

## CHAPTER 23

### SERVICES FOR MARINE EMERGENCIES

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## CHAPTER 23

### SERVICES FOR MARINE EMERGENCIES

#### 23.1 Introduction

23.1.1 This chapter is concerned with the actions to be taken in the event of a marine emergency. These include coastal flooding (sections 23.2 and 23.3), offshore emergencies (section 23.4), and marine pollution (section 23.5).

23.1.2 Meteorological support in the event of marine search and rescue operations is provided by (DS) stations and procedures are described in detail in the military version of Met.O.544 (chapter 7).

#### 23.2 Coastal flooding — background and responsibilities

23.2.1 Responsibility for all matters concerning flooding rests with the National Rivers Authority regions, working under the aegis of MAFF.

23.2.2 The disastrous east coast floods in January 1953 were caused by a storm surge, i.e. a modulation of the normal (astronomical) tide level as a result of wind stress and variations in atmospheric pressure. On the recommendation of a subsequent Parliamentary Commission it was decided to set up a permanent organization, the Storm Tide Warning Service, to give timely warning of similar events on the east coast. Subsequent events have led to the expansion of the service to provide cover for the west and south coasts, areas for which surge forecasting is more difficult. Events during the winter of 1989/90, and in particular at Towyn on the north coast of Wales, have led to an increase in the responsibilities placed upon the NRA regions. This in turn has resulted in a requirement for the west and south coast warning system to be upgraded to a standard approaching that provided for the east.

23.2.3 A numerical surge-forecasting model was developed by the Proudman Oceanographic Laboratory (POL) to provide information about water levels for the whole of the UK coastline. This model, driven by the limited-area model is run routinely at Bracknell during the STWS operational season. Appropriate surge-forecast data from the model, together with appropriate offshore wave forecast data from the wave model, are passed on a routine daily basis to all NRA regions. Empirical techniques are available to supplement the surge model product on the east coast. Attempts by various researchers to produce empirical techniques for the west coast have not met with success.

#### 23.3 Storm tide warning service

23.3.1 The STWS is run by the Office on behalf of MAFF. It is part of the CF Division and located within CFO and, for operational purposes, comes under the authority of the Chief Forecaster. The prime function of STWS is to provide a primary warning service designed to activate the secondary, local warning services operated by the NRA regions.

23.3.2 The service operates throughout the winter part of the year from 1st September to 30th April. The season may be extended by a few weeks in years when sufficiently large spring tides occur in August or May. An STWS officer is continuously on duty during the operational season. During the summer the section is manned at a lower level. Although not required during the summer for STWS purposes the surge model may continue to be run on COSMOS in support of commercial customers. The capability exists throughout the year to run *ad hoc* surge-model forecasts on a workstation.

23.3.3 The STWS duty officer is able to monitor the tidal situation by means of observations from a network of some 40 tide-gauges located around the coast of the United Kingdom.

23.3.4 The primary warnings for the east coast are issued by telex to the NRA regions, Police and HMCG. These warnings are in the form of alert/alert confirmed/danger messages. The NRA employs a colour-coded system for their local warnings, e.g. yellow — flooding possible, amber — flooding likely, red — serious flooding likely. These colour-coded warnings from the NRA are used for both fluvial and tidal flooding.

23.3.5 The west and south coast NRA regions are sent an "attention drawn" message whenever the combination of surge-model forecast, wave forecast and predicted tide are considered to pose a threat. These messages call their attention to the wave and surge forecasts that have been passed earlier by fax.



23.3.6 Some small areas of the Scottish coast are liable to coastal flooding and arrangements are in place to supply routine surge-model forecasts to relevant River Purification Boards.

23.3.7 Direct mention, except at the request of the NRA or Police, of a coastal flooding risk should be avoided in public services media forecasts. This restriction is intended to prevent the warning network, which operates on a "cascade" system being overloaded by upwards enquiries. It may be appropriate, at times when onshore gales are forecast to coincide with spring tides to mention the coincidence.

23.3.8 Several WCs have contracts to provide onshore gale and similar coastal flood-related warnings to NRA regions. STWS should be included as an information addressee on these warnings.

23.3.9 NRA regions and the Police should be advised that if they wish to discuss the warnings they should do so directly with the STWS duty officer at Bracknell, but outstations may, on request, provide them with relevant wind information. Responsibilities of the PS offices for the NRA and Police are set out in Annex B to chapter 1, and services to the NRA regions are further discussed in chapter 20.

23.3.10 Outstation staff must not discuss STWS warning messages with anyone; callers making enquiries about warnings or the possibility of warnings should be referred to the Police or the NRA. Outstations which provide commercial services based on surge forecast data remain free to conduct appropriate discussions with those customers.

#### **23.4 Meteorological advice for offshore emergencies**

23.4.1 Search and rescue operations Search and rescue operations during offshore emergencies are coordinated by the Rescue Coordination Centres (RCCs) at Edinburgh and Plymouth. Meteorological support for these operations is provided by M Met O Leuchars (for RCC Edinburgh) and M Met O Brize Norton (for RCC Plymouth). Full details are given in Met.O.544 (part 2 — military), chapter 7.

23.4.2 In the event of a disaster affecting an offshore installation, a request from an operator for weather information and advice may be requested from, for example, Aberdeen WC. These requests may be handled only by Aberdeen or Norwich WCs who will keep CFO informed. Requests received at any other PS office will be passed to CFO for action, as will requests relating to other offshore disasters (e.g. involving ships) by all PS offices including Aberdeen WC. The CFO Chief Forecaster will then decide after consulting the Senior Forecaster at Aberdeen WC as necessary, whether the necessary forecasts will be provided by CFO or by Aberdeen WC. Whichever office provides the service will copy the information to the other to ensure consistency of advice.

23.4.3 Forecasts supplied for offshore emergencies will normally cease 24 hours after the time of the initial request, but if an oil spill is involved it may become a matter of marine pollution to be dealt with under sections 23.6 or 23.7.

#### **23.5 Marine pollution — background and responsibilities**

23.5.1 In this context marine pollution normally refers to the accidental spillage of oil onto the sea surface. Responsibilities are dependent on whether such spillages are more than or less than one mile offshore.

23.5.2 Oil slicks more than 1 mile offshore For oil slicks which are more than one mile offshore responsibility rests with the DTp acting through the Marine Pollution Control Unit (MPCU) with headquarters collocated with that of HMCG at Southampton. The MPCU, through its Marine Emergency Information Room coordinates any counter-pollution measures. HMCG has delegated authority to act promptly on behalf of MPCU in taking planned counter-pollution measures.

23.5.3 Oil slicks within one mile of the coast In the case of oil slicks within one mile of the coast responsibility for action is vested in local authorities which are organized on the county basis under the DOE.

23.5.4 Reports of oil slicks at sea are passed to the MPCU and to the appropriate local authorities by either:

- a. HMCG
  - b. RAF Rescue Coordination Centres at Plymouth and Edinburgh. The division of responsibilities is at 52° 30'N (see Annex A).
- or
- c. Fleet Weather and Oceanographic Centre (FWOC) Northwood.



23.5.5 The MPCU or local authorities may request assistance from the Armed Forces in reporting, surveillance and perhaps clearance of oil at sea. The two RCCs co-ordinate military assistance in these matters.

23.5.6 The movement of an oil slick is controlled by tides and currents as well as by winds and is thus not a purely meteorological matter. The MPCU and HMCG are responsible for estimating the movement of oil slicks, meteorological advice being given to them by CFO. However the Royal Navy (RN) may also become involved in predicting oil slick movement and will receive meteorological advice from FWOC at Northwood. There is thus a clear need for close liaison between CFO and FWOC. It is essential that CFO and FWOC exchange details of forecasts issued.

23.5.7 Where tankers, oil storage facilities, rigs or platforms are involved in the spillage of oil there may be a request for meteorological advice from representatives of the tanker operators. In these circumstances requests will normally be directed to Aberdeen WC or the PS offices at Sella Ness or Kirkwall who should provide services on a repayment basis. The PS office forecaster should liaise with CFO (shipping forecaster) to ensure consistency of response. Aberdeen Weather Centre has a contract to supply data to the Institute of Offshore Engineering on such occasions.

### **23.6 Meteorological advice concerning pollution offshore (>1 mile)**

23.6.1 By arrangement with DTp, whenever a weather forecast may be required in connection with oil pollution, the MPCU or HMCG will contact CFO by telephone or telex giving the following information:

- a. Date and time of spillage of oil.
- b. Latest position of oil slick in latitude and longitude or as a true bearing and distance from a well known coastal landmark, and
- c. Name and telephone or telex number of authority to whom forecasts should be sent.

23.6.2 On receipt of a request from MPCU or HMCG, CFO will prepare a 12-hour forecast of wind speed and direction, weather, visibility and state of sea (wave and swell height) for the area concerned, starting from the notified time of spill, plus an outlook for a further 12 hours. Further forecasts will then be issued at 6-hourly intervals until the threat is over.

23.6.3 All forecasts will be issued without delay to the nominated authority (see paragraph 23.6.1c) and to the FWOC at Northwood. Information copies should also be sent on MCCA for broadcast to WCs that may become involved in giving advice to local authorities.

23.6.4 If FWOC Northwood are requested by the Royal Navy to give independent advice for RN units involved in surveillance or clearance operations, the duty forecaster at FWOC will notify CFO of their involvement and arrange for routine telephone conferences between FWOC and CFO so that all advice given is consistent as far as possible.

23.6.5 The Warren Spring Laboratory may be asked by MPCU to run an oil spill model for them. In this circumstance the WSL may ring CFO for forecasts for the area of the incident. They should be provided with the same forecasts as are supplied to the MPCU.

### **23.7 Meteorological advice concerning inshore pollution (1 mile)**

23.7.1 Local authorities whose beaches are threatened may contact their normal PS outstation (see Annex B to chapter 1) for meteorological advice as needed. Forecasts similar to those described in paragraph 23.6.2, but for the stretch of water within 1 mile of the coast only, will then be prepared and passed to the local authority. CFO must be informed of this involvement. All forecasts issued must be consistent with any offshore forecasts issued by CFO on response to DTp requests and copied on MCCA.

23.7.2 Any enquiries from local authorities or anyone else seeking information about the position or movement of an oil slick should be directed to the appropriate MRCC (see Annex C to chapter 18).

23.7.3 WCs with responsibilities for coastal pollution should liaise with relevant County Emergency Planning Officers or equivalent to ensure that contact is made at the appropriate time.

23.7.4 No charges should be raised for information provided to the responsible authority in an emergency.



**AREAS OF RESPONSIBILITY OF RESCUE CO-ORDINATION CENTRES (RCC) AND  
CORRESPONDING SEARCH AND RESCUE REGIONS (SRR)**

