ) NAVIGATIONAL WARNINGS

1. General Area Message Element

With effect from December 18th, 2023, UK Shipping Forecast Areas are used in the General Area message element of UK Coastal Warning (WZ) Navigational Warnings to describe the broad geographic area each message refers to. See ALRS Volume 3(1) (NP283(1)) diagram 'United Kingdom Shipping Forecast Areas' for full details of broad geographic area limits. For further information on message elements of Navigational Warnings See ALRS Volume 3(1) (NP283(1)) entry 'MARITIME SAFETY INFORMATION, Extracts from the revised Joint IMO/IHO/WMO Manual on Maritime Safety Information (MSI) January 2016'.

2. GUNFACTS/SUBFACTS

With effect from December 18th, 2023, GUNFACTS/SUBFACTS negative reports (i.e., notifications when no hazardous operations are taking place) will not be promulgated.