

AERIAL SURVEILLANCE

CO-OPERATION ON AERIAL SURVEILLANCE OVER THE NORTH SEA AREA¹

4.1 Introduction

4.1.1 The purpose of airborne surveillance is to detect spillages of oil and other harmful substances that can threaten the marine environment of the North Sea Area. The spillages caused by accident, or made in contravention of international conventions will be recorded, taking due account of visual observation, aerial photographs and remote sensing data. Where possible, samples will be taken both from the sea surface and on board the suspected offender.

4.1.2 Within the framework of the Bonn Agreement it has been decided to establish close co-operation on airborne surveillance. This will be achieved by:

- a. co-ordination of the national flight plans carried out by the Contracting Parties themselves;
- b. co-operation in areas of mutual interest, e.g. by means of Coordinated Extended Pollution Control Operations (CEPCO);
- c. setting up special flights, such as Tour d'Horizon, Joint Flights and Aerial Surveillance Exercises;
- d. standardisation of reporting formats and exchange of information to Contracting Parties;
- e. working together in improving existing systems and develop new techniques to enhance the information obtained;
- f. the provisions of the Bonn Agreement Oil Appearance Code (BAOAC) and connected guidelines for its use.

4.1.3 The Contracting Parties to the Bonn Agreement have agreed to participate in the collaboration to the best of their ability.

4.1.4 The surveillance is co-ordinated in accordance with the decisions of the North Sea Conferences and provisions of sub-regional plans in order to make it more efficient and to make better use of the resources.

4.1.5 It is agreed that this cooperation scheme applies only to the international waters of the North Sea.

4.2 Co-ordination

4.2.1 In their regular meetings the Contracting Parties appoint one Contracting Party to be lead country for an agreed period. The lead country prepares the annual programme and updates the Aerial Surveillance Handbook (ASH) accordingly. The ASH contains general information, national waypoints, Tour d'Horizon scheme, special flights, reporting formats and surveillance results assessment. It also contains, as Annexes, the maps showing navigation points and routings, both regional and international.

4.2.2 The ASH will be issued to Contracting Parties by the lead country. It should be read in conjunction with this chapter. The ASH is designed to be used for the day-to-day management of airborne surveillance and as a ready reference for air crew. A lead country collects the data of the various flights executed in a particular year and makes an annual report.

¹ The North Sea Area covers the North Sea, the English Channel, the waters around Ireland and parts of the Western Approaches and the Norwegian Sea.

4.3 Operational Flights

4.3.1 National flights

National flights are carried out by Contracting Parties over their own territorial waters and over other waters under their jurisdiction.

4.3.2 Regional flights

Parties involved in a bi- or multilateral agreement (e.g. Memorandum of Understanding) carry out flights on a regular basis over an area of mutual interest.

4.3.3 Tour d'Horizon

All Contracting Parties agreed on performing a flight mainly along the offshore installations, of at least 600 nautical miles. The aircraft crew will concentrate on all detectable pollutions from various sources. Roughly the area between 52° north and 63° north is to be surveilled. These flights are carried out according to an agreed yearly scheme. The responsible party is entitled to inform the others on times and routing the day before departure and on changes in the prepared schedule.

A Tour d'Horizon flight will be performed under suitable weather conditions.

4.3.4 Coordinated Extended Pollution Control Operations (CEPCOs)

A CEPCO operation can be defined as a continuous sequence of aerial surveillance flights supported by sea-borne assistance - and where possible also with data from satellite observations - to ensure a permanent presence (e.g. over a period of 24 hours) in a sea area with high shipping intensity. This high level of deployment of means is only possible when several (neighbouring) Contracting Parties cooperate intensively to ensure continuity and optimal coordination of the surveillance activities. The aims of the operation are, *inter alia*:

- (i) to enhance the enforcement of discharge provisions at sea;
- (ii) to increase the deterrent effect of aerial surveillance efforts;
- (iii) to improve the cooperation between the participating authorities.

4.4 Aerial Surveillance Exercises

4.4.1 Each year exercises are organised by authorities of several countries within the Bonn Agreement or the European Community (EC). Participation in these field trials has a bearing on the national and Bonn Agreement flight schedules. Contracting Parties agree to participate in an Aerial Surveillance Exercise organised by one of the countries (not necessarily the lead country) once a year. A participant in exercises will prepare a report to make information gathered available to the organising authority. The organising authority will report to the OTSOPA meeting.

4.4.2 The Aerial Surveillance Exercise normally consists of:

- a. field trials, using limited quantities of oil;
- b. special substances to study the detectability by means of remote sensing;
- c. evaluation of the data recorded during the exercise;
- d. a workshop for the exchange of information and discussions of new improvements or developments on remote sensing equipment;
- e. evaluation of the exercise by an Exercise Evaluation Team.

4.4.3 All participants forward conclusive reports with data analysis to the lead country.

4.5 Reporting and Reporting Formats

Detected/observed pollution which warrants combating action are to be reported immediately by radio to the appropriate focal point. These reports are to be followed up by documented reports using the recognised Bonn Agreement formats and any supporting documentation and data considered relevant. Such follow-up reports are to be made direct to the appropriate administrative authority and could include any of the following:

- Standard Pollution Observation / Detection Log and Completion Guide (Annex 1)
- Pollution Observation / Detection Report on Polluters and Combatable Spills (Annex 2)
- Standard Algae Observation / Detection Log (Annex 3)

Data from all surveillance flights should be reported to the lead country in accordance with the agreed procedure.

4.6 Flight Operation

The flights will be carried out under normal civil aviation regulations of the State concerned. The territories of other countries will not be infringed, unless necessary permissions have been obtained. Special attention will be given to the restrictions on radio and high frequency transmissions in the vicinity of offshore activities.

4.7 Flight Planning

Flight planning will be drafted under the responsibility of administrative authorities in the respective countries, which are to be identified as follows:

Belgium	Management Unit of the North Sea (MUMM)
Denmark	Admiral Danish Fleet
Federal Republic of Germany	Central Command for Maritime Emergencies (CCME)
France	French Customs
Ireland	Irish Coast Guard
Netherlands	Netherlands Coast Guard Centre (KUWA)
Norway	Norwegian Coastal Administration
Sweden	Coast Guard Headquarters (CGHQ)
United Kingdom	Maritime and Coastguard Agency (MCA)

4.8 Regional Plans

Plans for bi- or multilateral agreements for collaboration on aerial surveillance will be elaborated by the Contracting Parties. The agreement will cover areas where co-operation is practical and suitable and based on mutual interest.

4.9 Communication

Operational communications between aircraft, ships and centres will increase the mutual exchange of information on observed pollutions and identified suspected polluters. Aircraft and/or ships deployed by responsible authorities are expected to establish contact with a suspected offender and to forward the obtained information to the focal point of a country.

Annex 1

HELCOM BONN AGREEMENT STANDARD POLLUTION OBSERVATION / DETECTION LOG NO POLLUTION DETECTED

REPORTING AUTHORITY	AIRCRAFT REG	MISSION No	CAPTAIN	CO PILOT	OPERATOR	OBSERVER	DAY	DATE	MONTH	YEAR

FLIGHT TYPE	ROUTE / AREA	TIME OVER THE SEA DAY		TIME OVER THE SEA NIGHT		TOTAL TIME OVER THE SEA	
		hrs	mins	hrs	mins	hrs	mins

No	AREA CODE	TIME UTC	POSITION		DIMENSIONS		AREA COVER %	OILED AREA Km ²	OIL APPEARANCE COVERAGE (PERCENTAGE - %)						MINIMUM VOLUME m ³	MAXIMUM VOLUME m ³	COMBAT Y / N
			LATITUDE 'NORTH'	LONGITUDE 'EAST/WEST'	LENGTH Km	WIDTH Km			1	2	3	4	5	Oth			

No	POLL TYPE	DETECTION						PHOTO Y / N	VIDEO Y / N	FLIR Y / N	WEATHER					REMARKS	
		SLAR	IR	UV	VIS	MW	LF				WIND	CLOUD	VIS	SEA	Wx		

No	REMARKS	OIL APPEARANCE TABLE			
		No	OIL APPEARANCE DESCRIPTION	MINIMUM VOLUME m ³ / km ²	MAXIMUM VOLUME m ³ / km ²
		1	SHEEN	0.04	0.30
		2	RAINBOW	0.30	5.00
		3	METALLIC	5.00	50.0
		4	DISCONTINUOUS TRUE COLOUR	50.0	200
		5	TRUE COLOUR	200	>200

STANDARD POLLUTION OBSERVATION LOG COMPLETION GUIDE

HELCOM:	Tick HELCOM Box if the flight is in HELCOM Area
BONN AGREEMENT:	Tick BONN AGREEMENT Box if flight is in Bonn Agreement Area
NO POLLUTION DETECTED:	Tick NO POLLUTION DETECTED if no pollution is detected
REPORTING AUTHORITY:	National Authority Responsible for Pollution Control.
AIRCRAFT REG:	Aircraft Registration Letters / Numbers.
MISSION No:	Nationally Assigned Mission Number.
FLIGHT TYPE:	National Designation for Flight Type as follows: NAT - National REG - Regional EXER - Exercises OPS - Operational Flight. RIG - Oil Rig Patrol SHIP - Shipping Patrol TDH - Tour de Horizon Flight CEPCO - Co-ordinated Extended Pollution Control Operation
CAPTAIN OF AIRCRAFT:	Name of Captain
CO PILOT:	Name of Co Pilot
OPERATOR:	Name of Operator
OBSERVER:	Name of Observer
DAY:	Number Assigned to the Day of the Week as follows: Monday - 01 Tuesday - 02 Wednesday - 03 Thursday - 04 Friday - 05 Saturday - 06 Sunday - 07
DATE/MONTH/YEAR:	Two number designation for each of date/month/year of Flight
ROUTE / AREA:	Flight Route or Area
TIME OVER THE SEA – DAY:	Time over the Sea during Daylight
TIME OVER THE SEA – NIGHT:	Time over the Sea at Night

TOTAL TIME OVER SEA:	Total time between Coasting Out and Coasting In.
No:	Number allocated to pollution detection.
AREA CODE:	The international telephone code for the country (Area) in which the pollution is located:
	Bonn Agreement
	Belgium 32 Denmark (+ Helcom) 45
	France 33 Germany (+ Helcom) 49
	Netherlands 31 Norway 47
	Sweden (+ Helcom) 46 United Kingdom 44
	Helcom
	Estonia 372 Finland 358
	Latvia 371 Lithuania 370
	Poland 48 Russia 7
TIME UTC:	Time of pollution detection.
POSITION:	Latitude and longitude of pollution (degrees, minutes and seconds // WGS / 84 Datum).
DIMENSIONS:	Length and width of pollution in kilometres.
AREA COVER %:	Observer's assessment of the percentage of the boxed dimensioned area (length x width), covered with pollution.
OILED AREA:	Oiled Area covered with pollution; calculated by multiplying length, width and cover % Example: <u>Length x Width x Cover %</u> 2 Km x 1 Km x 50%, gives [2.0] x [1.0] x [0.5] = Oiled Area = 1 Km ²
OIL APPEARANCE COVERAGE %:	Allocation of Percentage of the `Oiled Area' to the Appearance of the pollution. Example: 1/2 cover – Rainbow - Column 2 = 50% 1/4 cover - Metallic - Column 3 = 25% 1/4 cover - True Colour - Column 5 = 25%
MINIMUM VOLUME:	Minimum Quantity of Oil Pollution in cubic metres. Calculated as follows:

[Oiled Area] x [Appearance Code Minimum Thickness Value] X [Decimal Percentage of Appearance].

$$[1 \text{ Km}^2] \times [0.3 \text{ m}^3/\text{km}^2] \times [0.50] = 0.15 \text{ m}^3$$

$$[1 \text{ Km}^2] \times [5.0 \text{ m}^3/\text{km}^2] \times [0.25] = 1.25 \text{ m}^3$$

$$[1 \text{ Km}^2] \times [200 \text{ m}^3/\text{km}^2] \times [0.25] = 50 \text{ m}^3$$

$$\text{Minimum Total Quantity} = [0.15] + [1.25] + [50] = 51.4 \text{ m}^3$$

MAXIMUM VOLUME:

Maximum Quantity of Oil Pollution in cubic metres.

Calculated as follows:

[Oiled Area] x [Appearance Code Maximum Thickness Value]

X [Decimal Percentage of Appearance].

$$[1 \text{ Km}^2] \times [5.0 \text{ m}^3/\text{km}^2] \times [0.50] = 2.5 \text{ m}^3$$

$$[1 \text{ Km}^2] \times [50 \text{ m}^3/\text{km}^2] \times [0.25] = 12.5 \text{ m}^3$$

$$[1 \text{ Km}^2] \times [>200 \text{ m}^3/\text{km}^2] \times [0.25] = > 50 \text{ m}^3$$

$$\text{Maximum Total Quantity} = [2.5] + [12.5] + [>50] = > 65 \text{ m}^3$$

No:

The same number as previously allocated to the pollution detection.

POLLUTION TYPE:

Pollution Type as follows:

OIL - Oil

CHEM - Chemical

FISH - Fish Oil or Waste

VEG - Vegetable Oil or Waste

OTH - Other (Amplify in Remarks)

UNK - Unknown

Note: For Algae Detection, use the Algae Observation Log.

DETECTION:

Detection Sensor.

SLAR - Radar

UV - Ultra Violet

IR - Infrared

VIS - Visual

MW - Microwave

LF - Laser Fluorosensor

PHOTO:	Photographs of pollution
VIDEO	Video of the pollution
FLIR	Forward Looking Infrared of the pollution
WEATHER:	Weather at the time of pollution observation / detection
	Surface Wind: Direction and Speed (knots or beaufort as required by national authorities),
	Cloud: Coverage in Octas or aviation description (scattered / overcast) and Base in feet,
	Visibility: Nautical Miles or Kilometres
	Sea State: Using the description code given in the Abbreviations
	Weather: Rain, Snow, Haze, Mist etc
REMARKS:	Any Amplifying Remarks.

Note: For all Detections / Observations Boxes write:

'Y' Sensor used and pollution detected

'N' Sensor used but pollution not detected

'-' Sensor was not used or not available

POLLUTION OBSERVATION / DETECTION REPORT ON POLLUTERS AND COMBATABLE SPILLS (IMO)

1. REPORTER:
 - a. Reporting State: :
 - b. Observer (Organization/Aircraft/Platform) : Call Sign.....
 - c. Observer(s)(Family Name(s)) : 1.....2.....

2. DATE AND TIME:
 - a. Date (yymmdd) b. Time of Observation (UTC) : Date..... Time.....UTC

3. LOCATION OF THE POLLUTION:
 - a. Position of the Pollution (Lat/Long) : Begin.....N,W/E
: End.....N,W/E
 - b. Inside/Outside Territorial Waters : Inside Outside

4. DESCRIPTION OF THE POLLUTION:
 - a. Type of Substance Discharged :
 - b. Estimated Quantity :m³
 - c. Length (km) d. Width (km) e. Coverage (%) : Length.....km Width.....km Coverage....%
 - f. Oiled Area (km²) : Oiled Area.....(km²)
 - g. Percentage of Oiled Area by Appearance (%)

1:.....%	4:.....%
1=Sheen 2=Rainbow 3=Metallic	5:.....%
4=Discontinuous True Colour 5=True Colour	3:.....%
	Other:.....%

5. METHOD OF DETECTION AND INVESTIGATION:
 - a. Detection (Visual, SLAR, IR, UV, Video, MW LFS, Identification Camera, Other) : Visual SLAR IR UV Video MW,
 LFS Video Ident.Cam Other
 - b. Discharge Observed c. Photographs Taken : Observed: Yes / No Photos Yes / No
 - d. Samples Taken e. Need of Combating : Samples: Yes / No Combat: Yes / No
 - f. Other Ships/Platforms in Vicinity (Names) :

6. WEATHER AND SEA CONDITIONS:
 - a. Wind Direction b. Wind Force c. Visibility : Direction.....Degrees Force.....Bft/Kts Vis.....kms
 - d. Cloud Coverage e. Wave Height : Cloud.....Octa Wave Ht.....m
 - f. Current Direction : Current Direction.....Degrees

OBSERVATION OF A DISCHARGE OF HARMFUL SUBSTANCES BY A SHIP UNDER ARTICLE 6(3) OF MARPOL 73/78

7. SHIP INVOLVED:
 - a. Name :
 - b. Callsign c. Flag State : Callsign:..... Flag State:.....
 - d. Home Port :
 - e. Type of Ship :
 - f. Position (Lat/Long) :N,W/EUTC
:N,W/EUTC
 - g. Heading h. Speed : Heading.....Degrees Speed.....kts
 - i. Colour of the Hull :
 - j. Colour of the Funnel and Funnel Mark :
 - k. Colour / Description of Superstructure :
 - l. Vessels IMO Number :

8. INFORMATION BY RADIO CONTACT:
 - a. Radio Contact b. Means of Communication : Contact: Yes / No Means VHF / Teleph,Ch / Freq
 - c. Last Port of Call :
 - d. Cargo e. Last Cargo :
 - f. Next Port of Call, ETA (yymmdd) :ETA.....
 - e. Statements of Captain/Officer on Duty :

