

Fact sheet No. 8 – The Shipping Forecast

Introduction

The Met Office is the national meteorological service of the United Kingdom and its general functions include the organization of voluntary weather observing and the collection of meteorological data by other means over the oceans.

The Met Office was established as the Meteorological Department of the Board of Trade in 1854 when Captain, later Vice-Admiral, Robert FitzRoy was appointed as its first head, and operations commenced in 1855. FitzRoy is probably better known for his role as Captain of H.M.S. *Beagle* between 1832 and 1835, when he was accompanied by the 26-year-old naturalist, Charles Darwin, during voyages of exploration and survey around the coasts of South America. FitzRoy introduced the first British storm warning service for shipping in 1861, making use of the electric telegraph; his was the main influence in the early development of the Met Office, which was then primarily intended to improve safety at sea. He is also credited with coining the word 'forecast', and the invention of two types of barometer, many examples of which are still in use today. The first telegraphic weather reporting was carried out in 1865; by the year 1911, in addition to coastal waters, the North Atlantic was covered by broadcasts of gale warnings.

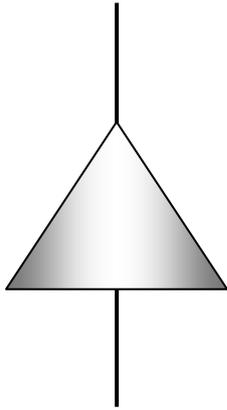


Figure 1. Vice-Admiral Robert FitzRoy.

Gale warnings were issued by telegraph to the observation station(s) likely to be affected. The message would consist of a list of places with the words 'North Cone' or 'South Cone' (for northerly or southerly gales), 'Drum' (for gales successively), or 'Drum and North (or South) Cone' (for heavy gale or storm). On receipt, the station would hoist the appropriate signal on a staff, this being repeated at points along the coast by the Coast Guard or by other authorized stations.

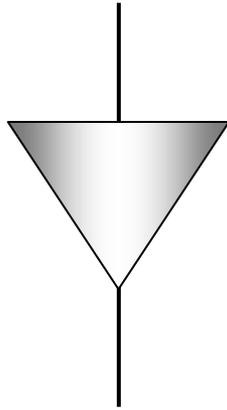
DAY SIGNALS - (Hoisted for Gales)

North Cone



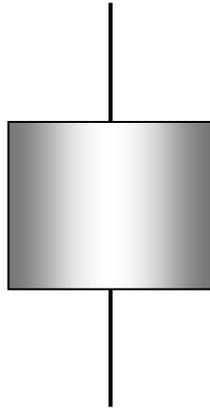
Gale
Probably
From the
Northward

South Cone



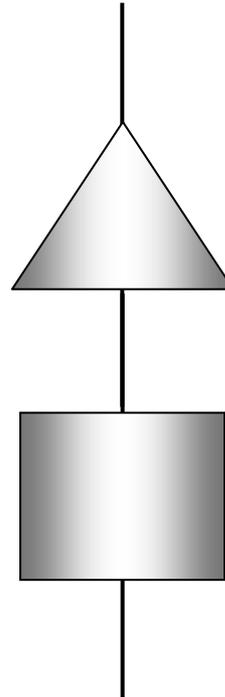
Gale
Probably
From the
Southward

Drum

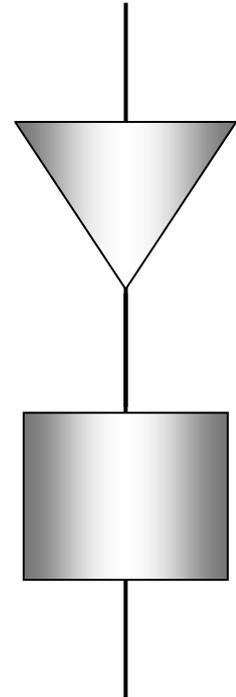


Gales
successively

Heavy Gale or Storm

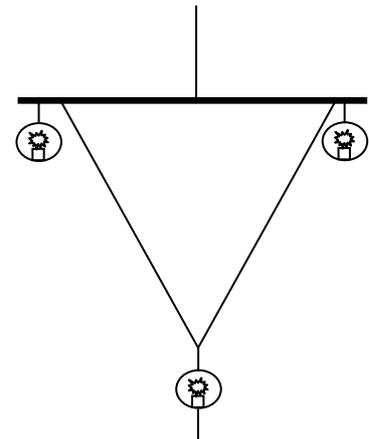
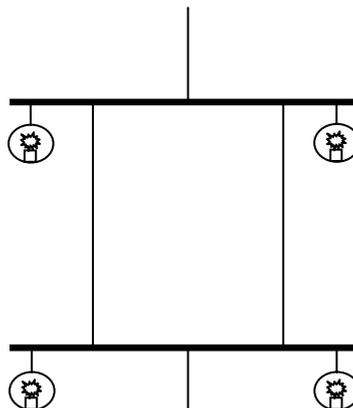
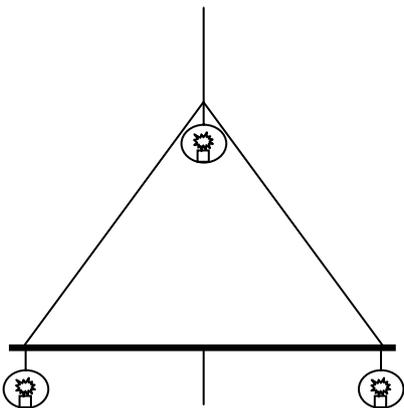


Dangerous
Winds
Probably at first
From the
Northward



Dangerous
Winds
Probably at first
From the
Southward

NIGHT SIGNALS - (instead of the above) Lights in triangle, or square



Four lanterns and two yards, each four feet long, will be sufficient – as only one signal will be used at night. These signals may be made with any lantern, showing either white, or any colour, but *alike*. Red is most eligible. Lamps are preferable to candles. The halyards should be good rope, and protected from chafing. The lanterns should hang at least three feet apart.

History of the sea areas used in the BBC and GPO weather bulletins for shipping.

Gale warnings for the British Isles were being broadcast to ships in the Eastern North Atlantic approaching these shores as far back as 1911, but on the outbreak of war in 1914 this service ceased and it was not until 1921 that any regular weather bulletin for shipping could be resumed.

Commencing in June 1921 a specially prepared weather message for shipping approaching the western coasts of the United Kingdom was broadcast twice a day from the wireless transmission station at Poldhu in Cornwall. This message consisted of the forecast for the Western Coasts in plain language, followed by observations, in code, of barometric pressure, wind direction and force, visibility and barometric tendency taken at 0700 and 1800 GMT at Blacksod Point (County Mayo, Eire), Stornoway (Isle of Lewis), Holyhead, Scilly and Dungeness so that mariners were given some idea as to the weather conditions upon which the forecasts were based.

On 1st January 1924 in appreciation of the valuable help given to the meteorological service of this country by the radio weather reports from ships, a weather bulletin called Weather Shipping was started, broadcast twice daily at 0900 and 2000 GMT, from the powerful Air Ministry station G.F.A. in London, on a wavelength of 4,100 metres using CW (continuous wave) transmission which was capable of being received at a distance of up to 2,400 miles to the westward and some 2,000 miles to the south-ward.

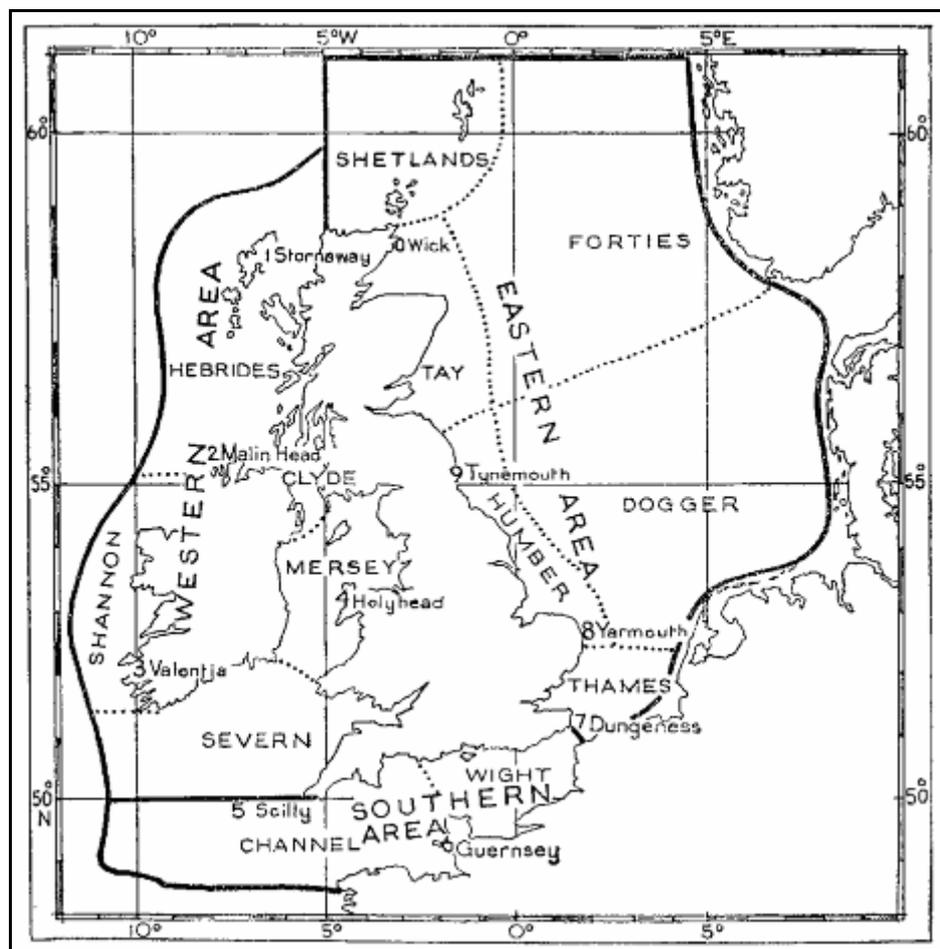


Figure 2. Sea areas and stations as used originally in 1924. The numbers before the names of the stations indicate their code number. The boundaries of the areas are defined by the plain black lines and the coast line. These areas are sub-divided into districts named after islands, rivers or banks within them so that they may be readily memorized. The same principle in naming of sea areas is still used, i.e. names which at once identify the area to the mariner.

Most large ocean-going ships by this time were fitted for CW wireless telegraphy reception but there were still quite a number of the smaller ocean-going vessels and some coasters fitted for the reception of Spark transmission only, so that it was not long before pressure was being brought to bear for this bulletin to be broadcast on Spark as well as CW for their benefit. By the end of that year Spark transmissions of the bulletin were made from the coast stations at Valencia and Seaforth for the western area, Niton for the southern area and Cullercotes for the eastern area.

The bulletin was in six parts:

Part I gave a general inference of weather conditions over the British Isles which usually included information of the pressure systems influencing the weather, and their positions.

Part II gave actual observations in code, with station number, barometric pressure and tendency, visibility, direction and force of wind, at the ten British stations shown in figure 2, numbered from 0 to 9.

Part III, IV and V were forecasts of wind and visibility for the 12 hours following the time of observations for the areas shown on the chart.

Part VI commencing 'outlook' gave a general statement of the expectation of weather after the period of the forecast.

From October 1925 this bulletin, with the exception of Part II – which was in code – was broadcast by telephony from the BBC station 5XX at Daventry twice daily on 1,600 metres. In 1932, a Northern area was added to the shipping bulletins (see figure 3) mainly for the benefit of the increasing number of trawlers fishing within its limits.

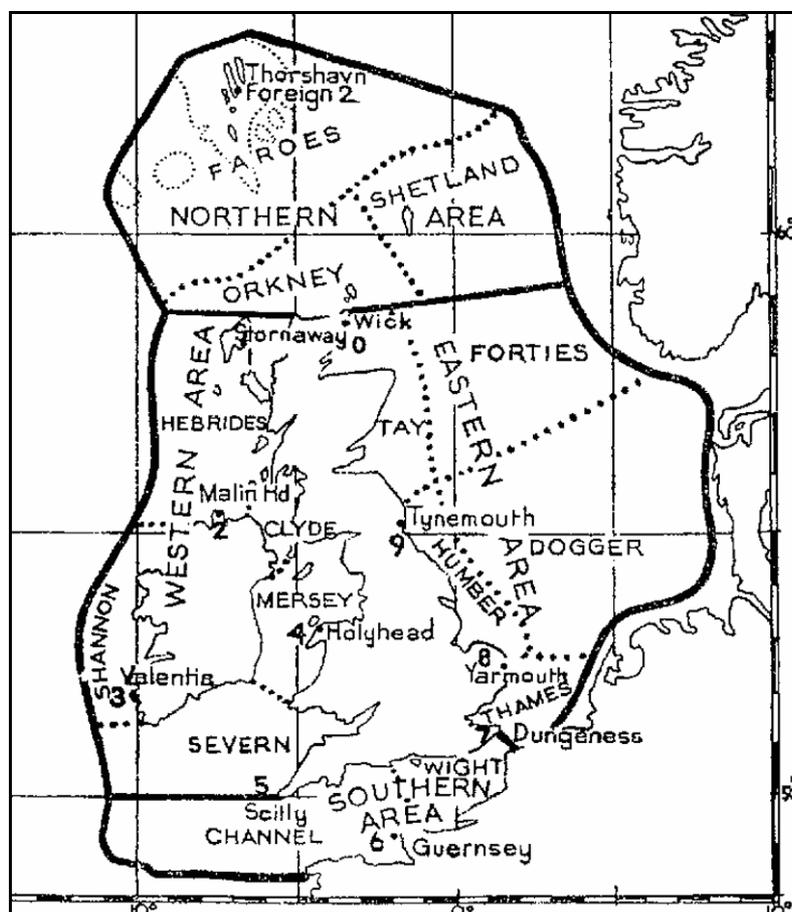


Figure 3. Sea areas as amended in 1932.

Radio weather bulletins for shipping ceased on the outbreak of hostilities in 1939. They were resumed again in 1945 in much the same form as in 1939.

By 1948 most shipping services had returned to normal and a need was felt for shipping forecasts to cover a wider area. Figure 4, shows the considerable extension of forecasts agreed in that year and introduced in 1949 when the chart was given a new format; the northern, southern, eastern and western area divisions shown on previous charts were omitted.

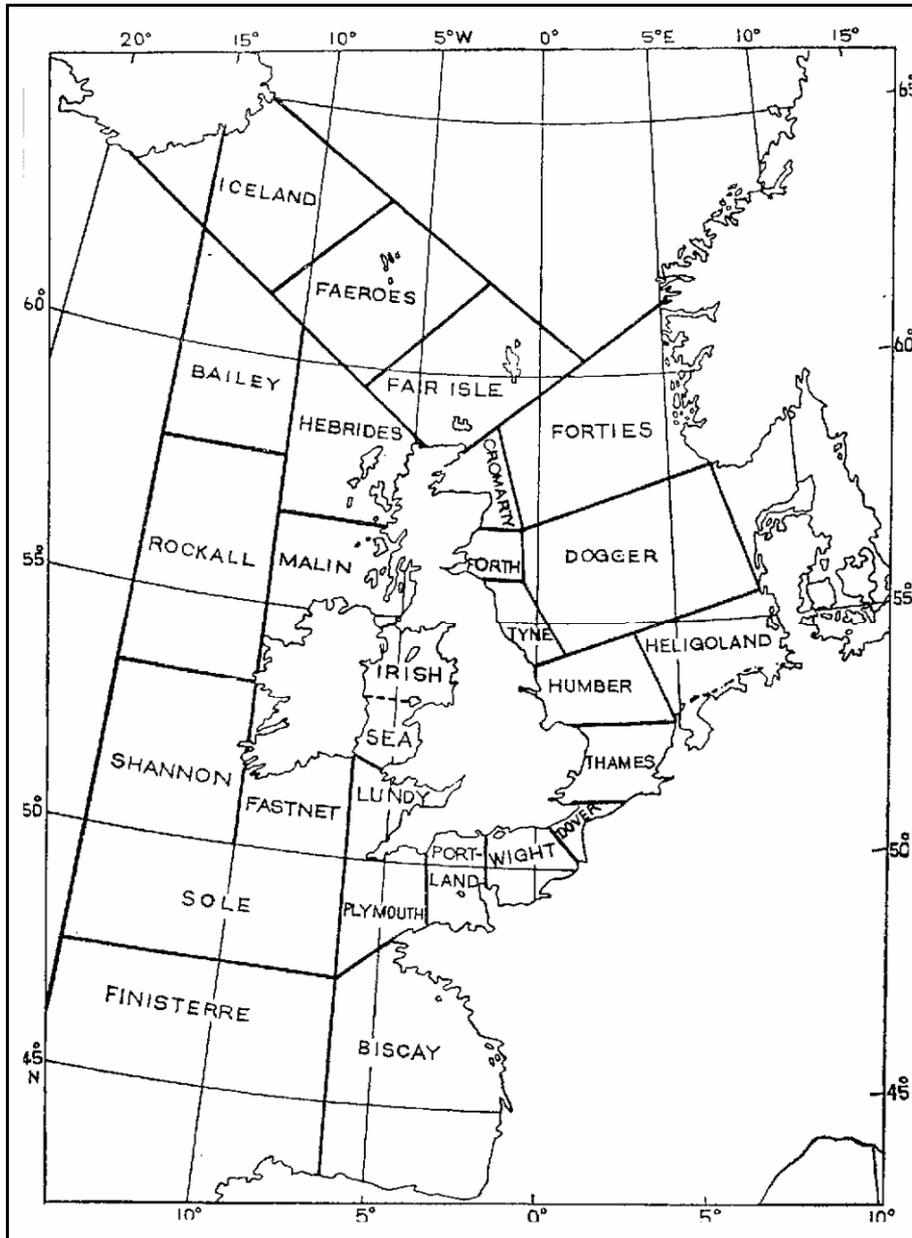


Figure 4. Sea areas adopted in 1949.

In 1955 a meeting of meteorologists representing countries bordering the North Sea recommended that the area then designated 'Heligoland' by the United Kingdom should be renamed 'German Bight', the name it was generally known by on the other side of the North Sea. Three other changes were also recommended at this meeting. These were that the area Dogger be divided and the north-eastern half named 'Fisher', and that the area Forties be divided and the northern half named 'Viking'. Both these new areas are names of banks within their boundaries well known to mariners.

The area then known as Iceland was to be renamed 'South-east Iceland' to identify clearly its position. After full consultation with the authorities concerned these changes were introduced in 1956. Figure 5 shows clearly these new areas.

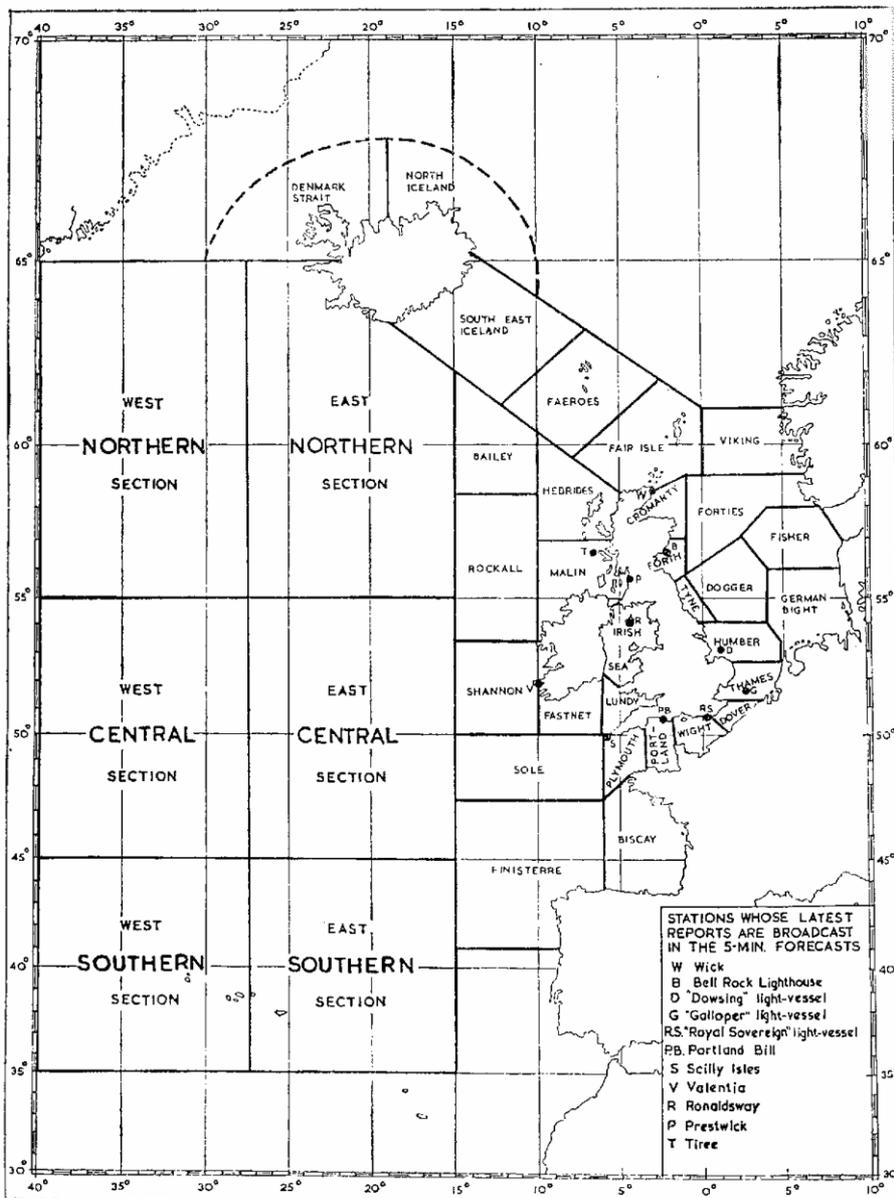


Figure 5. Sea areas as used until August 1984. The areas Denmark Strait, North Iceland and the Northern, Central and Southern Sections are used in the North Atlantic Weather Bulletin which is provided for these areas. In all of these maps the forecast subdivisions are named after islands, rivers, or banks within them to that they may be easily memorized – i.e. they are names which at once identify the areas to the mariner.

As from August 1984, new common area boundaries for shipping forecasts were introduced throughout the North Sea region. This was the result of a special agreement reached between all the countries bordering the North Sea.

Two new areas, North and South Utsire, were introduced at that time to refine the forecast detail in that area. These areas were named after the small island of Utsira off Norway's west coast, known mainly for the increase in its small population at the time of the spring herring fisheries. See Figure 6.

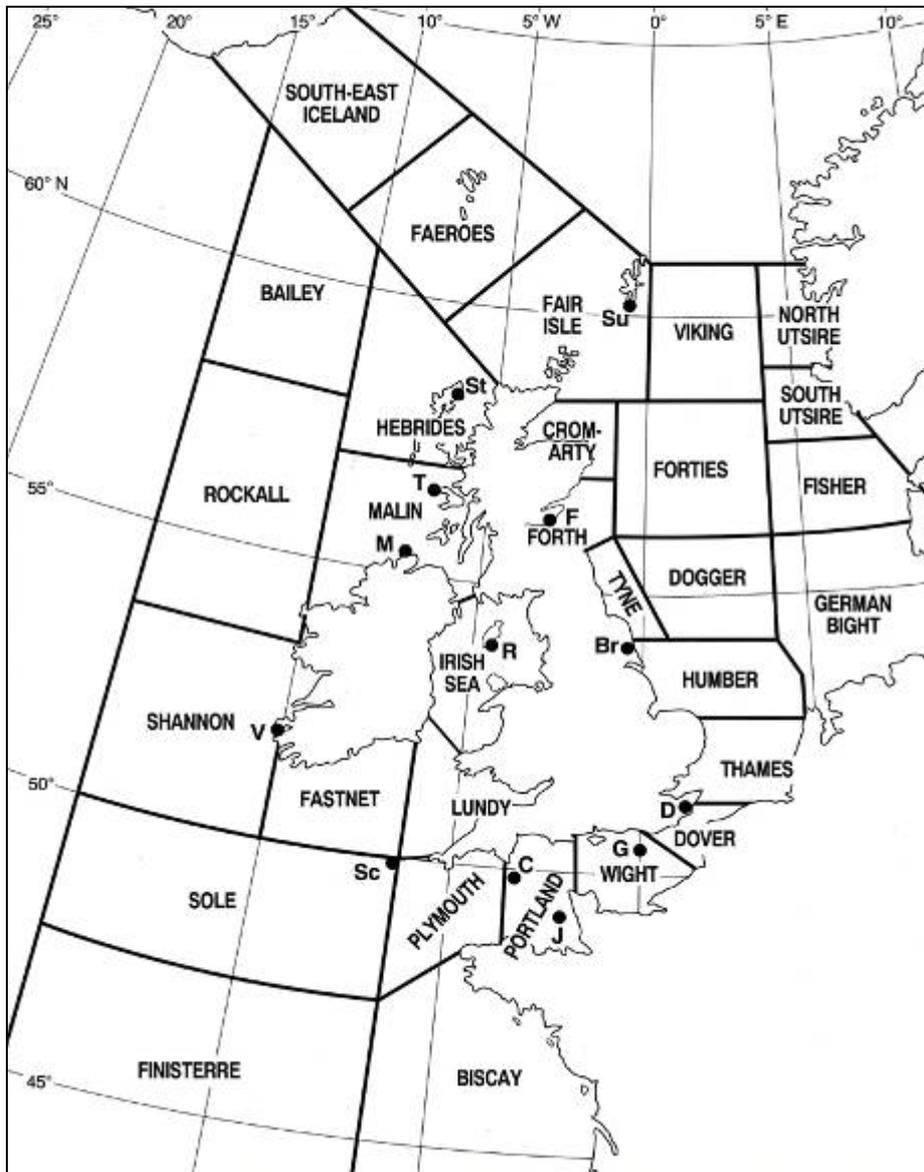


Figure 6. Sea areas used between August 1984 and February 2002.

In February 2002, in recognition to the work Admiral Robert FitzRoy did in setting up the Met Office in 1854, the sea area Finisterre was renamed FitzRoy. This also corresponded with some subtle changes to the boundaries of the sea areas in the western approaches. See figure 7.

Over the years many of the stations that report in the shipping forecast have changed. Many factors have influenced this and these factors are outside of the Met Office's control. Automation of light vessels, or their replacement by unmanned buoys, may prevent the continuation of accurate reports from a station whose reports are used in the forecasts. Hence the Smith's Knoll light vessel, long established off Norfolk's east coast, with its Met Office Automatic Weather Station installed in 1989, was withdrawn by Trinity House at the end of September 1993. Regular reports already being received from Bridlington for use in the inshore waters forecast are now used in place of Smith's Knoll.

Other changes of closure of reporting stations, introduced by external organizations for economic or technical reasons, may necessitate adjustments over which the Met Office has no control, but the most appropriate available reporting stations are always used.



Figure 7. Sea areas used from February 2002 onwards.

Sea Areas used in the Shipping Forecasts.

Coastal Sea Areas	Coordinates	Coastal Sea Areas	Coordinates	Coastal Sea Areas	Coordinates
Viking	61°00'N 000°00'W 61°00'N 004°00'E 58°30'N 004°00'E 58°30'N 000°00'W	North Utsire	61°00'N 004°00'E 61°00'N 005°00'E 59°00'N 005°35'E 59°00'N 004°00'E	South Utsire	59°00'N 004°00'E 59°00'N 005°35'E 57°45'N 007°30'E 57°45'N 004°00'E
Forties	58°30'N 001°00'W 58°30'N 004°00'E 56°00'N 004°00'E 56°00'N 001°00'W	Cromarty	57°00'N 002°10'W 57°00'N 001°00'W 58°30'N 001°00'W 58°30'N 003°00'W	Forth	55°40'N 001°50'W 56°00'N 001°00'W 57°00'N 001°00'W 57°00'N 002°10'W
Tyne	54°15'N 000°20'W 54°15'N 000°45'E 56°00'N 001°00'W 55°40'N 001°50'W	Dogger	57°00'N 002°30'E 56°00'N 001°00'W 54°15'N 000°45'E 54°15'N 004°00'E 56°00'N 004°00'E	Fisher	57°45'N 004°00'E 56°00'N 004°00'E 56°00'N 008°10'E 57°05'N 008°35'E 57°45'N 007°30'E

Coastal Sea Areas	Coordinates	Coastal Sea Areas	Coordinates	Coastal Sea Areas	Coordinates
German Bight	56°00'N 008°10'E	Humber	52°45'N 001°40'E	Thames	51°15'N 001°25'E
	56°00'N 004°00'E		52°45'N 004°40'E		51°15'N 002°55'E
	54°15'N 004°00'E		53°35'N 004°40'E		52°45'N 004°40'E
	53°35'N 004°40'E		54°15'N 004°00'E		52°45'N 001°40'E
	52°45'N 004°40'E		54°15'N 000°20'W		-
Dover	50°45'N 000°15'E	Wight	50°35'N 001°55'W	Portland	50°25'N 003°30'W
	50°15'N 001°30'E		49°45'N 001°55'W		48°50'N 003°30'W
	51°15'N 002°55'E		50°15'N 001°30'E		49°45'N 001°55'W
	51°15'N 001°25'E		50°45'N 000°15'E		50°35'N 001°55'W
Plymouth	50°05'N 005°45'W	Biscay	48°27'N 006°15'W	FitzRoy	48°27'N 015°00'W
	50°00'N 006°15'W		43°35'N 006°15'W		41°00'N 015°00'W
	48°27'N 006°15'W		48°27'N 004°45'W		41°00'N 008°40'W
	48°27'N 004°45'W		-		43°35'N 006°15'W
	48°50'N 003°30'W		-		48°27'N 006°15'W
	50°25'N 003°30'W		-		-
Trafalgar	35°00'N 015°00'W	Sole	50°00'N 006°15'W	Lundy	52°30'N 006°15'W
	35°00'N 006°15'W		50°00'N 015°00'W		50°00'N 006°15'W
	41°00'N 008°40'W		48°27'N 015°00'W		50°05'N 005°45'W
	41°00'N 015°00'W		48°27'N 006°15'W		52°00'N 005°05'W
Fastnet	51°35'N 010°00'W	Irish Sea	54°50'N 005°05'W	Shannon	53°30'N 015°00'W
	50°00'N 010°00'W		54°45'N 005°45'W		50°00'N 015°00'W
	50°00'N 006°15'W		52°30'N 006°15'W		50°00'N 010°00'W
	52°30'N 006°15'W		52°00'N 005°05'W		51°35'N 010°00'W
	-		-		53°30'N 010°05'W
Rockall	58°00'N 010°00'W	Malin	57°00'N 005°50'W	Hebrides	60°35'N 010°00'W
	58°00'N 015°00'W		57°00'N 010°00'W		57°00'N 010°00'W
	53°30'N 015°00'W		54°20'N 010°00'W		57°00'N 005°50'W
	53°30'N 010°05'W		54°45'N 005°45'W		58°40'N 005°00'W
	54°20'N 010°00'W		54°50'N 005°05'W		-
Bailey	62°25'N 015°00'W	Fair Isle	61°50'N 002°30'W	Faeroes	63°20'N 007°30'W
	58°00'N 015°00'W		59°30'N 007°15'W		61°10'N 011°30'W
	58°00'N 010°00'W		58°40'N 005°00'W		59°30'N 007°15'W
	60°35'N 010°00'W		58°30'N 003°00'W		61°50'N 002°30'W
	-		58°30'N 000°00'W		-
	-		61°00'N 000°00'W		-
South East Iceland	63°35'N 018°00'W	-	-	-	-
	61°10'N 011°30'W	-	-	-	-
	63°20'N 007°30'W	-	-	-	-
	65°00'N 013°35'W	-	-	-	-

Table 1. Co-ordinates of the sea areas used in the shipping forecast.

Shipping forecast area names

<u>Sea area</u>	<u>Reason for name</u>
Viking	- Sand bank in the North Sea
North Utsire	- Utsira - island off the west coast of Norway
South Utsire	- Utsira - island off the west coast of Norway
Forties	- Sand bank in the North Sea
Cromarty	- River estuary or place (Cromarty Firth/Cromarty)
Forth	- River estuary (Firth of Forth)
Tyne	- River estuary (River Tyne)
Dogger	- Sand bank in the North Sea
Fisher	- Sand bank in the North Sea
German Bight	- An area between the two headlands of The Netherlands and Denmark
Humber	- River estuary (River Humber)
Thames	- River estuary (River Thames)
Dover	- Place (port on the south coast of England)
Wight	- Island (Isle of Wight)
Portland	- Place (port on the south coast of England)
Biscay	- Place (Bay of Biscay)
Trafalgar	- Headland (Cape Trafalgar – Spain)
FitzRoy	- Founder of the Met Office (Vice-Admiral Robert FitzRoy)
Sole	- Sand bank, west of the Scilly Isles
Lundy	- Lundy Island – island in the Bristol Channel
Fastnet	- Clear, in southwest Ireland. Fastnet Rock in the most southerly point of the Republic of Ireland
Irish Sea	- Place (Irish Sea)
Shannon	- River estuary (River Shannon)
Rockall	- Island/rock stack in the Atlantic Ocean
Malin	- Place (Malin Head)
Hebrides	- Place (Hebrides)
Bailey	- Sand bank, in the north Atlantic Ocean between Scotland and Iceland
Fair Isle	- Place (Fair Isle, between Orkney and Shetland)
Faeroes	- Place (The Faeroe Islands)
Southeast Iceland	- Place (areas of the Atlantic Ocean southeast of Iceland)

Example of the shipping forecast

And now the Shipping Forecast issued by the Met Office, on behalf of the Maritime and Coastguard Agency, at 0505 on Tuesday 28 August 2007.

The general synopsis at 0100: High 250 miles west of Shannon 1031 slow moving with little change. Weak frontal troughs affecting northern sea areas.

The area forecasts for the next 24 hours:

Viking North Utsire:

Northwesterly 4 or 5, occasionally 6 at first. Mainly moderate. Showers. Good.

South Utsire:

Northwest 6 or 7. Rough or very rough. Showers. Good.

Forties:

Northwest 4 or 5, occasionally 6 in east, becoming variable 3 in west. Slight or moderate, occasionally rough in east at first. Showers. Good.

Cromarty Forth Tyne:

Variable becoming northwesterly 3 or 4, occasionally 5 later. Slight. Showers. Good.

Dogger:

Northwesterly becoming variable 3 or 4, occasionally 5 in east. Light or moderate. Showers. Good.

Fisher German Bight:

Northwest 6 or 7, decreasing 4 or 5 in west. Rough or very rough. Showers. Good.

Humber:

Northerly becoming variable 3 or 4. Moderate decreasing slight. Mainly fair. Good.

Thames Dover Wight Portland Plymouth:

Northeast 4 or 5. Slight or moderate. Fair. Good.

Biscay Fitzroy:

Northeast 5 or 6, occasionally 7, but variable 3 in south. Moderate or rough. Rain or thundery showers, fog patches, in south. Moderate or good, occasionally very poor in south.

Sole:

Northeast 5 or 6, occasionally 7. Moderate or rough. Fair. Moderate or good.

Lundy Fastnet:

North or northeast 4 or 5. Slight or moderate, occasionally rough in south. Mainly fair. Good.

Irish Sea:

North or northwest 3 or 4, occasionally 5 later. Slight. Rain or showers. Moderate or good.

Shannon:

Northerly 3 or 4, occasionally 5 later. Slight, occasionally moderate later. Fair. Good.

Rockall:

Northwesterly 3 or 4, backing southwesterly 5 in north. Slight increasing moderate. Rain at times. Moderate or good.

Malin:

Northwest 3 or 4. Slight. Rain at times. Moderate or good.

Hebrides:

Mainly northwesterly backing southwesterly 3 or 4, occasionally 5. Slight or moderate. Rain or showers. Moderate or good.

Bailey:

Northwesterly backing southwesterly 4 or 5, occasionally 6 later. Moderate. Rain or drizzle. Moderate or good, occasionally poor later.

Fair Isle:

West or northwest 3 or 4, occasionally 5. Slight or moderate. Showers. Good.

Faeroes:

West or northwest backing southwest 4 or 5. Slight increasing moderate. Rain at times. Moderate or good.

Southeast Iceland:

Variable becoming southwesterly 3, increasing 4 or 5. Slight increasing moderate. Rain later. Good, occasionally moderate later.

Inshore waters forecast locations

Figure 8. Sea areas used in the inshore waters forecast.

Example of the inshore waters forecast

Issued by the Met Office at 0600 UTC on Tuesday 28 August 2007
Inshore Waters Forecast to 12 miles offshore from 0500 UTC to 0500 UTC.

From Cape Wrath to Rattray Head including Orkney 24 hour forecast:

Variable becoming northwesterly 3, increasing 4 or 5. Isolated showers. Good. Slight.

Outlook for the following 24 hours:

Westerly 4 increasing 5 or 6, backing southerly for a time. Rain or drizzle. Moderate or good. Slight increasing moderate, locally rough in north.

Rattray Head to Berwick on Tweed 24 hour forecast:

Variable 3 becoming northwesterly 4 or 5. Showers. Good. Slight.

Outlook for the following 24 hours:

Northwest backing west or southwest 4 or 5, occasionally 6 later. Rain later. Good, occasionally moderate later. Slight, locally moderate.

Berwick on Tweed to Whitby 24 hour forecast:

Variable 3 becoming northerly 4 or 5. Mainly fair. Good. Slight.

Outlook for the following 24 hours:

Northerly becoming variable then westerly 4 or 5, decreasing 3 for a time. Showers later. Mainly good. Slight.

Whitby to Gibraltar Point 24 hour forecast:

Variable 3 or 4, becoming mainly northwesterly later. Isolated showers. Good. Slight.

Outlook for the following 24 hours:

Northerly becoming variable then westerly 3 or 4, occasionally 5. Showers. Mainly good. Slight.

Gibraltar Point to North Foreland 24 hour forecast:

Northeasterly 3 or 4, backing northwesterly later. Mainly fair. Good. Slight.

Outlook for the following 24 hours:

Northwesterly 4 or 5, becoming variable 3 for a time. Isolated showers. Good. Slight.

North Foreland to Selsey Bill 24 hour forecast:

Northeasterly 4 or 5. Fair. Good. Slight.

Outlook for the following 24 hours:

Northerly 3 or 4, occasionally 5 later. Fair. Good. Smooth or slight.

Selsey Bill to Lyme Regis 24 hour forecast:

Northeast backing north 3 or 4, occasionally 5. Fair. Good. Slight.

Outlook for the following 24 hours:

Northeasterly 3 or 4, occasionally 5. Fair. Good. Smooth or slight.

Lyme Regis to Lands End including the Isles of Scilly 24 hour forecast:

Northeast 4 or 5. Fair. Mainly good. Smooth or slight, but moderate to west of Lands End.

Outlook for the following 24 hours:

Northeast backing northwest 3 or 4, occasionally 5. Fair. Good. Smooth or slight, occasionally moderate west of Lands End.

Lands End to St Davids Head including the Bristol Channel 24 hour forecast:

Northerly 4 or 5. Fair. Good. Slight or moderate.

Outlook for the following 24 hours:

North backing northwest 4 or 5. Showers later. Good, occasionally moderate later. Slight or moderate.

St Davids Head to Great Ormes Head, including St Georges Channel 24 hour forecast:

Northerly 3 or 4, occasionally 5. Fair. Good. Slight.

Outlook for the following 24 hours:

North backing northwest 4 or 5. Rain or drizzle later. Good, occasionally moderate later. Slight.

Great Ormes Head to the Mull of Galloway 24 hour forecast:

Northwesterly 3 or 4, occasionally 5 later. Rain or showers. Good, occasionally moderate later. Slight.

Outlook for the following 24 hours:

Northwest 4 or 5, occasionally 6 later. Rain or drizzle. Moderate or good, occasionally poor later. Slight increasing moderate.

Isle of Man 24 hour forecast:

West to northwest 3 or 4, occasionally 5 later. Rain or drizzle. Moderate or good. Slight.

Outlook for the following 24 hours:

Northwest 4 or 5, occasionally 6 later. Mainly fair. Good. Slight increasing moderate.

Lough Foyle to Carlingford Lough 24 hour forecast:

Northwesterly 3 or 4. Rain at times. Moderate or good. Slight, smooth in south.

Outlook for the following 24 hours:

West or northwest 4 increasing 5 or 6. Rain at times. Moderate or good. Slight increasing moderate, locally rough in north.

The Mull of Galloway to Mull of Kintyre including the Firth of Clyde and the North Channel 24 hour forecast:

Northwest 3 or 4. Rain or showers. Moderate or good. Slight.

Outlook for the following 24 hours:

West or northwest 4 increasing 5 or 6. Rain or drizzle. Moderate or good, occasionally poor later. Slight increasing moderate, occasionally rough.

Mull of Kintyre to Ardnamurchan Point 24 hour forecast:

Mainly northwesterly 3 or 4, occasionally 5 later. Rain at times. Moderate or good. Slight, locally moderate.

Outlook for the following 24 hours:

West or southwest 3 or 4 veering northwest and increasing 5 or 6. Rain or drizzle. Moderate or good, occasionally poor later. Slight or moderate, occasionally rough later.

Ardnamurchan Point to Cape Wrath including the Outer Hebrides 24 hour forecast:

Southerly veering northwesterly 3 or 4, occasionally 5, backing southwesterly later. Rain or showers. Moderate or good. Slight or moderate.

Outlook for the following 24 hours:

Southwest veering west 4 or 5, occasionally 6 later. Rain or drizzle. Moderate or good, locally poor later. Moderate, occasionally rough.

Shetland Isles 24 hour forecast:

West veering northwest 3 or 4. Showers. Good. Slight.

Outlook for the following 24 hours:

West or northwest 4 or 5, occasionally 6 later, backing southeast for a time. Rain or showers. Moderate or good. Slight or moderate, occasionally rough later.

Rules for the shipping forecast and inshore waters forecast

General

There is an upper word limit, imposed by the BBC of 350 words. The BBC also prefers the forecast to be 'not too short'. This word limit includes the general synopsis, which will not be produced, assuming 40 words for this section; therefore a word range of 260-310 is suggested.

Time of issue

The Shipping Forecast is read out on Radio 4 at 0048, 0536, 1201 and 1754 (local time). All broadcasts are on LW on 1515m (198 kHz) and some transmissions are on VHF. It gives a summary of gale warnings in force, a general synopsis and area forecasts for specified sea areas around the UK. In addition, some bulletins include a forecast for all UK inshore waters, as distinct from the coastal waters. This can be heard on BBC Radio 4 at the end of programmes (approximately 0048), and on BBC Radio 3 at 0535. The forecast covers the area up to 12 miles offshore and is for the period up to 1800 the next day. It includes a general synopsis, the forecast of wind direction and force, visibility and weather. The broadcast on Radio 4 also includes the latest available reports of wind direction and force, visibility, sea-level pressure and tendency for approximately 20 stations around the UK.

Gale summary

The forecast should begin with the gale summary. This should be consistent with all gales currently in force. It should also be consistent with any gales in the body of the forecast. If there are 4 or fewer areas with no gales the summary should read '...in all areas except...'

Terms which describe the variation with time

- **Then** – if a single type of weather (e.g. rain) persists for more than half of the period then changes, this is described as that weather followed by the next weather, for example "rain then fair" or "rain then snow".
For the shipping forecast, there should be no more than two weather types in each final product. If the meteorological situation is such that more than two weathers are present, then the most severe should be taken. For example 'rain then fair then showers' should become 'rain then showers'. See the weather types section.
- **Occasional** – occasional for weather, occasionally for wind or visibility.
Happening more than once and in total for less than half the forecast period. Occasional showers is not generally used.
- **For a Time** – only happening once but for no more than half the total period. Not occurring at either the start or end of the period.
- **At Times** – happening more than once but for not more than half of the total period. Not occurring at either the start or end of the period.
- **At First** – occurring at the start of the period and ceasing before the middle of the period.

- **Later** – starting more than half way through the period and continuing to the end of the period. The use of later should, in general, be avoided - 'becoming' is preferred. This definition is different to that used by the gale warnings product.
- **Soon** – Expected within six to 12 hours of time of issue.
- **Imminent** – Expected within six hours of time of issue.

Terms which describe the variation in space

Variations in space may be expressed in terms of exceptions or splits. An exception is a term used to define local variations in only one of the forecast elements outside its defined range for a given area or product. E.g.:

Wight

Westerly 4 or 5 occasionally 6 in east, showers; moderate or good.

A split is where the area is divided by a straight line separate forecasts are produced for each sub-area. An area can only be split into two parts. e.g.

South Biscay

North easterly 5 to 7, occasionally gale 8; showers; good

North Biscay

Variable 3 or 4; mainly fair; moderate or good

All areas should be capable of having exceptions. Each area can only be split once into two parts but a split area can contain an exception. For example, the visibility in South Biscay could be

Moderate or good but poor in North

Permitted qualifiers are:

- in North, in South etc.

For those areas which can be split they should be split when more than one exception would be required to describe the area, e.g.

Biscay

Westerly 5 to 7 decreasing 3 in west, mainly fair, moderate or good is permitted as an exception

Biscay

Westerly 5 to 7 decreasing 3 in west, mainly fair but occasional rain in east, moderate or good

is not permitted, in this case Biscay should be split into east and west. Adjacent areas may be merged if there is no loss of important information in doing so. They may only be merged in strict order.

Terms which describe a level of risk

- **Perhaps** – perhaps is the only term to be used to describe uncertainty. It should be edited in to the text by the forecaster.

Terms which describe the wind

- **Direction Terms** – North, South, Northwest, Southwest etc. Imply a 45 degree range centred on the direction stated. Northerly, Southerly, North-westerly, South-westerly etc. Imply a 90 degree range centred on the direction stated.
A range of two directions is permitted, e.g. south or southwest. In such cases north, south, east or west are used first. If the wind moves out of the permitted range then backing or veering are used. If the wind alters in both speed and direction then the direction takes precedence e.g.

South veering Southwest, 4 increasing 5 or 6

Shipping forecast directions

<u>Direction</u>	<u>Degrees (true north)</u>	<u>Direction</u>	<u>Degrees (true north)</u>
N	0.00	S	180.00
N by E	11.25	S by W	191.25
NNE	22.50	SSW	202.50
N by NE	33.75	S by SW	213.75
NE	45.00	SW	225.00
E by NE	56.25	W by SW	236.25
ENE	67.50	WSW	247.50
E by ENE	78.75	W by WSW	258.75
E	90.00	W	270.00
E by ESE	101.25	W by WNW	281.25
ESE	112.50	WNW	292.50
E by SE	123.75	W by NW	303.75
SE	135.00	NW	315.00
S by SE	146.25	N by NW	326.25
SSE	157.50	NNW	337.50
S by E	168.75	N by NNW	348.75

Table 2. Shipping forecast directions.

- **Backing** – The changing of the wind in the opposite direction to veering (anticlockwise), e.g. SE to NE.
- **Veering** – The changing of the wind direction clockwise, e.g. SW to W.
- **Becoming** – Wind direction changing either to or from a variable or cyclonic state.
- **Variable** – Used for force 4 or less when the wind direction varies by more than 90 degrees either in time or space(?)
- **Cyclonic** – Cyclonic can be entered by the forecaster at final editing.

Gale warnings

- **Gale** – Winds of at least Beaufort force 8 (34 to 40 knots) or gusts reaching 43 to 51 knots
- **Severe Gale** – Winds of force 9 (41 to 47 knots) or gusts reaching 52 to 60 knots
- **Storm** – Winds of force 10 (48 to 55 knots) or gusts reaching 61 to 68 knots
- **Violent Storm** – Winds of force 11 (56 to 63 knots) or gusts of 69 knots or more
- **Hurricane Force** – Winds of force 12 (64 knots or more)

Note: The term used is 'hurricane force'; the term 'hurricane' on its own means a true tropical cyclone, not experienced in British waters.

Example of a gale warning

On behalf of the Maritime & Coastguard Agency

Note: This is the most recent gale warning received from the Met Office. Previous gale warnings for other areas may still be in force. Please refer to other sources, including Coast Radio, NAVTEX and Coastguards, for more complete information.

GALE WARNING WEDNESDAY 03 AUGUST 0342GMT

Hebrides

Westerly gale 8 expected soon

Speed Terms

Description	Average	knots	Beaufort Force
Calm	0	0	0
Light	2 to 9	1 to 10	1 to 3
Moderate	13	11 to 16	4
Fresh	19	17 to 21	5
Strong	25 to 31	22 to 33	6 to 7
Gale	37	34 to 40	8
Severe Gale	44	41 to 47	9
Storm	51	48 to 55	10
Violent Storm	59	56 to 63	11
Hurricane Force	-	64+	12

Note: Force numbers are used in the text. Forces number 8 and above are preceded by the appropriate text label. Except in the case of 'hurricane force 12' the word force is always omitted. E.g. Gale 8.

Table 3. Speed terms.

- **Speed Ranges** – A range of three forces is permitted when the lightest force is a force 5 (or above), for example '5 to 7', 'gale 8 to storm 10'. If the wind speed increases beyond the permitted range then use increasing, or if it decreases then use decreasing, these to be used with the terms such as for a time, at times etc. as described above.

Terms which describe the weather

These terms should each have a definition if they are all to be included in the text:

- **Mainly fair**
- **Wintry showers**
- **Thundery showers**
- **Thundery rain**
- **Thunderstorm**
- **Snow** – solid precipitation.
- **Rain** – liquid precipitation from layer cloud (of size over 500 microns).
- **Sleet** – snow and rain falling together or snow melting as it falls.
- **Showers** – solid or liquid precipitation from a convection (as opposed to layer) cloud.
- **Squally showers** – a squall is defined as 'a sudden increase in wind by at least 8 metres per second'. For Beaufort scale reports this is taken to be 'A sudden increase of wind by at least 3 Beaufort scale levels, rising to force 6 or more and lasting for at least one minute.
- **Drizzle** – liquid precipitation from layer cloud (of size up to 500 microns).
- **Freezing rain** – liquid precipitation that freezes on contact with a very cold surface.
- **Hail showers** – hail is defined as solid precipitation in the form of balls of ice falling from convective clouds.

Terms which describe the visibility

- **Good** – visibility more than 5 nautical miles
- **Moderate** – visibility between 2 and 5 nautical miles
- **Poor** – visibility between 1,000 metres and 2 nautical miles
- **Fog** – visibility less than 1,000 metres
- **Fog patches** – less than 40% sea area coverage.
- **Fog banks** – 40 to 50% sea area coverage.
- **Extensive Fog** – more than 50% sea area coverage.

If no visibility is specified it is assumed to be good. In the absence of precipitation and when the visibility includes 'fog patches' or 'fog banks' then the weather should be 'fair'. No separate weather should be given in the case of extensive fog. Two adjacent visibilities may be used in combination and the word becoming used to describe special variations (only one use of 'becoming' is allowed).

Terms which describe superstructure icing

- **Icing**

The icing section consists of the term 'icing' preceded by 'light', 'moderate' or 'severe'. Superstructure icing is a function of not only wind speed and air temperature, but of water (sea) surface temperature.

Accretion rate definitions (from Handbook of weather forecasting table 2.19):

Degree of icing	Accumulation (cm per 24 hours)
Light	1 to 3
Moderate	4 to 6
Severe	7 to 14
Very Severe	>14

Table 4. Icing accumulations.

Movement of Pressure Systems

- **Slowly** – Moving at less than 15 knots
- **Steadily** – Moving at 15 to 25 knots
- **Rather quickly** – Moving at 25 to 35 knots
- **Rapidly** – Moving at 35 to 45 knots
- **Very rapidly** – Moving at more than 45 knots

Pressure tendency in station reports

- **Rising (or falling) slowly** – Pressure change of 0.1 to 1.5 hPa in the preceding three hours
- **Rising (or falling)** – Pressure change of 1.6 to 3.5 hPa in the preceding three hours
- **Rising (or falling) quickly** – Pressure change of 3.6 to 6.0 hPa in the preceding three hours
- **Rising (or falling) very rapidly** – Pressure change of more than 6.0 hPa in the preceding three hours
- **Now rising (or falling)** – Pressure has been falling (rising) or steady in the preceding three hours, but at the time of observation was definitely rising (falling)

Note: For those more familiar with the millibar, 1 hPa = 1 mb

Sea States

Beaufort Force	Description in Forecast	Sea State	Probable Height of Waves* (Open Sea) /metres
0	Calm	Calm	0.0
1	Light	Calm	0.1 (0.1)
2	Light	Smooth	0.2 (0.3)
3	Light	Smooth	0.6 (1.0)
4	Moderate	Slight	1.0 (1.5)
5	Fresh	Moderate	2.0 (2.5)
6	Strong	Rough	3.0 (4.0)
7	Strong	Very Rough	4.0 (5.5)
8	Gale	High	5.5 (7.5)
9	Severe Gale	Very High	7.0 (10.0)
10	Storm	Very High	9.0 (12.5)
11	Violent Storm	Phenomenal	11.5 (16.0)
12	Hurricane Force	Phenomenal	14.0 (-)

* Note: These columns are a guide to show roughly what may be expected in the open sea, remote from land. Figures in brackets indicate the probable maximum height of waves. In enclosed waters, or when near land with an offshore wind, wave heights will be smaller and the waves steeper.

Table 5. Sea states.

Music of the Shipping Forecast

The music played before the Shipping Forecast is 'Sailing By' composed by Ronald Binge. Unfortunately, this is not available commercially. However, a similar recording, featuring the late Ronnie Aldrich on the piano, has been issued by: Seaward Records Ltd, Strathallan Castle, Port St Mary, Isle of Man.

The tune is also available on a CD, 'The Music of Ronald Binge', from Marco Polo Records, number 8.223515.

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