

Joint Tactical Exercise Planning Staff



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JTEPS JW131

18 March 2013

JOINT WARRIOR 131 SUBMARINE, MINEWARFARE, LIVE FIRING AND DENIAL OF GPS TRAINING ACTIVITY

1. Joint Warrior (JW) 131, will take place from 15 until 29 April 2013 and will comprise of a programme of exercises conducted by land forces, warships, submarines and aircraft across the UK. The maritime element (15 until 25 April) is focussed in the offshore and coastal waters to the north east, north and north west of Scotland. This booklet provides outline information on scheduled maritime operations as well as details of intended gunnery and aircraft bombing activity at Cape Wrath and in some open ocean areas.
2. The information is correct at the time of going to print but the routine **SUBFACTS** and **GUNFACTS** broadcasts, made during the exercise, will provide updated information.
3. The information provided in this booklet will also be published in Fleet Ops Notice to Fishermen, Defence Training Estate Scotland Notice to Fishermen and Cape Wrath Range Notices. This document is also on the internet at <http://www.qhm.mod.uk/clyde>.
4. This booklet contains the following sections:
 - a. Submarine Activity.
 - b. Warship Activity.
 - c. Minewarfare Activity.
 - d. Live Firing and Gunnery Activity.
 - e. Denial of GPS Services.
 - f. Unexploded Ordnance Advice.
5. The warships taking part have been instructed to offer fishing vessels and the wider civilian community every assistance in their dealings with exercise activity, especially when in the vicinity of submarines or participants conducting live firing or when GPS is denied for training. You are invited to contact them as required to ensure that military training and civilian activities do not come into conflict.

6. Throughout JW 131 the following points of contact are available on a 24/7 basis to attend to any immediate problems or questions:

Primary - Joint Warrior Duty Controller	01436 674321 Ext. 6469
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Secondary - Duty Submarine Controller	01923 956366
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HM Coastguard at Clyde, Stornoway and Aberdeen can also contact the Joint Warrior staff directly and will relay information if necessary.

7. If you have any queries, problems, or suggestions as to how JTEPS can improve this booklet, please do not hesitate to contact the Staff Officer Submarines at the above address.

P J Titterton OBE
Captain Royal Navy
Captain JTEPS

Submarine Activity

1. The Submarine Activity Grid on the following page shows the areas and time periods where submarine activity associated with Joint Warrior (JW) is forecast. Please note that other submarines that are not part of the exercise may transit the areas north west of Scotland; their activity is not covered in this brief. The daily SUBFACTS broadcast by the Coastguard will provide notification of the actual areas where **all** submarine activity is taking place. During Joint Warrior, in order to keep the SUBFACTS broadcast short, a number Scottish Exercise Areas are grouped together. The groupings are shown in the chartlet and table in this section.
2. Communications can be established with submarines during JW when they are surfaced or at periscope depth on VHF Ch 16 (working Ch 73). In the event that they are operating with warships, one of the warships will have been detailed to act as the Fishing Vessel Safety Ship (FVSS) in accordance with the Code of Practice. The FVSS has two overarching duties:
 - a. To make fishing vessels aware of submarine activity in their vicinity and to provide information and advice to minimise the risk of interaction.
 - b. To provide assistance to the participating submarine in compiling a comprehensive surface picture in order to minimise the risk of interaction with non-exercise vessels.
3. It is usually easier to establish communications with the FVSS than with a submarine. However, any warship in the vicinity may be contacted and asked for a report on any exercises involving submarines which are being conducted in the local area. Alternatively, the ship may be used to relay messages or instructions to the submarine if required.

Submarine Activity

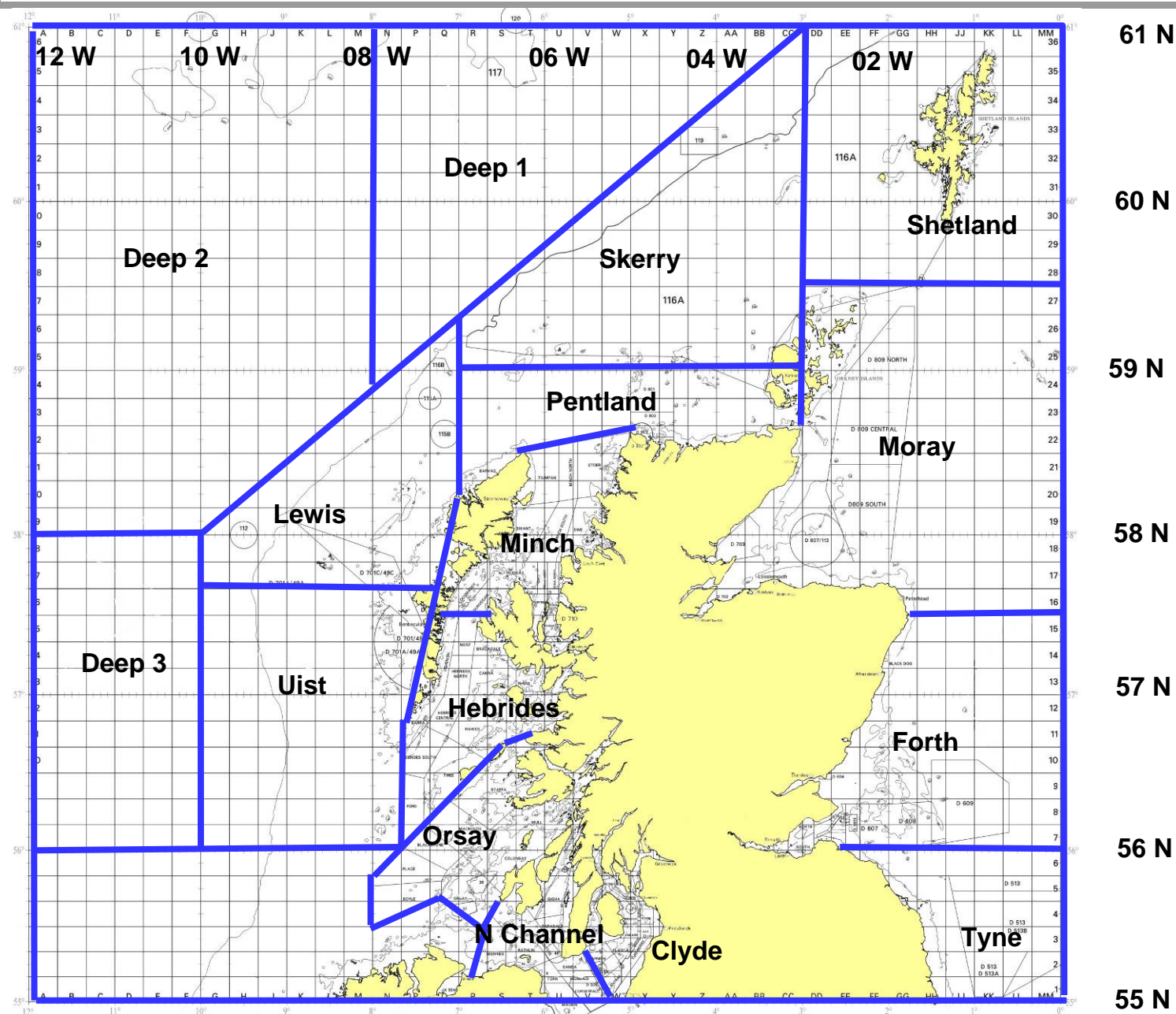
Exercise Joint Warrior 131

SUBFACTS AREAS ACTIVATION GRID

	14 APR			15 APR			16 APR			17 APR			18 APR			19 APR			20 APR			21 APR			22 APR			23 APR			24 APR			25 APR		
	SUN			MON			TUE			WED			THU			FRI			SAT			SUN			MON			TUE			WED			THU		
Active Time Period BST	0001 - 0800	0800 - 1600	1600 - 2359	0001 - 0800	0800 - 1600	1600 - 2359	0001 - 0800	0800 - 1600	1600 - 2359	0001 - 0800	0800 - 1600	1600 - 2359	0001 - 0800	0800 - 1600	1600 - 2359	0001 - 0800	0800 - 1600	1600 - 2359	0001 - 0800	0800 - 1600	1600 - 2359	0001 - 0800	0800 - 1600	1600 - 2359	0001 - 0800	0800 - 1600	1600 - 2359	0001 - 0800	0800 - 1600	1600 - 2359	0001 - 0800	0800 - 1600	1600 - 2359			
ORSAY			A	A	A																									A	A	A	A	A		
N.CHANNEL			A	A	A																											A	A	A		
HEBRIDES				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
MINCH						A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
UIST				A	A	A	A	A	A	A																										
LEWIS																			A	A	A	A	A	A	A	A	A	A	A	A						
PENTLAND										A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
SKERRY																			A	A	A	A	A	A	A	A	A	A								
DEEP 1																			A	A	A	A	A	A	A	A	A	A			A					
DEEP 2																			A	A	A	A	A	A	A	A	A	A			A	A	A			
DEEP 3																																				
SHETLAND																																				
MORAY																																				
FORTH																																				
TYNE																																				

The planned activity in the JW SUBFACTS AREAS is indicated by the letter **A** in the grid above. There may be changes to this planned activity. Daily SUBFACTS Broadcasts will contain the most up to date information regarding the activation of the areas.

Submarine Activity



**JW SUBFACTS
Area Groupings**

Submarine Activity

SCOTTISH EXERCISE AREAS – JW SUBFACTS GROUPING

CLYDE

BALLANTRAE
AILSA
STAFNISH
PLADDA
TURNBERRY
DAVAAR
LAMLASH
GOIL
COVE

AYR
BRODICK
IRVINE
LAGGAN
GARROCH
LOCHRANZA
SKIPNESS
ROSNEATH

TARBERT
MINARD
FYNE
WEST KYLE
EAST KYLE
CUMBRAE
STRIVEN
GARELOCH

ORSAY

STAFFA
MULL
BLACKSTONE
MACKENZIE

EIGG
JURA SOUND
PLACE
ORSAY

COLONSAY
LINNHE
BOYLE

NORTH CHANNEL

ISLAY
EARADALE
RATHLIN
MAGEE
PEEL
TORR

OTTER
KINTYRE
MAIDEN
BEAUFORT
MERMAID

GIGHA
SKERRIES
CORSEWALL
ARDGLASS
SANDA

HEBRIDES

USHENISH
CANNA
HEBRIDES NORTH
TIREE
BARRA

NEIST
RHUM
HEBRIDES CENTRAL
HAWES
FORD

BRACADALE
SLEAT
HEBRIDES SOUTH
EIGG

MINCH

RONA NORTH
RAASAY
SHIANT
MINCH SOUTH
LOCHMADDY

RONA SOUTH
TIUMPAN
EWE
PORTREE
DUNVEGAN

RONA WEST
STOER
MINCH NORTH
TRODDAY
CROWLIN

Warship Activity

VHF Challenges

1. In light of ever changing threats to our Armed Forces, military ships maintain a detailed plot of maritime activity in their vicinity, which includes establishing the identity of small fishing vessels. This can be achieved visually from helicopters or by challenges on IMM VHF radio by ships. Mariners are advised that warships from various Allied Nations will be conducting such reconnaissance and challenges. Areas likely to be affected are the Clyde, North Channel, South of the Sea of Hebrides, the Sea of Hebrides, the Little Minch, North Minch, the area near Cape Wrath, Loch Eriboll and the Outer Hebrides. Mariner's co-operation during this time would be much appreciated. A small number of contracted civilian vessels including high speed craft will be operating in the vicinity of the Minches in support of this training task. Every effort will be made to avoid interference to fishing vessels.

Small Boat Activity

2. On Monday 15 April and Friday 19 April, north of Arran a large number of fast small boats (both contracted civilian and military) will operate with Warships and helicopters. This activity will remain clear of the main shipping and ferry routes. Small boats taking part in this will indicate their participation by showing a green flag.

Minewarfare Activity

1. Mine Counter Measures (MCM) vessels will conduct minehunting exercises using sonar to look for potential mines both on the seabed and moored to the seabed that are subsequently investigated by remote controlled submersible vehicles and divers.
2. Towed sweeps for minesweeping will be used during JW 131.
3. All participating MCM vessels will be thoroughly briefed on local fishing operations in advance of the exercise and are instructed to make early liaison calls to fishing vessels on VHF. Skippers of fishing vessels operating in the vicinity of these ships are encouraged to talk to them and discuss intentions.
4. If any difficulty is experienced a call should be made to the Duty Submarine Controller at CTF 311 OPS ROOM on the “**Fishermen’s Hotline**” number, **01923 956366**. This line is permanently manned.

5. The following MCM vessels will participate in Ex JW 131:

Name	Nationality	Pennant No
HMS BROCKLESBY	British	M33
HMS GRIMSBY	British	M108
HMS HURWORTH	British	M39
HMS PEMBROKE	British	M107
BNS BELLIS	Belgium	M916
BNS PRIMULA	Belgium	M924
FGS WEILHEIM	German	M1059
HNLMS URK	Netherlands	M861
HNLMS VLAARDINGEN	Netherlands	M863
HNOMS HINNOEY	Norwegian	M343
HNOMS KARMOEY	Norwegian	M341
HNOMS RAUMA	Norwegian	M352
ORP CZAJKA	Polish	624
ORP CZERNICKI	Polish	511

6. Inert mines have been laid for the exercise, in the following areas:

- a. **LOCH EWE** (see chartlet 1)

All areas within Loch Ewe between latitudes 57 52.28N and 57 49.20N

- b. **MINCHES** (see chartlet 2)

Along the following line:

- A. 57 32.98N 006 52.06W
- B. 57 41.98N 006 35.06W
- C. 57 50.18N 006 16.06W

Minewarfare Activity

c. **CARN SKERRIES/HORSE ISLAND** (see chartlet 1)

- A. 57 57.94N 005 20.08W
- B. 57 57.55N 005 20.57W
- C. 57 58.44N 005 23.08W
- D. 57 58.84N 005 22.58 W

d. **EILEAN DUBH** (see chartlet 1)

- A. 57 59.23N 005 25.60W
- B. 57 58.85N 005 25.50W
- C. 57 58.75N 005 26.84W
- D. 57 59.60N 005 26.90W

e. **PRIEST ISLAND (SOUTH)** (see chartlet 1)

- A. 57 56.91N 005 31.48W
- B. 57 56.50N 005 31.82W
- C. 57 56.83N 005 33.32W
- D. 57 57.27N 005 33.00W

f. **GRUINARD BAY APPROACH** (see chartlet 1)

- A. 57 56.24N 005 28.57W
- B. 57 55.80N 005 28.91W
- C. 57 56.25N 005 30.70W
- D. 57 56.68N 005 30.46W

g. **GRUINARD BAY** (see chartlet 1)

- A. 57 54.00N 005 29.61W
- B. 57 52.80N 005 29.61W
- C. 57 52.80N 005 30.80W
- D. 57 53.02N 005 30.80W
- E. 67 53.02N 005 30.00W
- F. 57 54.00N 005 30.00W

h. **BROAD BAY** (see chartlet 3)

- A. 58 16.60N 006 14.60W
- B. 58 16.60N 006 12.20W
- C. 58 15.40N 006 12.20W
- D. 58 15.40N 006 12.20W

i. **LOCH ERIBOLL APPROACH** (see chartlet 4)

- A. 58 42.97N 004 42.00W
- B. 58 34.00N 004 36.72W
- C. 58 31.96N 004 38.16W
- D. 58 29.70N 004 41.30W

Minewarfare Activity

j. **LOCH ERIBOLL ANCHORAGE (NORTH)** (see chartlet 4)

- A. 58 33.30N 004 38.00W
- B. 58 33.30N 004 36.40W
- C. 58 32.00N 004 36.40W
- D. 58 32.00N 004 38.00W

l. **LOCH SNIZORT**

- A. 57 33.00N 006 25.00W
- B. 57 37.00N 006 25.00W
- C. 57 37.00N 006 29.50W
- D. 57 33.00N 006 29.50W

m. **CLYDE APPROACHES**

ETTRICK BAY

- A. 55 44.86N 005 13.27W
- B. 55 47.84N 005 12.81W
- C. 55 49.44N 005 08.78W
- D. 55 50.64N 005 08.78W

BRODICK BAY

- A. 55 31.99N 004 54.12W
- B. 55 35.49N 005 06.42W
- C. 55 35.23N 005 08.85W

LAMLASH APPROACH

- A. 55 31.99N 004 54.12W
- B. 55 32.54N 005 04.82W
- C. 55 31.80N 005 07.05W

n. **CAMPBELTOWN APPROACHES**

- A. 54 50.00N 005 18.06W
- B. 55 15.50N 005 21.36W
- C. 55 18.00N 005 21.01W
- D. 55 22.00N 005 21.46W
- E. 55 26.49N 005 30.76W

7. The planned minelay and recovery programme.

- a. **Minelay.** No additional mine targets will be put down without further Notice to Fishermen. All the above areas are established exercise areas with existing targets on the sea bed.

Minewarfare Activity

b. **Mine recovery.** There is no dedicated mine recovery period during JW 131. This will occur throughout the exercise.

8. Minehunters will conduct live firings of mine disposal charges in the following area:

a. **MINE DISPOSAL CHARGE FIRING AREA** (see chartlet 1)

- A. 57 57.58N 005 33.93W
- B. 57 57.85N 005 33.93W
- C. 57 58.25N 005 31.97W
- D. 57 57.02N 005 31.97W

b. **DIVER PLACED CHARGES FIRING AREA** in Loch EWE will take place within a circle, with a radius of 200m, centred on 57 47.90N 005 38.90W.

9. Minesweeping will take place during JW 131 within the minesweeping corridors defined below.

a. **EAST SHIANT BANK**

- 1000 yds either side of a line:
- A. 57 56.38N 006 08.40W
 - B. 58 02.80N 005 59.60W

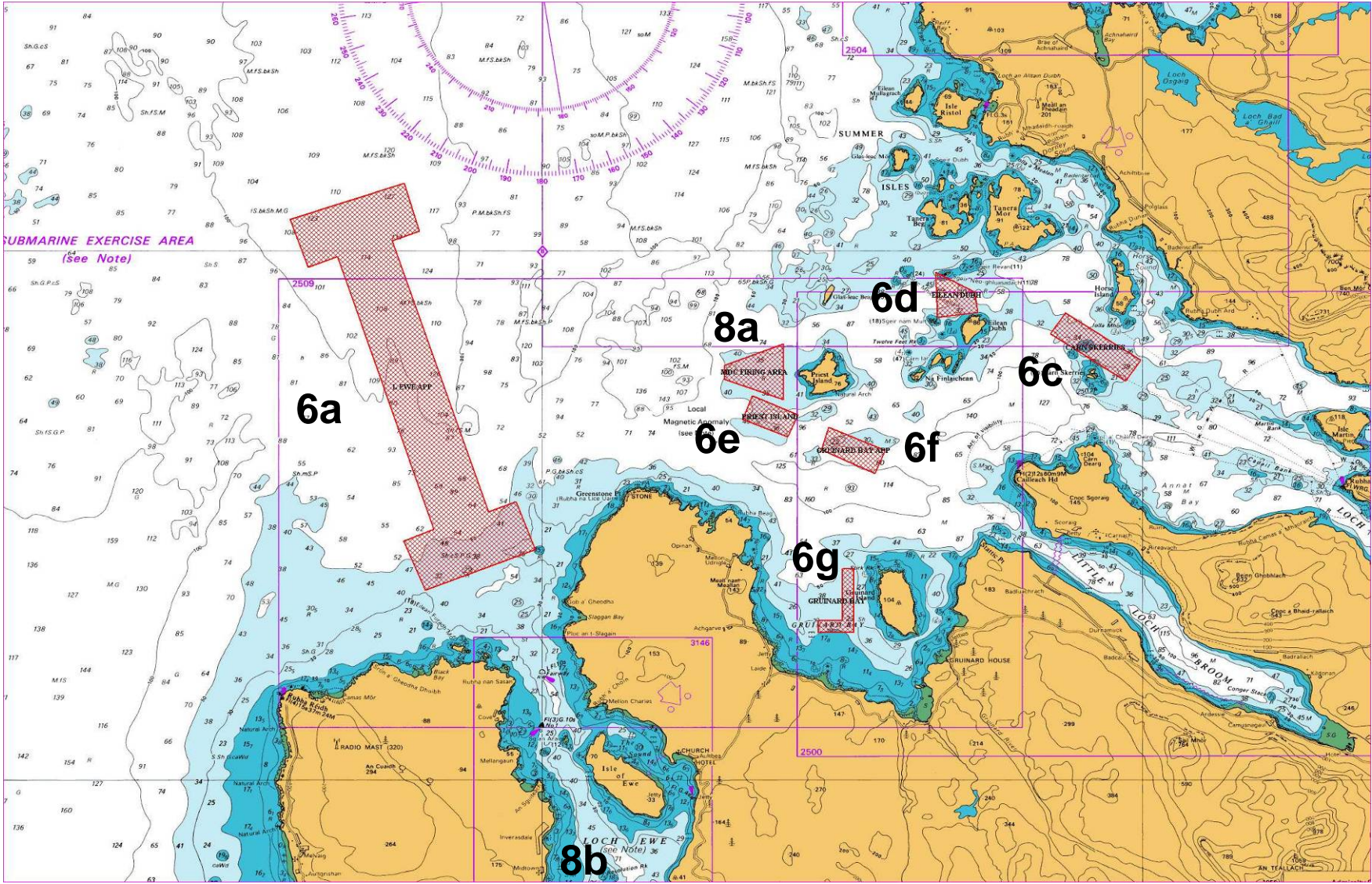
b. **LOCH EWE APPROACH** (see chartlet 1)

- 1000 yards either side of a line:
- A. 58 00.00N 005 46.00W
 - B. 57 55.00N 005 43.80W

10. Liaison between the MoD and appropriate fishermen's associations/organisations, in some cases with individual owners/skippers, HM Coastguard and Marine Scotland have been made to use the above areas. Should anyone consider that their organisation/association should be included in this process in future please contact Lieutenant Commander Matt Offord (FOSNNI SMCDO) on 01436 674321 ext. 6510.

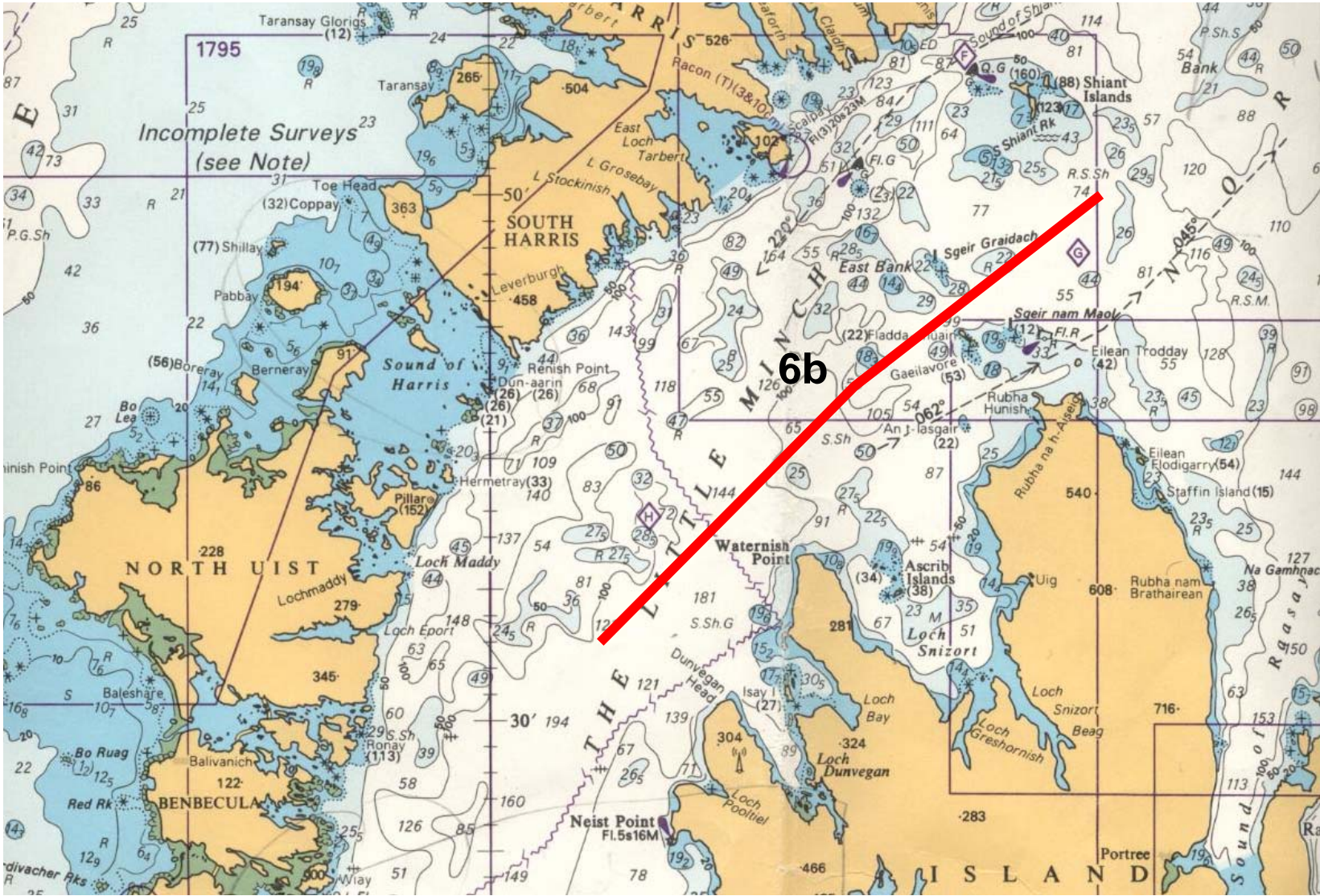
11. All participating MCM vessels will be thoroughly briefed on local fishing operations in advance of the exercise and are instructed to make early liaison calls to fishing vessels on VHF. Skippers of fishing vessels operating in the vicinity of these ships are encouraged to talk to them and discuss intentions.

Minewarfare Activity



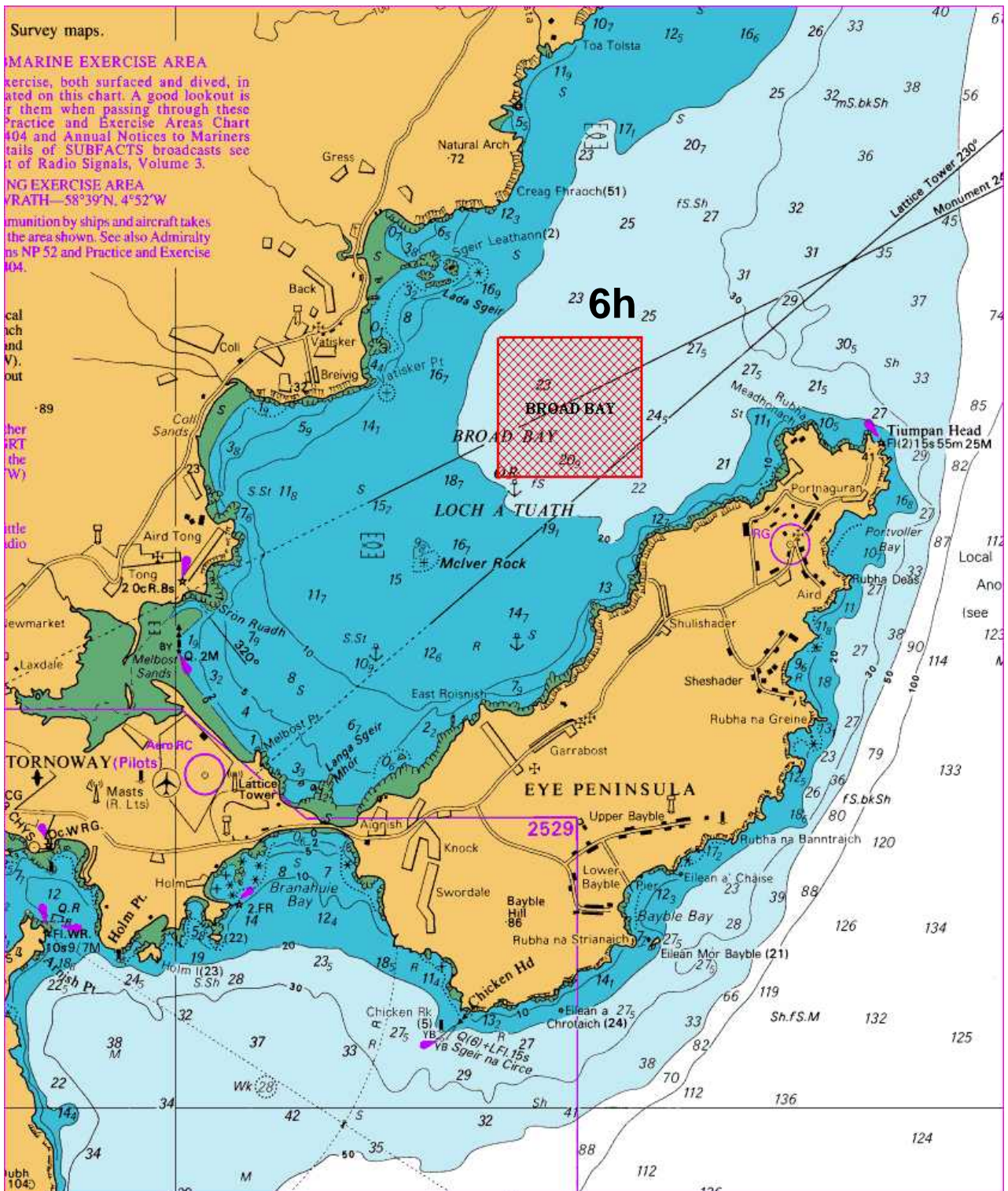
Chartlet 1

Minewarfare Activity

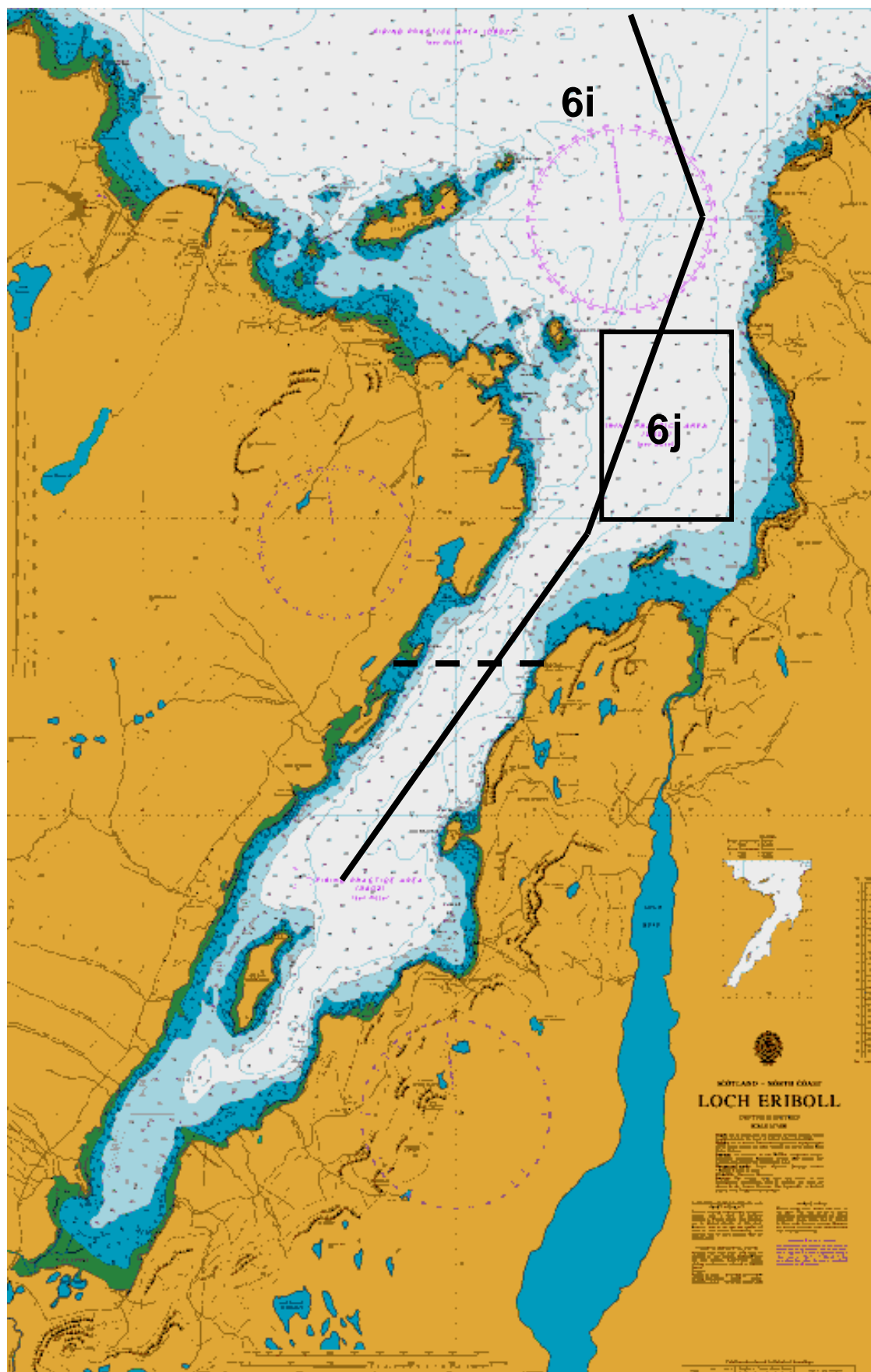


Chartlet 2

Minewarfare Activity



Chartlet 3



Chartlet 4

Live Firing and Gunnery

1. During Joint Warrior, Cape Wrath Range, including Garvie Island (An Garbh-eilean) will be active with various combinations of air bombardment, naval gunfire support and helicopter operations. In addition a Joint Warrior Firing and Danger Area will be activated for offshore gunnery. The Gunfacts and JW Offshore Firing Areas Activation Grid on the following page shows the areas and time periods where gunnery associated with Joint Warrior is forecast to take place. The daily GUNFACTS Broadcast by the Coastguard and Cape Wrath Range will provide notification of the actual areas where all the gunnery activity is taking place.
2. Joint Warrior Firing and Danger Area coordinates are in the accompanying chartlet.
3. It is mandatory that vessels in the vicinity of the Cape Wrath Range keep a listening watch on VHF Channel 16. Further information regarding firing at can be obtained by telephoning:

**Cape Wrath Information Line on
FREEPHONE 0800 833300.**

or 01862 892185

The number will provide specific information about active/non-active periods and when the Range road (U70) will be open/closed for public access.

Live Firing and Gunnery

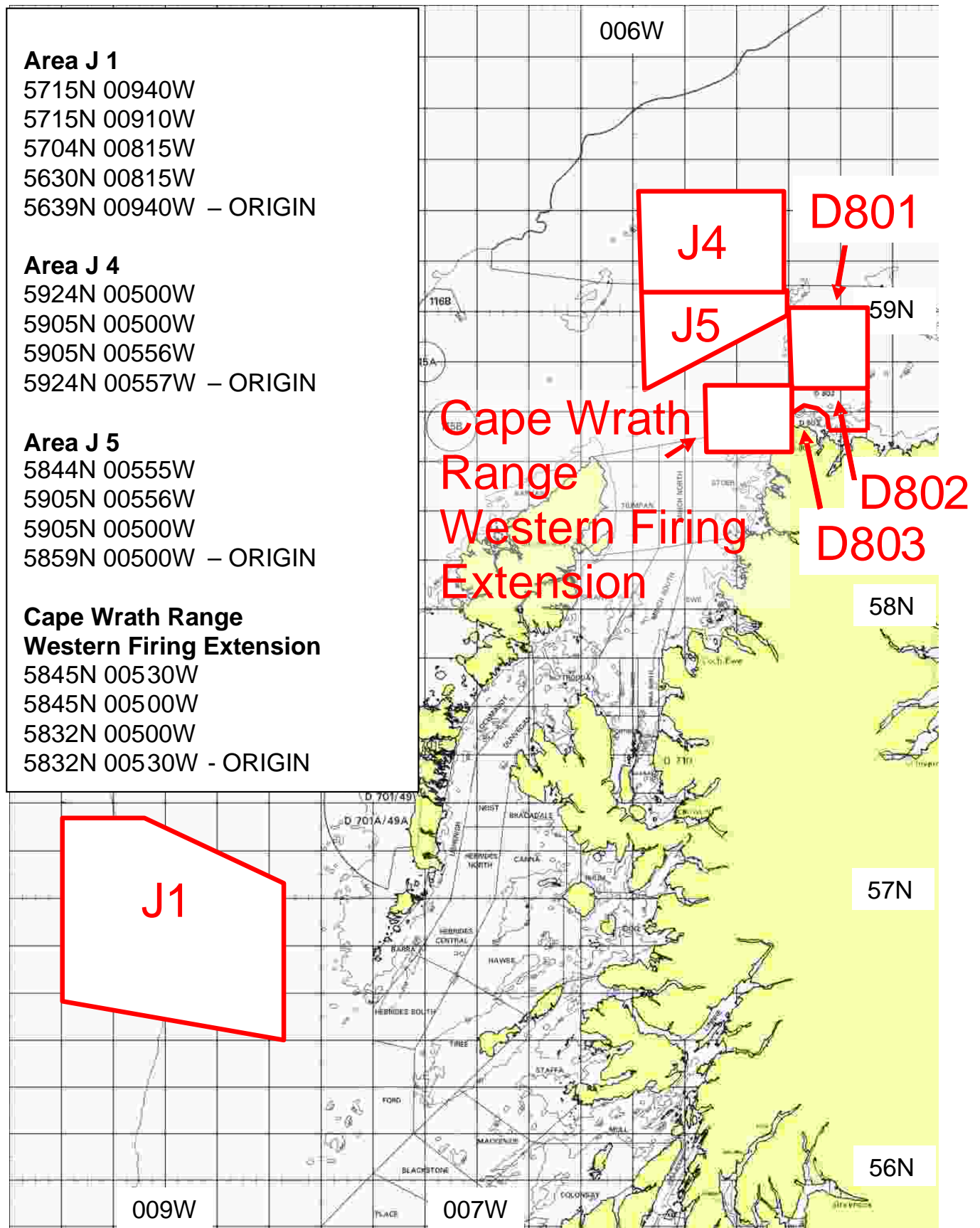
Exercise Joint Warrior 131

GUNFACTS AND JW OFFSHORE FIRING AREAS ACTIVATION GRID

	15 APR	16 APR	17 APR	18 APR	19 APR	20 APR	21 APR	22 APR	23 APR	24 APR	25 APR
	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU
Cape Wrath Range (Ashore)	0001-2359	0001-2359	0001-2359	0001-2359	0001-2359	0001-2359	0001-2359	0001-2359	0001-2359	0001-2359	0001-2359
Cape Wrath D801		1100-1300									
Cape Wrath D802	1400-2100	0800-2359	0700-2359	0001-1730	0800-2100	0800-2359		0800-2359	0800-2359		
Garvie Island D803	1400-2100	0800-2359	0800-2359	0001-1730	0800-2100						
JW Danger Area J1	0730-1530	1130-1600									
JW Danger Area J4	1530-1700	1700-1830	1430-1600	0900-1400	1100-1600						
JW Danger Area J5	1530-1700	1700-1830			1100-1600						
Cape Wrath Western Firing Extension											
Clyde Areas D 509	1600-2000	0800-1230	1400-1700								

The planned times of firings at Cape Wrath Range and JW Firing areas is indicated in the grid above. There may be changes to this planned activity. Daily GUNFACTS Broadcasts and Cape Wrath Range Broadcasts will contain the most up to date information regarding the activation of the areas. Times are Local.

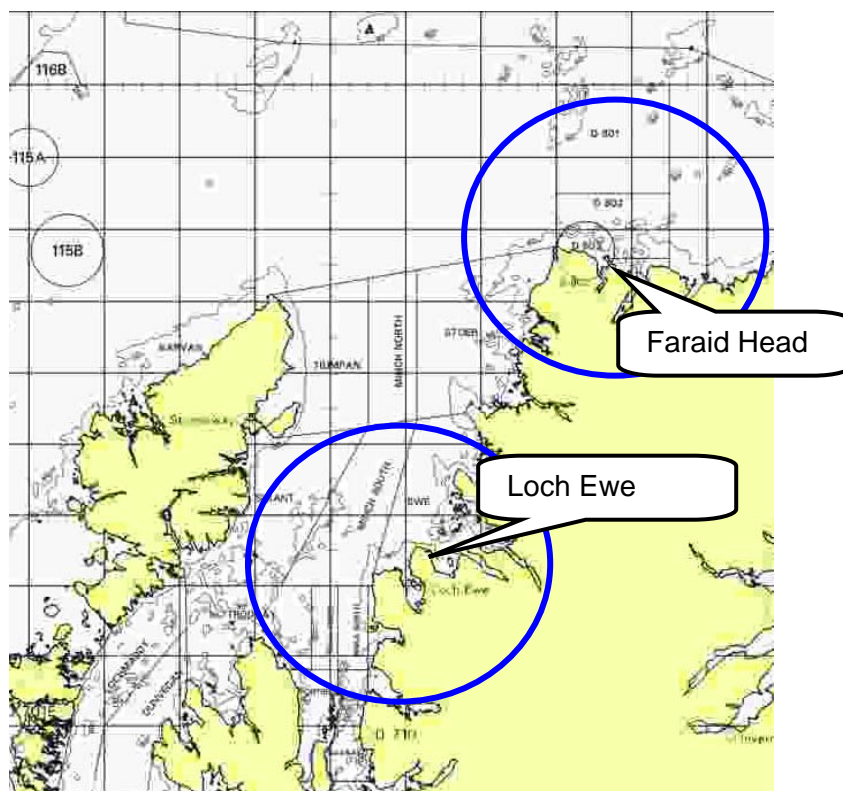
Joint Warrior Firing and Danger Areas



Denial of GPS Service

1. Denial of GPS services through the jamming of the GPS signal is an essential part of preparation for military operations and the training is likely to impact to both military and civilian users on land, sea and in the air. The ability to conduct jamming is spread throughout the modern world. Consequently, Military Forces are required to train under such conditions in order to demonstrate the effects it has on systems and to train personnel in other modes of operating. The jamming equipment is located at:

- a. Faraid Head - 58 36.2N 004 46.4W
- b. Loch Ewe - 57 51.9N 005 41.1W



2. Jamming of GPS signals may affect equipment using GPS within the North Minch northwards from Rubha Réidh 57-52N 005-48W to Stoer Head 58-14N 005-24W and within 35 nautical miles line of sight from the Faraid Head jamming site, depending on receiver antenna height. Plots showing predictions of areas where interference can be expected are included at the end of this section.

3. Subject to approval from the MOD to conduct GPS denial training the planned times GPS Denial are shown in the time table on the next page. A sécurité message will be broadcast by Stornoway and Shetland CG prior to and on completion of the jamming period, during which time GPS receivers and any related equipment may not function, or give incorrect position info or default to DR mode. If this occurs, positional assurance will have to be determined by other means and manually updated at regular intervals. Crews should be aware of these limitations and use alternative means of navigation during jamming periods to confirm their position and check the equipment on completion. Military

Denial of GPS Service

vessels in the Faraid Head jamming area are, as part of their Gunnery clear range procedure, to inform civilian vessels in their vicinity via VHF that GPS jamming is taking place and that they should manually update their DSC position.

4. All military vessels and aircraft will be ordered to maintain a lookout for any abnormal vessel behaviour during jamming periods and warn vessels as required

5. Emergency cease jam via VHF to Stornoway CG or Joint Warrior duty controller 01436 674321 ext. 6469.

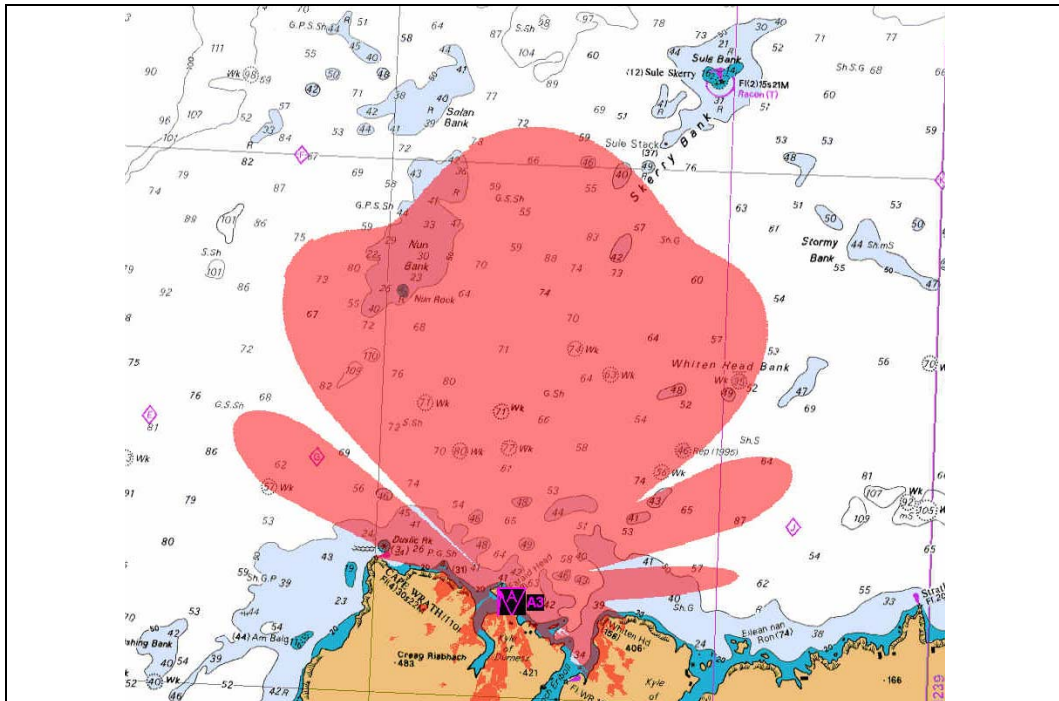
GPS DENIAL TIME TABLE

Date (All times are local)	Loch Ewe N57 51.9 - W005 41.1	Faraid Head N58 36.2 - W004 46.4
Mon 15 Apr 13	0800 - 0900	1100 - 1200
	1100 - 1200	1400 - 1500
Tue 16 Apr 13	1100 - 1200	1130 - 1230
	1400 - 1500	1430 - 1530
	1700 - 1800	
Wed 17 Apr 13	1100 - 1200	
	1400 - 1500	1500 - 1600
	1800 - 1900	1900 - 2000
Thu 18 Apr 13	0900 - 1000	1030 - 1130
	1100 - 1200	1400 - 1500
	1300 - 1400	1700 - 1800
	1500 - 1600	
Fri 19 Apr 13	0800 - 0900	1000 - 1100
	1530 - 1630	1200 - 1300
	1900 - 2000	
Sat 20 Apr 13	0900 - 1000	1030 - 1130
	1400 - 1500	1500 - 1600
	1930 - 2030	
Sun 21 Apr 13	1230 - 1330	
	1900 - 2000	
Mon 22 Apr 13	0800 - 0900	1045 - 1145
	1200 - 1300	1300 - 1400
	1500 - 1600	1600 - 1700
	1800 - 1900	
Tue 23 Apr 13	0930 - 1030	1200 - 1300
	1230 - 1330	1500 - 1600
	1600 - 1700	1700 - 1800
	1930 - 2030	
Wed 24 Apr 13	0900 - 1000	1100 - 1200
	1300 - 1400	1300 - 1400
	1500 - 1600	1630 - 1730
	1900 - 2000	
Thu 25 Apr 13	0900 - 1000	
	1200 - 1300	

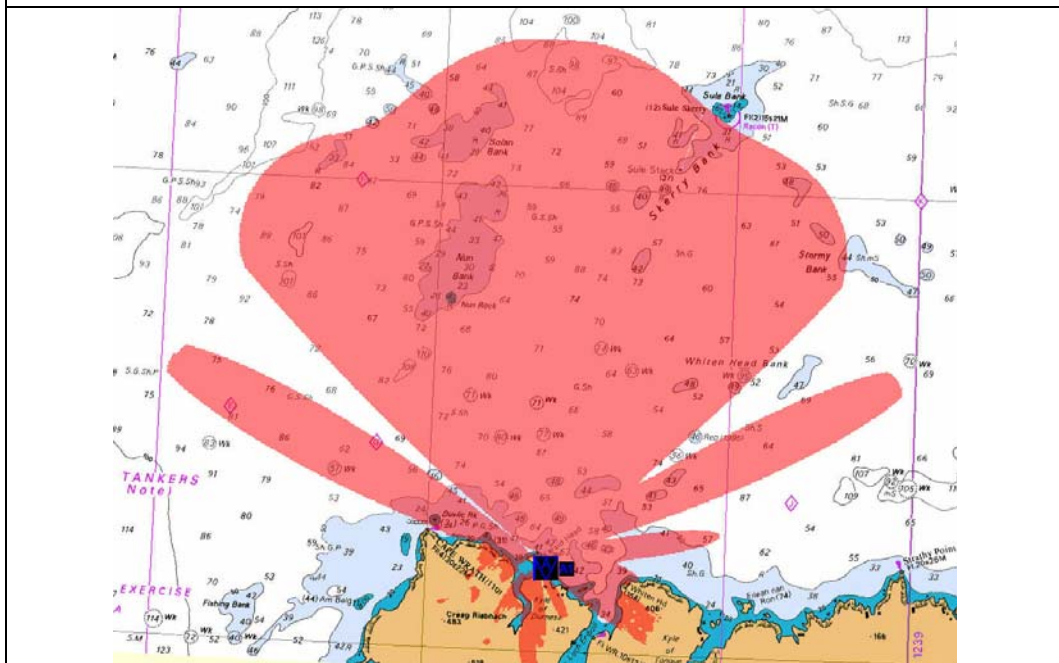
Denial of GPS Service

GPS RECEIVER INTERFERENCE PREDICTION PLOTS FOR FARAIID HEAD

The shaded areas represent the 30dB J/S threshold vs the minimum GPS L1 C/A-Code measured signal strength of -157dBW.



Faraid Head. Receiver antenna height 4m



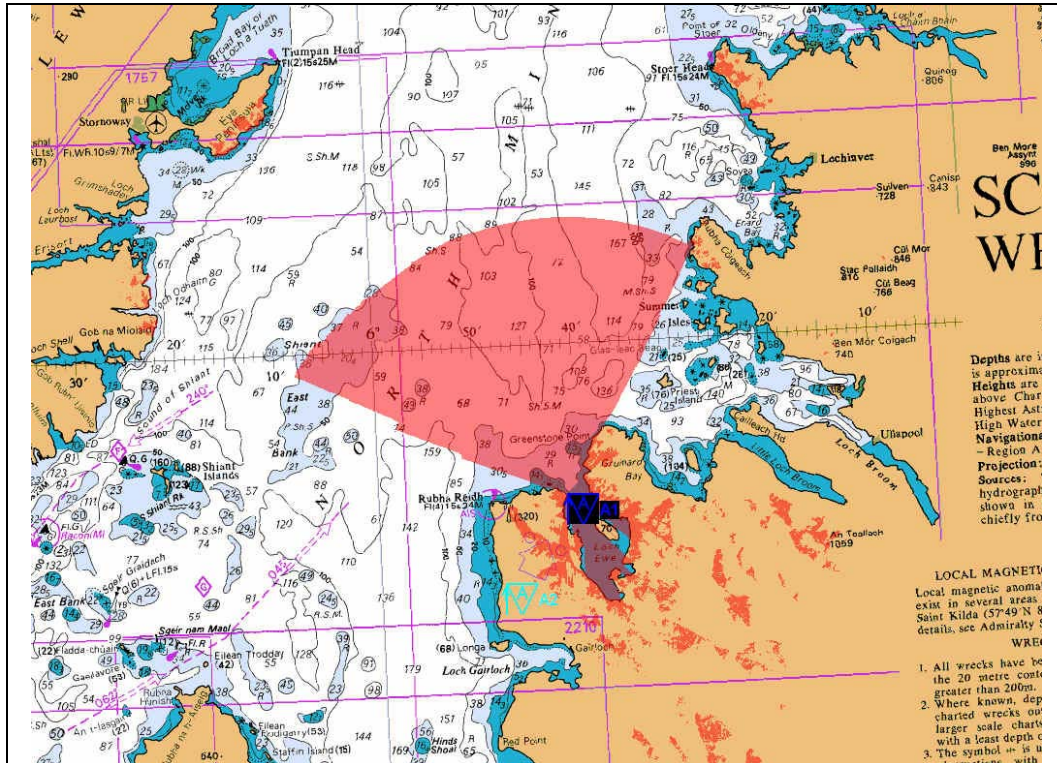
Faraid Head. Receiver antenna height 25m

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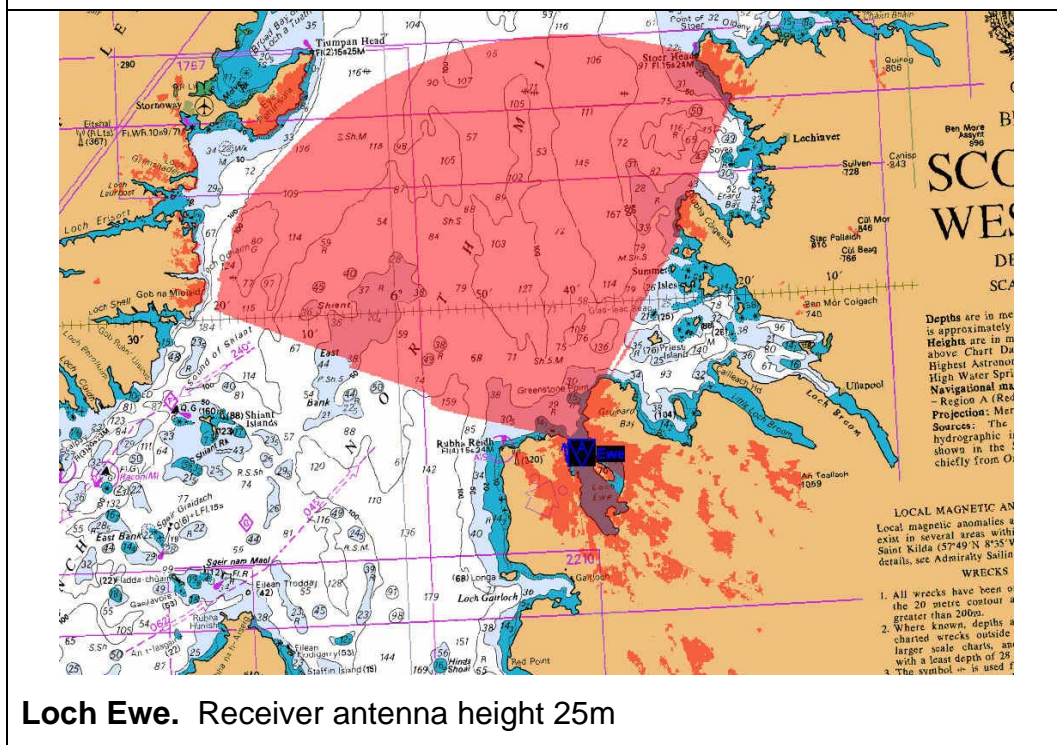
Denial of GPS Service

GPS RECEIVER INTERFERENCE PREDICTION PLOTS FOR LOCH EWE

The shaded areas represent the 30dB J/S threshold vs the minimum GPS L1 C/A-Code measured signal strength of -157dBW.



Loch Ewe. Receiver antenna height 4m



Loch Ewe. Receiver antenna height 25m

Plots reproduced with permission of DSTL.

Unexploded Ordnance Advice

1. The following general advice is offered to anyone discovering anything believed to be unexploded ordnance:

DIVERS	DO NOT TOUCH
FISHERMEN	Contact the coastguard. If this is not possible, lay the item in about 60ft of water, away from shipping routes and mark the position with a float.
EVERYONE	DO NOT TOUCH – dial 999 for coastguard or Police.

Contact Telephone Numbers

UNEXPLODED ORDNANCE (FLEET DUTY CONTROLLER)	01923 956366
FISHERMAN'S HOTLINE (FLEET DUTY CONTROLLER) SUBMARINE RELATED	01923 956366
HOTLINE (JOINT WARRIOR DUTY CONTROLLER) GPS JAMMING RELATED	01436 674321 Extn 6469
JOINT WARRIOR CONTROLLER	01436 674321 Extn 4372
CAPE WRATH INFORMATION LINE	FREEPHONE 0800 833300

If future versions of this brief are not required please contact:

Joint Tactical Exercise Planning Staff, JHQ Room 301, Northwood Headquarters,
Sandy Lane, NORTHWOOD, Middlesex HA6 3HP

Telephone: 01923 958788.

E-Mail: JTEPS-SM-SO2@mod.uk