Bonn Agreement
Accord de Bonn

Bonn Agreement Aerial Surveillance Programme

Annual report on aerial surveillance for 2009

CONTENTS

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Introduction

1. The eight countries bordering the North Sea which work together within the Bonn Agreement undertake aerial surveillance using specially equipped aircraft and specialised personnel to detect spills of oil and other harmful substances and enforce international environmental regulations[1].

2. The North West European Waters – the main part of which is formed by the North Sea – have been declared a Special Area by the International Maritime Organization for the purpose of MARPOL Annex I (Oil). This took effect on 1 August 1999, from which date the discharge of all oily wastes at sea in the Special Area is prohibited. This report demonstrates the effectiveness of co-operation in aerial surveillance among North Sea countries and their collective effort to detect marine pollution.

3. This report presents the results of aerial surveillance operations undertaken as a collective effort under the Bonn Agreement. In addition to national flights carried out under the Bonn Agreement in their own parts of the maritime area (the objectives of these are described in Annex 3) and other aerial surveillance undertaken for national purposes, the Bonn Agreement countries also co-ordinate flights of the following types:

   a. *Tour d'Horizon* (TdH) flights - monthly flights carried out by countries in turn to survey the offshore area of the North Sea where offshore oil and gas activities take place (seven Contracting Parties participated in 2009);

   b. *Co-ordinated Extended Pollution Control Operations* (CEPCO), where some neighbouring countries co-operate to survey intensively an area with high traffic density during a relatively short period (e.g. 24 hours). Contracting Parties may also decide to organise a so called "Super CEPCO" where Bonn Agreement Contracting Parties, often together with countries from neighbouring regions, cooperate in the surveillance of a specific area over a period of up to 10 days.

4. This report compiles, in Tables 1 - 4, data for all the flight types undertaken for Bonn Agreement purposes. These Tables are based on data related to the number of flight hours, the number of spills and their estimated volume. This report differs from those for 2000-2002 in that the data on the number of oil spills was related in those reports to the geographical coverage of the surveillance by side-looking airborne radar (SLAR). Following the revision of the reporting format by BONN 2003, this is no longer the case. Definitions of some of the terms used in these tables are given in Annex 1. In the 2008 reporting round a draft revised reporting format has been used. The format was revised in coordination with the Helsinki Commission for the Baltic Sea area in order to harmonise reporting procedures under both regional agreements.

5. In 2009 a Super CEPCO was held in the HELCOM maritime area with participation from the following Bonn Agreement Contracting Parties: Denmark, Germany, the Netherlands and Sweden.

6. Details on the oil slicks identified during the Tour d'Horizon flights, including maps of the flight routes and location of oil slicks, and on the outcome of investigations by Government inspectors into those oil slicks are set out in Annex 2.

7. Annex 3 includes the following information about each Contracting Party:

   a. size of the Exclusive Economic Zone (EEZ) in km^2;

[1] Ireland joined the Bonn Agreement as a Contracting Party in April 2010 and is exploring options to participate in the Bonn Agreement aerial surveillance programmes.

b. any major traffic routes in the EEZ;

c. the number of any oil/gas rigs in the EEZ;

d. the existence of satellite programmes;

e. a short description of the objective of the flights.

8. A summary report on the EU-EMSA CleanSeaNet Service that supports Bonn Agreement Contracting Parties with satellite images is at Annex 4. The report presents CleanSeaNet data for the North Sea for the period 1 January 2009 – 31 December 2009.

Commentary

9. The results of the follow-up of "identified polluters" (see Tables 1 and 3) are not included in this report since it may take a year or more to obtain the outcome of court or administrative proceedings in the country responsible for such proceedings (acting as flag state, coastal state or port state). In cooperation with the North Sea Network of Investigators and Prosecutors (NSN) the Bonn Agreement has published the North Sea Manual on Maritime Oil Pollution Offences (2009) providing detailed information *inter alia* on the legal and organisational framework, national laws of North Sea states and technical and operational means of securing evidence (the Manual is available at: www.bonnagreement.org).

10. For most of the detections observed/confirmed as oil slicks, the source of the slick (i.e. the polluter) has not been identified. Most visible oil slicks, however, come from shipping and offshore installations.

11. This report includes estimates of the total amounts of oil discharged based on the aerial-surveillance data. These estimates use the Bonn Agreement Colour Code until 2003 and from 2004 use its replacement, the Bonn Agreement Oil Appearance Code. The Contracting Parties to the Bonn Agreement consider that the data currently available are too sparse and too diverse to allow reliable overall estimation or identification of trends of oil inputs, and that such estimates should be interpreted as indicative and not totally accurate. Joint aerial surveillance exercises are organised on a regular basis to harmonise measurement techniques and to improve the accuracy and comparability of the data e.g. with a view to analysing them statistically.

12. The quantities of oil discharged into the North Sea by the offshore industry are reported to the OSPAR Commission by the countries under whose jurisdiction offshore oil extraction takes place (the total quantity of oil discharged from the offshore oil and gas industry into the OSPAR maritime area through discharges and spillages of oil in 2007 was 13.600 tonnes). There are at present no equivalent reliable figures for the amount of oil input to the North Sea from land-based sources or from shipping.

13. In 2009 Contracting Parties reported estimated volumes for approximately 180 slicks in the Bonn Agreement area. Figure 1 shows the percentage of slicks subdivided into different size categories.

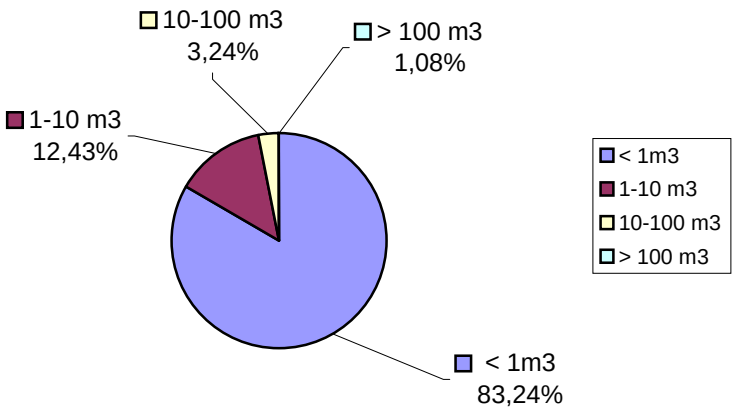


Figure 1: Percentage of slicks in size categories observed in the Bonn Agreement area in 2009

14. Two slicks of over 100m^3 were reported: one by Norway and one by UK. However, most slicks were in a size-category that did not warrant action to combat them, since they would evaporate, dissolve and disperse naturally.

15. An overview of the locations of slicks observed during 2009 is given in Figure 2 (Map). A common HELCOM / Bonn Agreement map, showing the location of oil spills observed by aerial surveillance and their estimated minimum volumes in the Baltic Sea and North Sea areas in 2009, is given in Figure 3. An overview of the major traffic routes in the Netherlands EEZ is given in Figure 4. When examining Figures 2, 3 and 4, the reader should take account of the following:

a. the density of ship traffic, and thus the associated likelihood of observing slicks, are highest in the traffic corridor along the south-eastern shore of the Bonn Agreement area;

b. Contracting Parties' flight hours reported in Table 1 are mostly spent surveying the national zones of interest, which in most cases correspond with the national EEZ or continental shelf areas. There are large differences in the sizes of these zones of interest and the respective total numbers of hours spent surveying them. This implies that the relative frequency with which areas are visited – and thus the potential density of the observations – varies significantly between Contracting Parties.

16. The format of the report's tables 1 – 5 was modified in 2000 and in 2003. The 2000 to 2002 data reflects the relation of the observation with SLAR coverage through the concept of 'BA flight hour' (i.e. one hour of airborne remote sensing over the sea at a standardised speed of 335 km per hour). As a result of this revision of the reporting format in 2000, the flight hour data up to 1999 are absolute numbers and from 2000 to 2002 the flight hour data are standardised on SLAR-coverage, i.e. corrected for relative aircraft speed. For the countries for which the average aircraft speed is significantly different from the standard speed (e.g. Belgium and UK), the data up to 1999 and from 2000 will not be comparable. As a result of a new revision of the reporting format in 2003, from 2003 onwards, the data are again absolute numbers.

Table 1. Summary of data relating to National Flights during 2009

Country	No. of flight hours			No. of detections inside own EEZ			Detections confirmed/observed as mineral oil spills			Satellite detections		Estimated volume M^3 (1)	No. of polluters				Remarks
	Daylight	Darkness	Sum	Daylight	Darkness	Sum	Daylight	Darkness	Overall	Detected	Confirmed		Rigs	Ships	Other/ Unknown	Total	
Belgium	147.18	22.17	169.35	14	1	15	8	1	9	5	0	5	0	2	7	9	(2) (3)
Denmark	168.00	73.00	241	90	24	114	32	1	33			40	12	2	19	33	
France	899	82	981	21	5	26	14	2	16			30		1	14	15	
Germany	650.55	277.45	928	22	13	35	16	13	29	46	4	1	1	1	27	29	(4)
Netherlands	583.3	274	857	114	44	158	30	1	31	119	7	95	6	17	0	23	
Norway	344	0	344	21	0	21	19	0	19	73	31	210	3	2	14	19	(5) (6)
Sweden	126	30	156	2	2	4	2	0	2	4		1	0	0	2	2	
UK	573.15	72.05	645.2	41	0	41	38	0	38	0	0	1,020	15	6	20	41	
Total	**3491.18**	**830.67**	**4321.85**	**325**	**89**	**414**	**159**	**18**	**177**	**247**	**42**	**1,325**	**37**	**31**	**103**	171	

(1) The data currently available do not allow reliable overall estimation of oil inputs. These estimates should therefore be interpreted as indicative and not totally accurate. They have therefore been rounded to the nearest 5 m^3 (the nearest 1 m^3 for estimated amounts below 5 m^3).
(2) Of the 13 detections in own EEZ: 5 are unknown; 1 was a chemical spill; 8 were confirmed as oil spills; 1 was mineral oil spill detected at night.
(3) The identified polluters were two cargo ships: one linked to a mineral oil pollution detected by day and another one to a mineral oil pollution -high probability- detected by night. In addition, during transit, take-off and landing procedures, 12 mineral oil pollutions were observed in the port of Antwerp and 4 mineral oil pollutions in the port of Ostend. The observations were reported to the Belgian Maritime Police for further investigation and follow-up.
(4) Two spills reported by Denmark
(5) MS "Full City" Oil spill, estimated 200m^3 - flights 2-3 missions pr day for 30 days - volume from these additional missions is not taken into reporting format (Sweden did 4-5 missions in this period).
(6) Fifteen satellite detections were not checked due to lack of resources. All satellite detections were within the Norwegian EEZ.

Table 2. Summary of data relating to Co-ordinated Extended Pollution Control Operations (CEPCO) flights during 2009

Country	No. of flights	No. of flight hours			No. of detections			Detections confirmed/ observed as mineral oil spills	Estimated volume m^3	No. of polluters			
		Daylight	Darkness	Sum	Daylight	Darkness	Sum			Rigs	Ships	Unknown	Total
Total		**26.6**	**6.08**	**32.68**	**6**	**0**	**6**	**3**	**0.279**	**0**	**0**	**3**	**3**

Table 3. Summary of data relating to Tour d'Horizon (TdH) flights during 2009

Country	No. of flights	No. of flight hours			No. of detections			No of detections identified as oil	Estimated volume m^3	No. of polluters				Remarks
		Daylight	Darkness	Sum	Daylight	Darkness	Sum			Rigs	Ships	Unknown	Total	
Belgium	5	18.67	0	18.67	6	0	6	4	0.01	3	2	1	6	(1)
Denmark	2	7.52	0	7.52	2	0	2	1	0.07	0	0	2	2	(2)
France	-													
Germany	5	14.5	0	14.5	1	0	1	1	0.07	1	0	0	1	
Netherlands	6	17.05	0	17.05	25	0	25	16	3.99	22	0	3	25	
Norway	3	8.41	0	8.41	0	0	0	0	0.00	0	0	0	0	
Sweden	3	11	0	11	1	0	1	1	0.03	1	0	0	1	
UK	2	8.3	0	8.3	0	0	0	0	0.00	0	0	0	0	
Total	**26**	**85.45**	**0**	**85.45**	**35**	**0**	**35**	**23**	**4**	**27**	**2**	**6**	**35**	

(1) Three oil rigs were linked to three mineral oil pollutions in respectively NO, UK and DK waters. No polluter was found for the second mineral oil pollution in DK waters. In addition two legal HNS discharges were linked to two tankers in Dutch waters.
(2) No polluter name observed.

Table 4. Distribution of the estimated sizes of confirmed/observed oil slicks

Country	Category I: < 1 m^3	Category II: 1 – 10 m^3	Category III: 10 – 100 m^3	Category IV: > 100m^3	Not quantified	Number of Slicks
Belgium	6	2				8
Denmark	55	4	1	0		60
France	10	5	1			16
Germany	7					7
Netherlands	25	3	2			30
Norway	14	4		1		19
Sweden	2					2
UK	30	5	2	1		38
Total	**149**	**23**	**6**	**2**	**0**	**180**

Figure 2: Overview of slicks observed during Bonn Agreement aerial surveillance activities during 2009

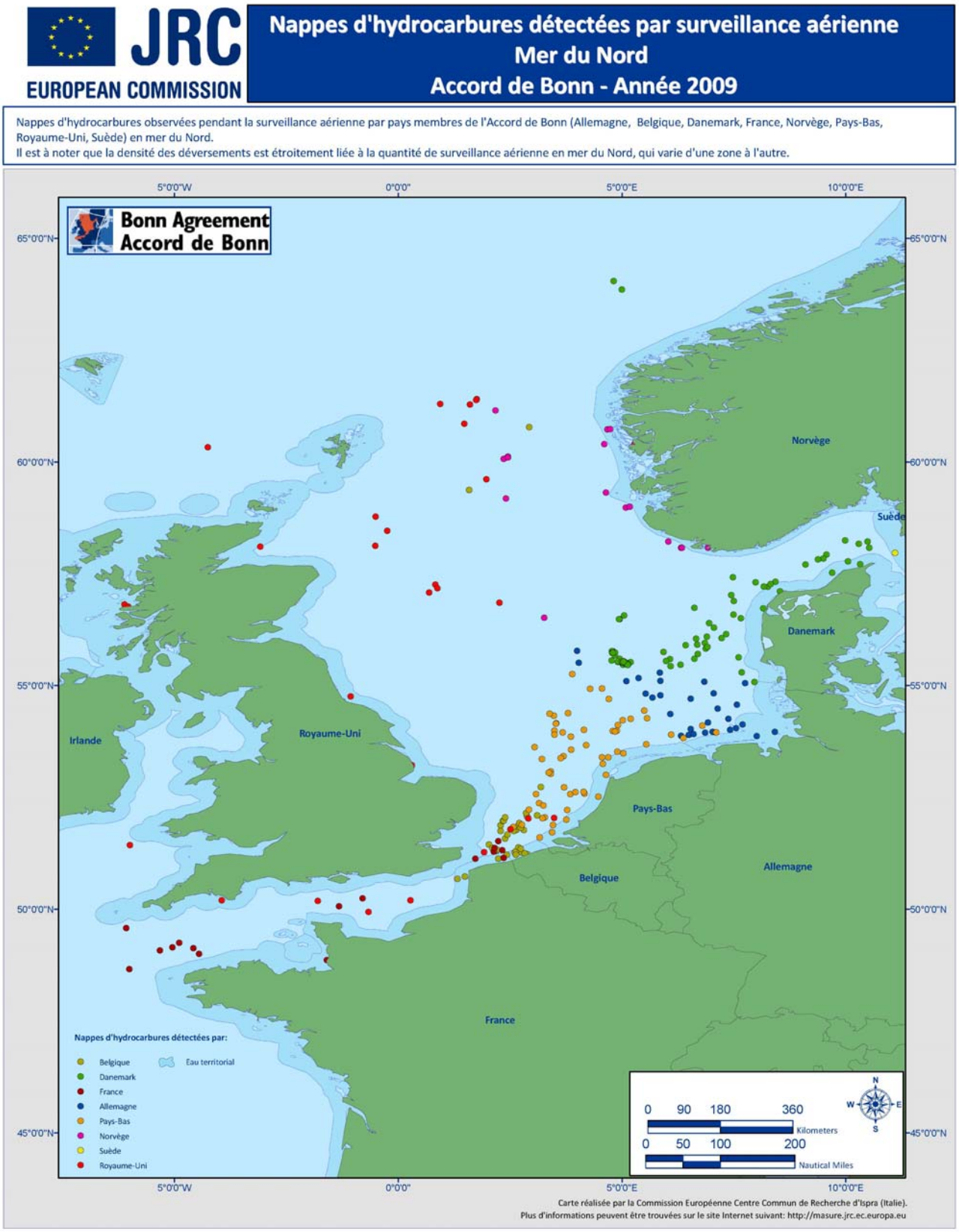


Figure 3: Common HELCOM / Bonn Agreement map showing the location of oil spills confirmed/observed by aerial surveillance within the Baltic Sea and North Sea areas in 2009

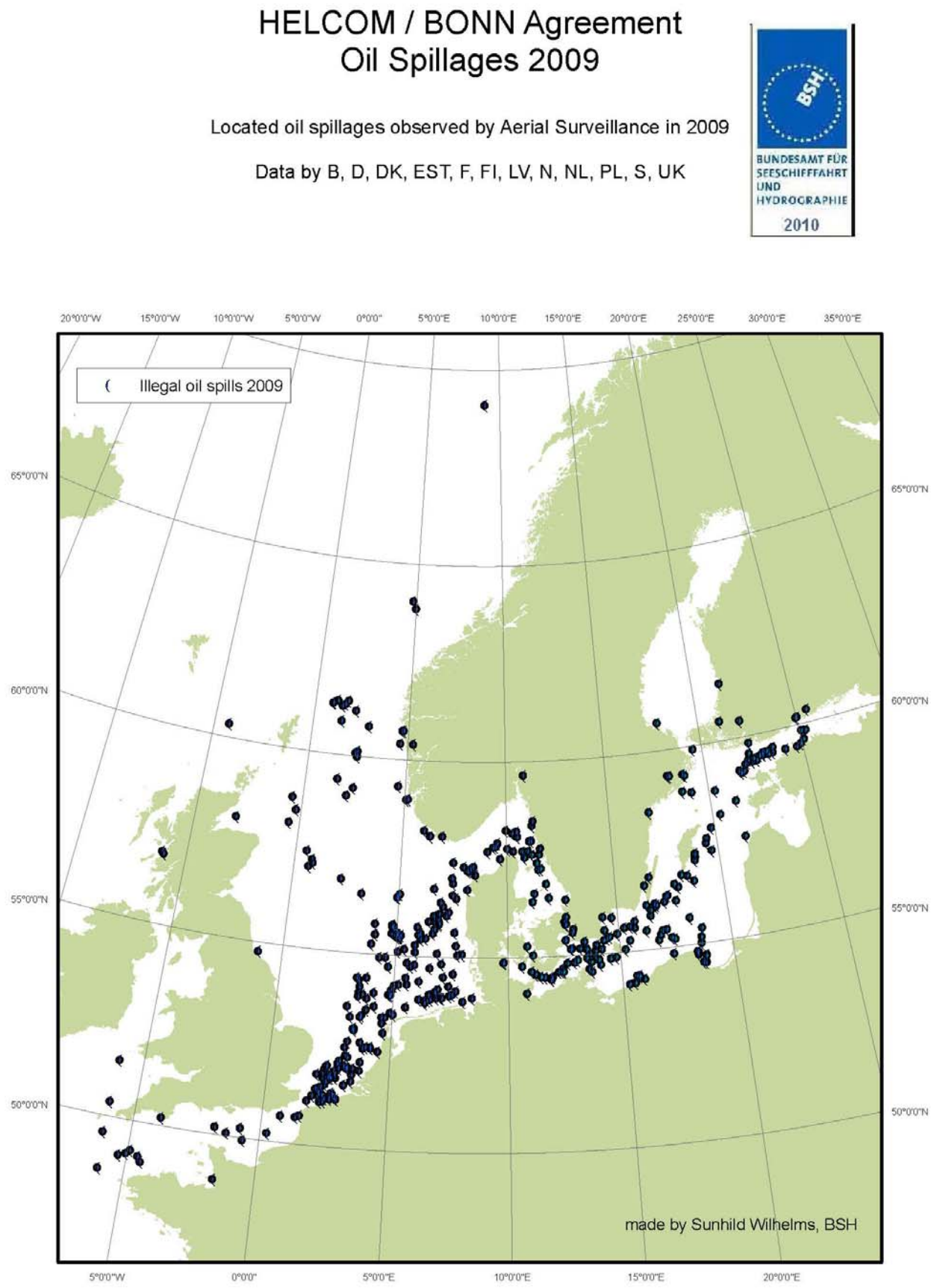


Figure 4: Maritime traffic routes off the Netherlands

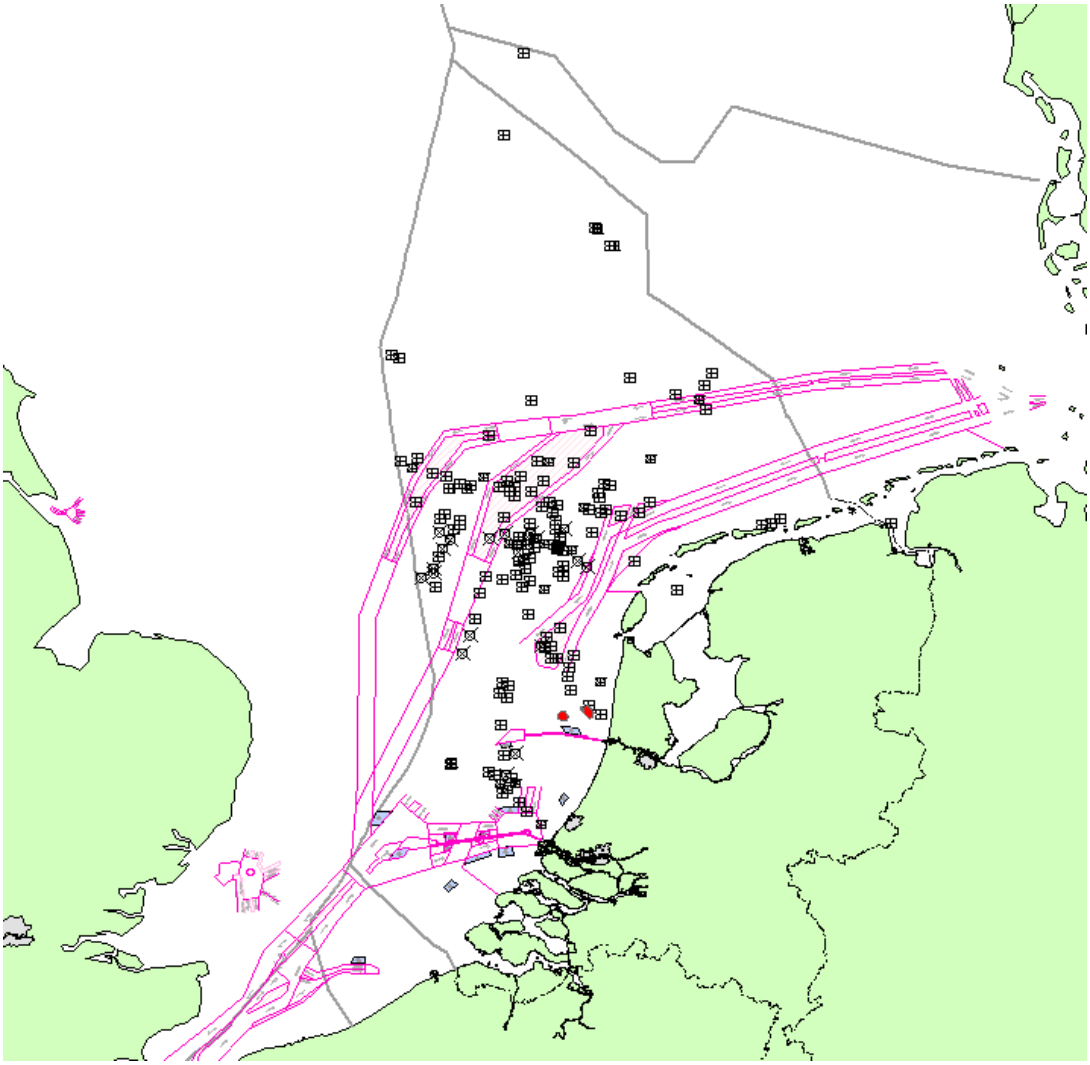
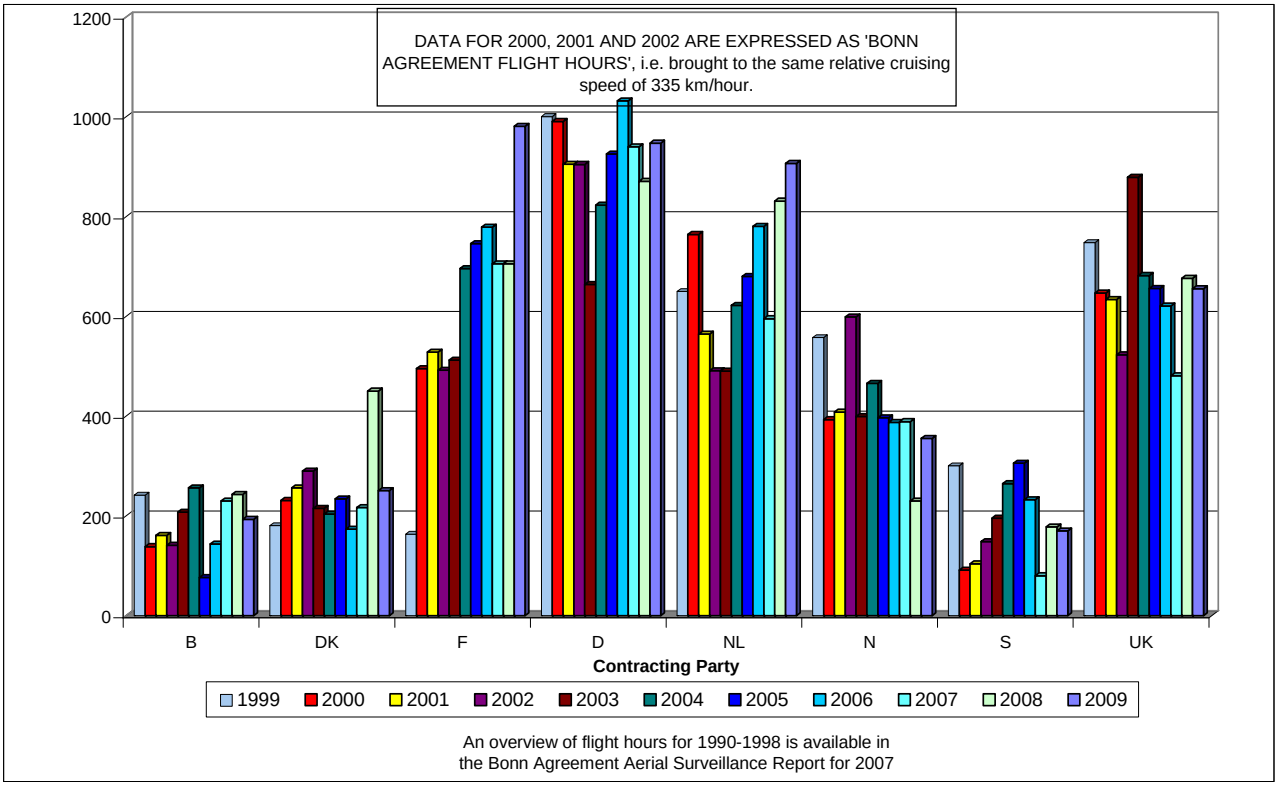
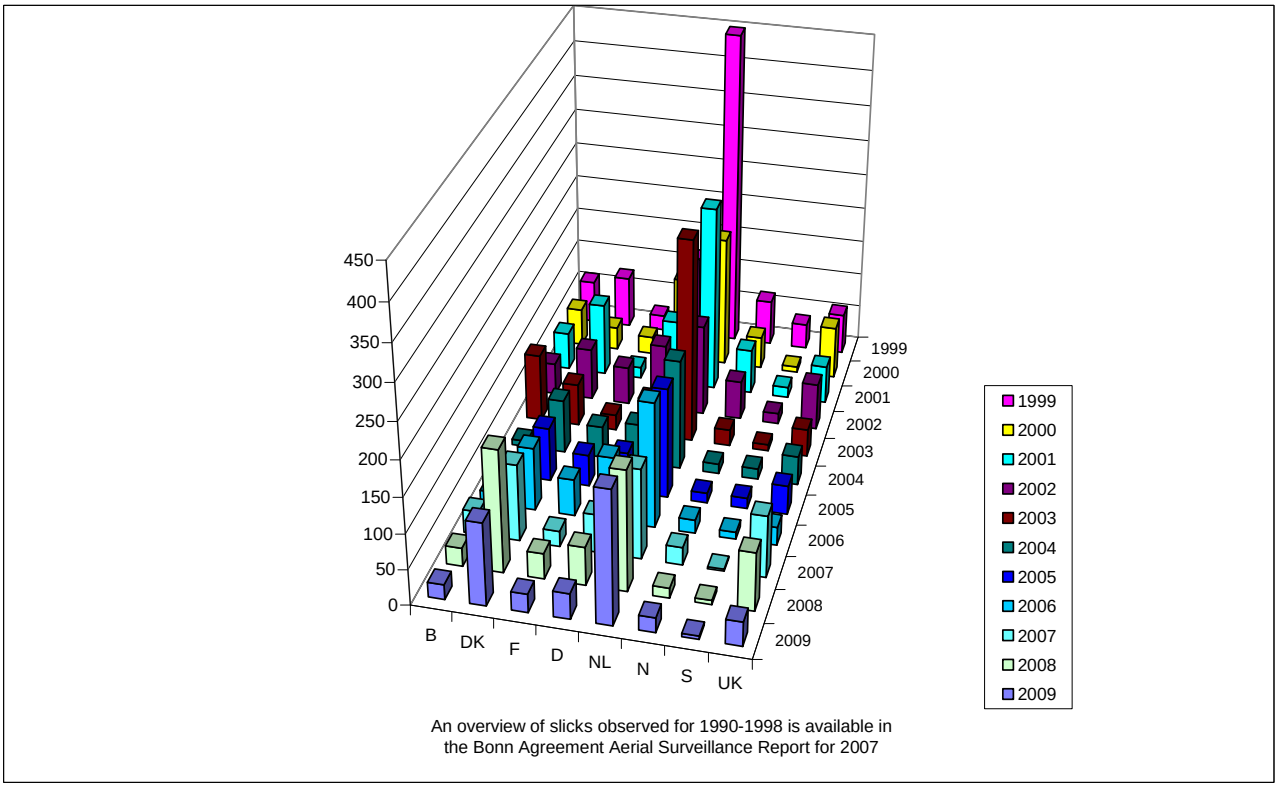


Figure 5: Number of flight hours per country 1999 – 2009



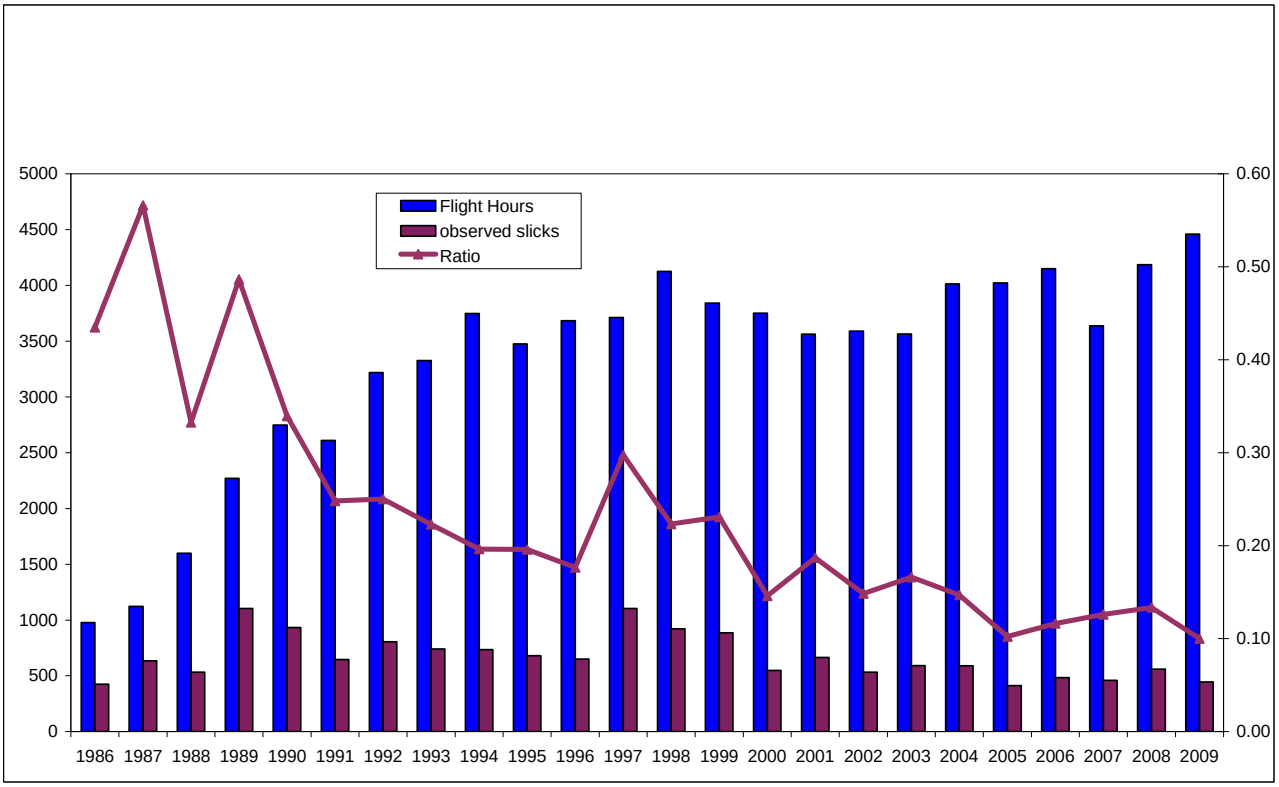
An overview of flight hours for 1990-1998 is available in the Bonn Agreement Aerial Surveillance Report for 2007

Figure 6: Number of slicks observed 1999 – 2009



An overview of slicks observed for 1990-1998 is available in the Bonn Agreement Aerial Surveillance Report for 2007

Figure 7: Total numbers: all flight hours and all observed slicks 1986 – 2009 and their ratio



ANNEX 1

Definitions used in the reporting of data from aerial and satellite surveillance

Aerial surveillance

Country	Name of the Contracting Party reporting.
One Flight	Unit of operation between take-off and next landing.
No. of flight hours	Nationally allocated flight hours carried out by trained observers on behalf of the Contracting Party.
Day (daylight)	From 30 minutes after Morning Civil Twilight, until 30 minutes before Evening Civil Twilight as given in the Air Almanac.
Night (darkness)	From 30 minutes before Evening Civil Twilight, until 30 minutes after Morning Civil Twilight as given in the Air Almanac.
Detections	Number of first reports on possible pollutions obtained in aerial operations (raw data). This will be sensor data, without visual observation.
Detections confirmed	Number of the total detections (first reports) that have been verified and/or identified by means of instruments or visually and are confirmed by a trained operator as a mineral oil pollution.
Estimated volume of a spill	The volume of one spill calculated using the Bonn Agreement Oil Appearance Code, the lower figure (BAOAC minimum).
Identified polluter	Name of vessel, platform or other source positively identified as the polluter.
Slick	An area of (possible) pollution.
Spill	A collection of one or more slicks originating from the same source.
Remarks	This column should be used to report on particular situations.

Satellite Surveillance

Satellite detections	The number of satellite detections is the number of reports obtained through satellite detections within the EEZ of the contracting party – including those obtained from other countries
Confirmed mineral oil	The number of verified/investigated satellite detections consisting of mineral oil. A trained operator will have visually observed mineral oil
Confirmed other oil or chemical	The number of verified/investigated satellite detections consisting of vegetable or fish oil or chemical.
Confirmed natural phenomena	The number of verified/investigated satellite detections consisting of algae or natural phenomena as currents, waves, ice etc.
No detections	The number of verified/investigated satellite detections that nothing has been found.

ANNEX 2

Additional information on the Tour de Horizon flights

Report on Tour de Horizon flights carried out during 2009

Introduction

The Tour de Horizon (TdH) flights for 2009 were flown as follows:

- April: UK
- May: NO
- June: NL
- July: GE
- August: SE
- September: BE
- November: DK

The flights took place on 20 days between 28 April and 19 November 2009, more specifically:

- From 28 till 29 April;
- From 22 till 24 May;
- From 08 till 10 June;
- From 01 till 03 July;
- From 26 till 28 August;
- From 31 August till 04 September;
- From 18 till 19 November.

All flight data have been sent to Belgium for compilation.

Detections

- 35 detections were made: 21 in British area, 4 in Norwegian area, 4 in Dutch area, and 6 in Danish area.
- 23 detections were identified as mineral oil, 9 detections could not be specified (= unknown substances) and 3 were identified as vegetable oil (whose one was palm oil, and the other styrene).
- 27 detections were associated with offshore installations (18 in UK area, 4 in Norwegian area, 5 in Danish area and none in Dutch area). The source of pollution of the remaining 2 mineral oil detections, of the 3 unknown detections and of one vegetable oil could not be established. Two additional vegetable pollutions (MARPOL II discharges) were linked to tankers (Jo Ask and Giga Puma).
- Considering the *minimum* oil volume estimates:
    - 0 detections were quantified as more than 100 m^3;
    - 0 detection was quantified between 10-100 m^3;
    - 1 detections was quantified between 1-10 m^3 (2.57 m^3);
    - 0 detections were quantified as between 0.5 and 1 m^3;
    - 5 detections were between 0.1 and 0.5 m^3 (0.29; 0.41; 0.14; 0.2; 0.17 m^3);
    - 17 detections were lower than 0.1 m^3.
- Considering the *maximum* oil volume estimates:
    - 0 detection was quantified as more than 100 m^3;
    - 1 detection were quantified between 10-100 m^3 (13.00 m^3);
    - 5 detections were between 1-10 m^3 (2.98; 4.36; 1.53; 1.74; 1.05 m^3)
    - 4 detections were quantified as between 0.5 and 1 m^3 (0.68; 0.87; 0.92; 0.83 m^3);

- 4 detections were between 0.1 and 0.5 m^3 (0.38; 0.46; 0.37; 0.37 m^3);
- 9 detections were below 0.1 m^3.

- All countries reported that no 'first alert' satellite detection was obtained for any of the 'aerial' TdH detections (no satellite detection validation effort reported).

Six maps have been added to this report (see Fig. 1 to 6) with the aim to visualize the various flight routes of the various aircraft that performed TdH flights in 2009 (for the Swedish aircraft a map could not be drafted because the flight route details were no longer available when this annual Report was compiled). On these maps, the location of the detections that were made during the various flights have also been added. The positions of the offshore platforms (in British, Danish, Dutch and Norwegian waters respectively) have also been added in order to enhance the illustrations.

Detection reporting

Belgium and The Netherlands performed post-flight reporting of detections by fax and contacted also the national authorities by phone. Sweden and Germany reported that they performed post-flight reporting by email to the national authorities. Denmark proceeded to in-flight reporting to NCPs.

Detection investigation

The assessments obtained from the UK, NO and DK national government inspectors state that all observed/detected spills which could be linked to a platform were originating from oil in produced water discharges that were within permitted legislative limits. These assessments seem to be plausible for most detections, since most oil spills observed during TdH 2009 missions were indeed of lower volume categories (see 'Detections' above).

However, in the case of the Dutch observation on 9 June 2009 of a 'bigger' oil discharge linked to the EIDER platform (in fact the only discharge of TdH 2009 with a min. quantity of more than 1 m^3), the government inspector's assessment does not seem to match with what the Dutch observers saw that day: Whereas the Dutch operators estimated the total oil volume of that specific discharge on 9 June 2009 to be between 2.57 and 13 tonnes (min. and max. estimated quantity), the outcome of the national investigation was that the detection resulted from a permitted oil in produced water discharge and that, for the entire month of June, the total oil in produced water discharged to sea by the platform EIDER was estimated to be 4.5 tonnes (See 'TdH 2009 Detection Investigation Summary' below).

TOUR D'HORIZON 2009 RESULTS

UNITED KINGDOM: 28-29 APRIL 2009

No	Date (ddmm)	Time (UTC)	Position (N - E/W)	CP Area	Min. Quan. (m^3)	Max. Quan. (m^3)	Polluter ID	Pollution Type
NO DETECTIONS								

NORWAY: 22-24 MAY 2009

No	Date (ddmm)	Time (UTC)	Position (N - E/W)	CP Area	Min. Quan. (m^3)	Max. Quan. (m^3)	Polluter ID	Pollution Type
NO DETECTIONS								

NETHERLANDS: 8-10 JUNE 2009

No	Date (ddmm)	Time (UTC)	Position (N - E/W)		CP Area	Min. Quan. (m^3)	Max. Quan. (m^3)	Polluter ID	Pollution Type
1	8.06	9:25	54° 07.3 N	000° 52.1 E	UK	x	x	(unk)	Unk
2	8.06	13:12	56° 29.2 N	002° 07.7 E	UK	0.29	2.98	Fulmar	mineral oil
3	8.06	14:17	57° 32.3 N	001° 06.4 E	UK	x	x	(unk)	Unk
4	9.06	9:16	58° 28.1 N	000° 13.9 E	UK	x	x	Tartan	Unk
5	9.06	9:18	58° 28.1 N	000° 14.9 E	UK	x	x	Piper	Unk
6	9.06	19:24	58° 24.3 N	000° 21.9 E	UK	x	x	Saltire-A	Unk
7	9.06	10:07	59° 24.2 N	001° 37.5 E	UK	0.41	4.36	Gryphon A	mineral oil
8	9.06	10:19	59° 33.0 N	001° 32.9 E	UK	x	x	Ness/Beryl oil field	unk
9	9.06	13:35	60° 54.7 N	000° 58.0 E	UK	0.14	1.53	Heather	mineral oil
10	9.06	13:57	61° 20.2 N	001° 11.4 E	UK	2.57	13.00	Eider	mineral oil
11	9.06	14:16	61° 36.5 N	001° 19.9 E	UK	0.07	0.68	Magnus	mineral oil
12	9.06	14:12	61° 28.0 N	001° 29.1 E	UK	0.00	0.01	Single spot	mineral oil
13	9.06	14:17	61° 21.0 N	001° 38.4 E	UK	0.03	0.38	Thistle	mineral oil
14	9.06	14:19	61° 23.9 N	001° 47.5 E	UK	0.00	0.46	Murchison	mineral oil
15	9.06	14:36	61º 17.8 N	001º 54.8 E	UK	0.03	0.37	Statfjord C	mineral oil
16	9.06	14:39	61º 15.5 N	001º 52.6 E	UK	0.08	0.87	Statfjord A	mineral oil
17	9.06	14:42	61º 12.6 N	001º 52.6 E	UK	0.17	1.74	Statfjord B	mineral oil
18	10.06	8:51	59° 34.3 N	002° 13.6 E	NO	0.00	0.01	Heimdal	mineral oil
19	10.06	9:10	59° 13.4 N	002° 23.5 E	NO	0.20	0.92	Bolder	mineral oil

20	10.06	13:38	56° 32.3 N	003° 12.0 E	NO	0.00	0.03	Ekofish	mineral oil
21	10.06	14:17	55° 35.4 N	004° 45.4 E	DK	0.00	0.02	Gorm	mineral oil
22	10.06	14:28	55° 31.5 N	004° 59.0 E	DK	x	x	Halfdan-A	unk
23	10.06	14:30	55° 28.1 N	005° 06.8 E	DK	x	x	Halfdan	unk
24	10.06	14:34	55° 28.0 N	005° 07.8 E	DK	0.00	0.03	Dan-F/Safe Esjberg	mineral oil
25	10.06	15:06	53° 55.0 N	004° 36.2 E	NL	x	x	(unk)	vegetable oil

- 16 detections/observations of mineral oils; 8 detections of unknown substance and 1 vegetable oil pollution.
- No first alert via SAT detection reported
- Standard post-flight reporting performed by fax to NCPs.

GERMANY: 01-03 JULY 2009

No	Date (ddmm)	Time (UTC)	Position (N - E/W)		CP Area	Min. Quan. (m^3)	Max. Quan. (m^3)	Polluter ID	Pollution Type
1	2.07	9:50	58° 27.0 N	000° 14.0 W	UK	0.07	1.05	CLAYMORE	mineral oil

- 1 detection/observation of mineral oil.
- No first alert via SAT detection reported.
- Post-flight reporting performed by email to CCME.

SWEDEN: 26-28 AUGUST 2009

No	Date (ddmm)	Time (UTC)	Position (N - E/W)		CP Area	Min. Quan. (m^3)	Max. Quan. (m^3)	Polluter ID	Pollution Type
1	27.08	14:30	58° 26.8 N	000° 15.6 E	UK	0.03	0.37	Rig 14/19-A CAP, CCP	mineral oil

- 1 detection/observation of mineral oil.
- No first alert via SAT detection reported.
- Post-flight reporting performed by email

BELGIUM: 31 AUGUST-04 SEPTEMBER 2009

No	Date (ddmm)	Time (UTC)	Position (N - E/W)		CP Area	Min. Quan. (m^3)	Max. Quan. (m^3)	Polluter ID	Pollution Type
1	31.08	7:06	52° 05.8 N	002° 52.2 E	NL	x	x	GINGA PUMA	vegetable oil (palm oil)
2	31.08	7:25	52° 09.9 N	002° 51.9 E	NL	x	x	JO ASK	vegetable oil (styrene)
3	2.09	8:44	60° 47.0 N	002° 55.0 E	NO	0.00	0.05	VELSLEFRIK	mineral oil
4	2.09	9:49	59° 22.1 N	001° 35.5 E	UK	0.00	0.02	GRYPHON A	mineral oil
5	3.09	15:43	55° 32.5 N	004° 54.8 E	DE	0.00	0.00	(Unk)	mineral oil
6	3.09	15:46	55° 31.8 N	005° 00.4 E	DE	0.01	0.05	HALFDAN A	mineral oil

- 4 detections/observations of mineral oils; 2 detections of MARPOL II discharges.
- No first alert via SAT detection reported.
- Standard post-flight reporting performed by fax to NCPs.

DENMARK: 18-19 NOVEMBER 2009

No	Date (ddmm)	Time (UTC)	Position (N - E/W)		CP Area	Min. Quan. (m^3)	Max. Quan. (m^3)	Polluter ID	Pollution Type
1	18.11	11:06	53° 19.0 N	004° 58.7 E	NL	x	x	(Unk)	Unknown
2	19.11	10:25	61° 16.9 N	000° 56.0 E	UK	0.07	0.83	(Unk)	Mineral oil

- 1 detection/observation of mineral oils; 1 detection of unknown substance.
- No first alert via SAT detection reported.
- In-flight reporting performed to NCPs.

TOUR D'HORIZON 2009 – DETECTION INVESTIGATION SUMMARY

NETHERLANDS - JUNE

Date (ddmm)	Time (UTC)	Platform	Reported quantity (m^3)		Government inspectors assessment
			Min.	Max.	
8.06	13:12	Fulmar	0.29	2.98	**UK**: Operator contacted by UK Government and detection investigated. Discharge of oil in produced water reported to be within permitted legislative limits. Sheen thought to be more extensive than usual due to calm weather conditions. Platform averaged 10.3 mg/l for June 2009.
9.06	9:16	Tartan	X	X	**UK**: Operator contacted by UK Government and detection investigated. Detection attributed to permitted oil in produced water discharge. Established that concentration of oil in produced water being discharged was found to be slightly higher than normal in some of the samples taken on 8 and 9 June (highest concentration being 39.4 mg/l). Operator reported that this was most probably as a result of hydrate inhibitor which was pumped to a subsea manifold during the 8th of June and resulted in higher than normal oil in water results being observed. Oil in water levels returned to lower concentrations of approximately 20 mg/l later on the 9th of June. Sheen thought to be more extensive than usual due to calm weather conditions. Platform complied with permitted oil in water concentration legislative limits for month of June 2009, achieving average of 19 mg/l.
9.06	9:18	Piper	X	X	**UK**: Operator contacted by UK Government; detection investigated. Detection attributed to permitted oil in produced water discharge. Sheen thought to be more extensive than usual due to calm weather conditions. Platform complied with permitted oil in water concentration legislative limits for month of June 2009, achieving average of 19 mg/l.
9.06	19:24	Saltire-A	X	X	**UK**: Operator contacted by UK Government and detection investigated. Detection attributed to permitted oil in produced water discharge. Discharge of oil in produced water found to be within permitted legislative limits, but slightly elevated compared with normal concentrations due to a well test program. Sheen thought to be more extensive than usual due to calm weather conditions. Platform complied with permitted oil in water concentration legislative limits for month of June 2009, achieving average of 16.3 mg/l.
9.06	10:07	Gryphon A	0.41	4.36	**UK**: Operator contacted by UK Government and detection investigated. Detection attributed to permitted oil in produced water discharge. Discharge of oil in produced water found to be within permitted legislative limits on the 8th of June. On the 9th of June, after a sample of 43.8 mg/l the produced water was routed to injection. Sheen thought to be more extensive than usual due to calm weather

					conditions. Platform complied with permitted oil in water concentration legislative limits for month of June 2009, achieving average of 22.5 mg/l.
9.06	10:19	Ness/Beryl oil field	X	X	**UK**: Operator contacted by UK Government and detection investigated. Detection attributed to permitted oil in produced water discharge which was established as being within permitted legislative limits. Sheen thought to be more extensive than usual and platform reported sea conditions were flat calm. Platforms complied with permitted oil in water concentration legislative limits for month of June 2009, with Beryl Alpha achieving average of 7.5 mg/l and Beryl Bravo achieving average of 17.2 mg/l.
9.06	13:35	Heather	0.14	1.53	**UK**: Operator contacted by UK Government and detection investigated. Detection attributed to permitted oil in produced water discharge. 7 samples of the produced water stream had been taken and 6 were found to be less than 30mgl oil in water concentration and 1 of 35.7 mg/l. Sheen thought to be more extensive than usual due to calm weather conditions. Platform complied with permitted oil in water concentration legislative limits for month of June 2009, achieving average of 27.2 mg/l.
9.06	13:57	Eider	2.57	13.00	**UK**: Operator contacted by UK Government and detection investigated. Detection attributed to permitted oil in produced water discharge which was established as being within permitted legislative limits. Sheen thought to be more extensive than usual due to calm weather conditions. Platform operator reports that they complied with permitted oil in water concentration legislative limits for month of June 2009: their records showed oil in water details varied between 15.6 and 16.8 mg/l. During June 2009, the Total Oil in Produced Water discharged to sea by Eider was 4.514 tonnes (or roughly 0.15 tonnes per day) at an average of 15.7 mg/l. The operator also reported that they had no record of any events on that day which would lead them to believe there was a spill of any kind. The operator confirmed that it is not unusual to have a sheen of this appearance from Eider's produced water discharge especially given the calm weather conditions and sunlight.
9.06	14:16	Magnus	0.07	0.68	**UK**: Operator contacted by UK Government and detection investigated. Detection attributed to permitted oil in produced water discharge. Operator reported that permitted discharge concentration limits on most process streams were within compliance but two discharge streams had experienced a short period of elevated oil in water concentrations. Sheen thought to be more extensive than usual due to calm weather conditions. Platform complied with permitted oil in water concentration legislative limits for month of June 2009, achieving 4.9 mg/l.
9.06	14:12	Single spot	0.00	0.01	**UK**: No source identified by aerial surveillance. UK Government investigated detection but were unable to attribute detection to any particular source.
9.06	14:17	Thistle	0.03	0.38	**UK**: Operator contacted by UK Government and detection investigated. Detection attributed to permitted oil in produced water discharge which was established as being within permitted legislative limits. Sheen thought to be more extensive than

					usual due to calm weather conditions. Platform complied with permitted oil in water concentration legislative limits for month of June 2009, achieving 13.4 mg/l.
9.06	14:19	Murchison	0.00	0.46	**UK**: Operator contacted by UK Government and detection investigated. Detection attributed to permitted oil in produced water discharge. Sheen thought to be more extensive than usual due to calm weather conditions. Platform complied with permitted oil in water concentration legislative limits for month of June 2009, achieving 17.5 mg/l.
9.06	14:36	Statfjord C	0.03	0.37	**NO***:* Operator contacted, produced water
9.06	14:39	Statfjord A	0.08	0.87	**NO:** Operator contacted, produced water
9.06	14:42	Statfjord B	0.17	1.74	**NO**: Operator contacted, produced water, Flushing Hydrocyclones for 15 minutes on the 8th of June (Follow up of a sat obs on the 8th of june)
10.06	8:51	Heimdal	0.00	0.01	**NO**: Operator contacted, produced water
10.06	9:10	Bolder	0.20	0.92	**NO**: Operator contacted, produced water
10.06	13:38	Ekofish	0.00	0.03	**NO***:* Operator contacted, produced water
10.06	14:17	Gorm	0.00	0.02	**DK***:* Gorm C: 9/6;1 ppm, 10/6; 1 ppm, 11/6; 1 ppm Gorm F: 9/6; 10 ppm, 10/6; 6 ppm, 11/6; 6 ppm
10.06	14:28	Halfdan-A	X	X	**DK***:* Halfdan: 9/6;5 ppm, 10/6; 6 ppm, 11/6; 8 ppm
10.06	14:30	Halfdan	X	X	**DK***:* Halfdan: 9/6;5 ppm, 10/6; 6 ppm, 11/6; 8 ppm
10.06	14:34	Dan-F/Safe Esjberg	0.00	0.03	**DK***:* Dan FC: 9/6;3 ppm, 10/6; 3 ppm, 11/6; 4 ppm - Dan FF: 9/6;2 ppm, 10/6; 3 ppm, 11/6; 8 ppm - Dan FG: 9/6;5 ppm, 10/6; 13 ppm, 11/6; 4 ppm *For DK: conc. in ppm = average discharge of oil in produced water within 24 hrs that day.*

GERMANY - JULY

Date (ddmm)	Time (UTC)	Platform	Reported quantity (m^3)		Government inspectors assessment
			Min.	Max.	
2.07	9:50	Claymore	0.07	1.05	**UK**: Operator contacted by UK Government and detection investigated. Detection attributed to permitted oil in produced water discharge which was established as being within permitted legislative limits. Sheen thought to be more extensive than usual due to calm weather conditions. Platform complied with permitted oil in water concentration legislative limits for month of July 2009, achieving 13.6 mg/l.

SWEDEN - AUGUST

Date (ddmm)	Time (UTC)	Platform	Reported quantity (m^3)		Government inspectors assessment
			Min	Max.	
27.08	14:30	Rig 14/19-A CAP, CCP	0.03	0.37	**UK**: UK Government investigated detection but was unable to attribute detection to any particular source.

BELGIUM - SEPTEMBER

Date (ddmm)	Time (UTC)	Platform	Reported quantity (m^3)		Government inspectors assessment
			Min.	Max.	
2.09	8:44	Velslefrik	0.00	0.05	**NO:** Operator Contacted, Produced water 22 ppm (Within Limits)
2.09	9:49	Gryphon A	0.00	0.02	**UK**: Operator contacted by UK Government and detection investigated. Detection attributed to permitted oil in produced water discharge which was established as being within permitted legislative limits. Platform complied with permitted oil in water concentration legislative limits for month of Sept.2009, achieving 23.6 mg/l.
3.09	15:46	Halfdan A	0.01	0.05	**DK***:* Halfdan: 2/9;4 ppm, 3/9;8 ppm , 4/9; 4 ppm

TOUR D'HORIZON 2009 – FLIGHT MAPS

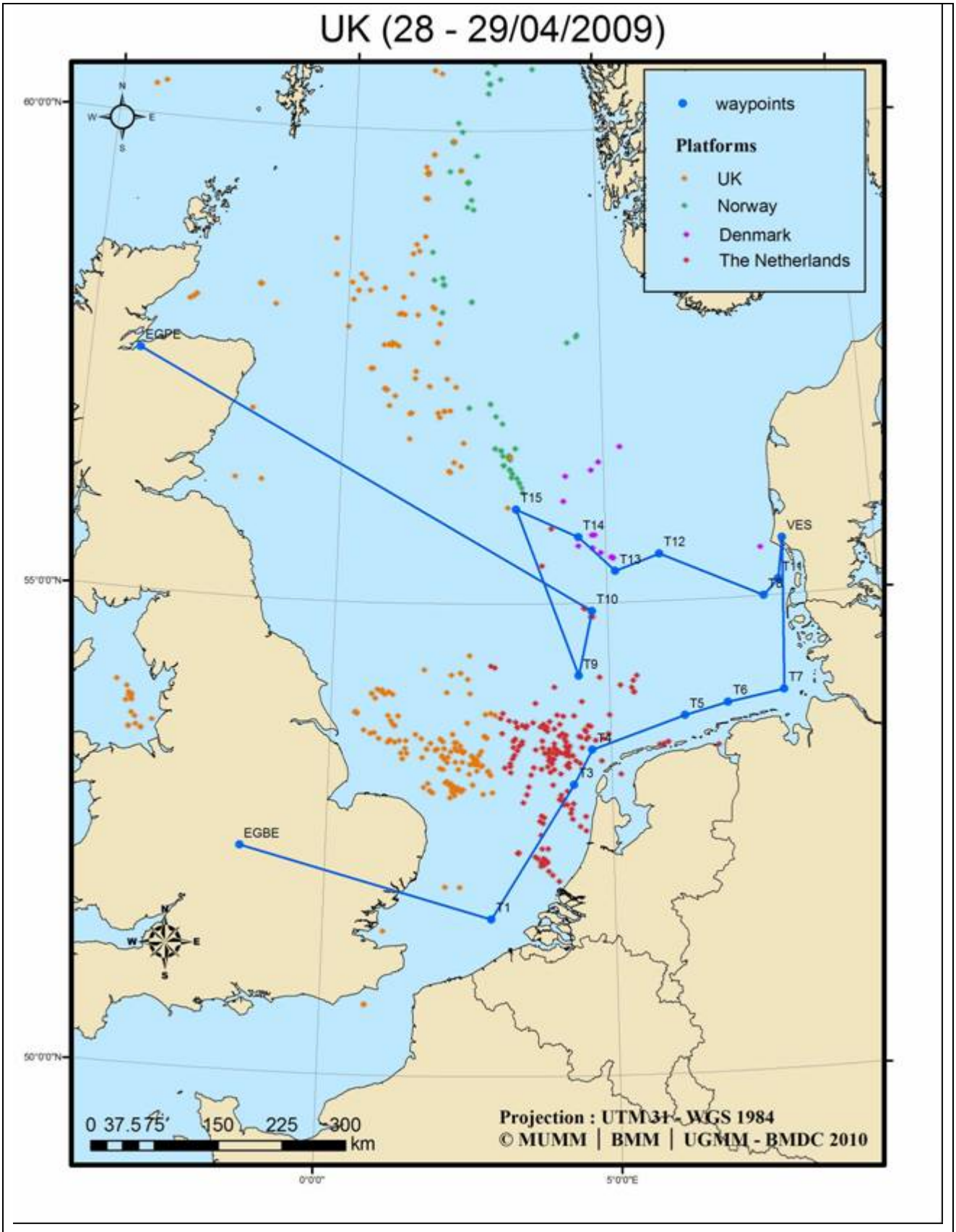


Figure 1: United Kingdom: TdH 09 Flight Route.

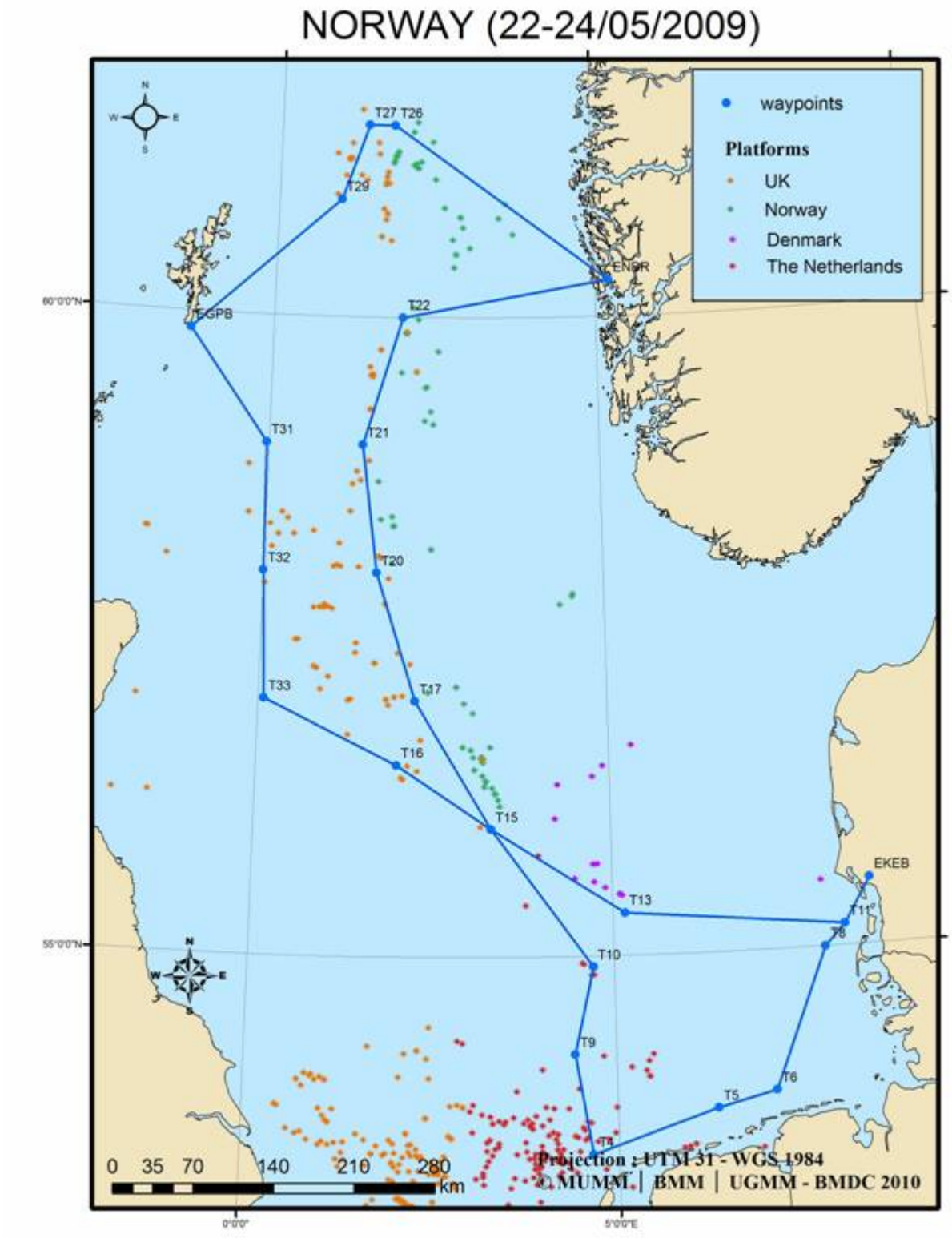


Figure 2: Norway: TdH 09 Flight Route.

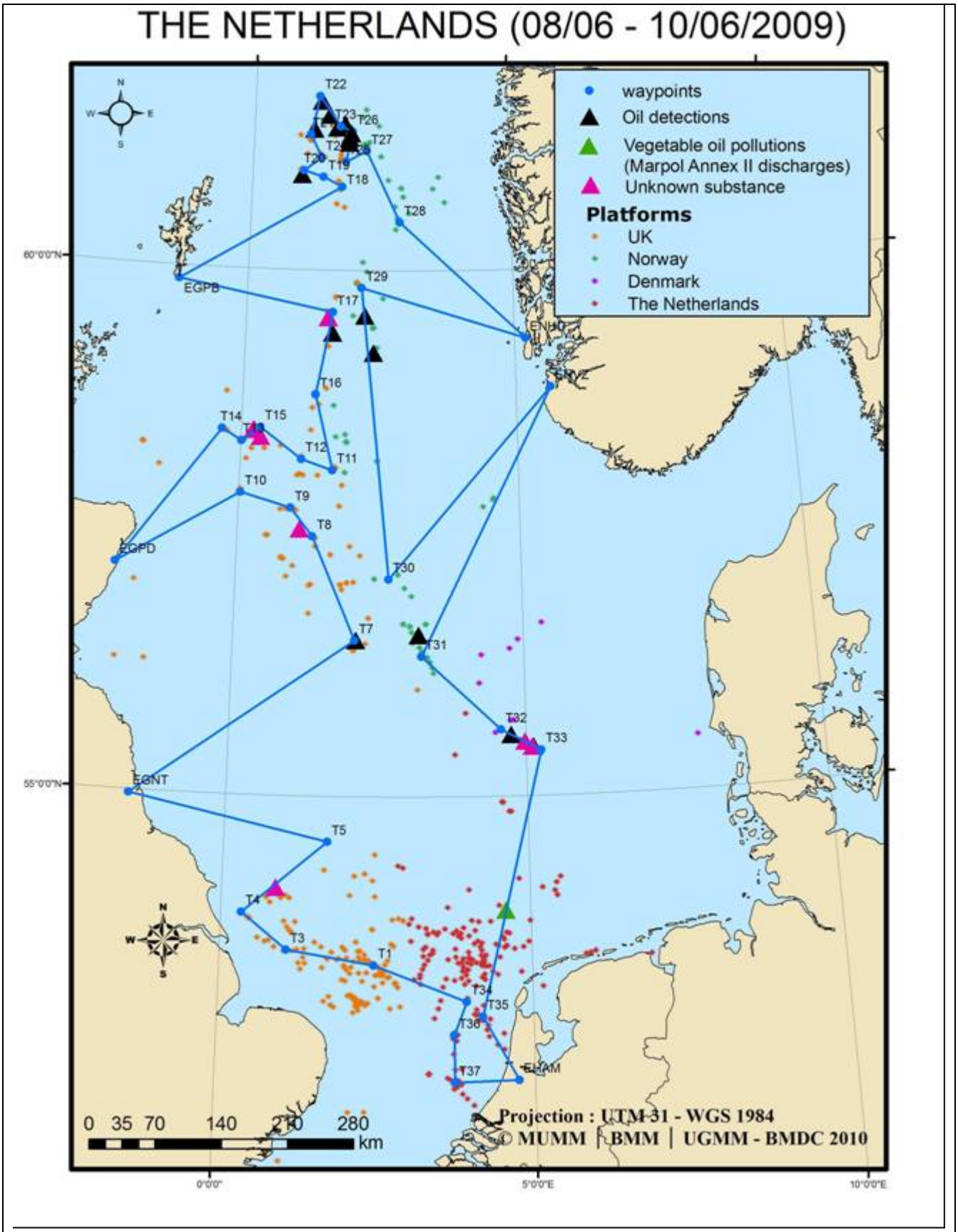


Figure 3: The Netherlands: TdH Flight Route + detections made.

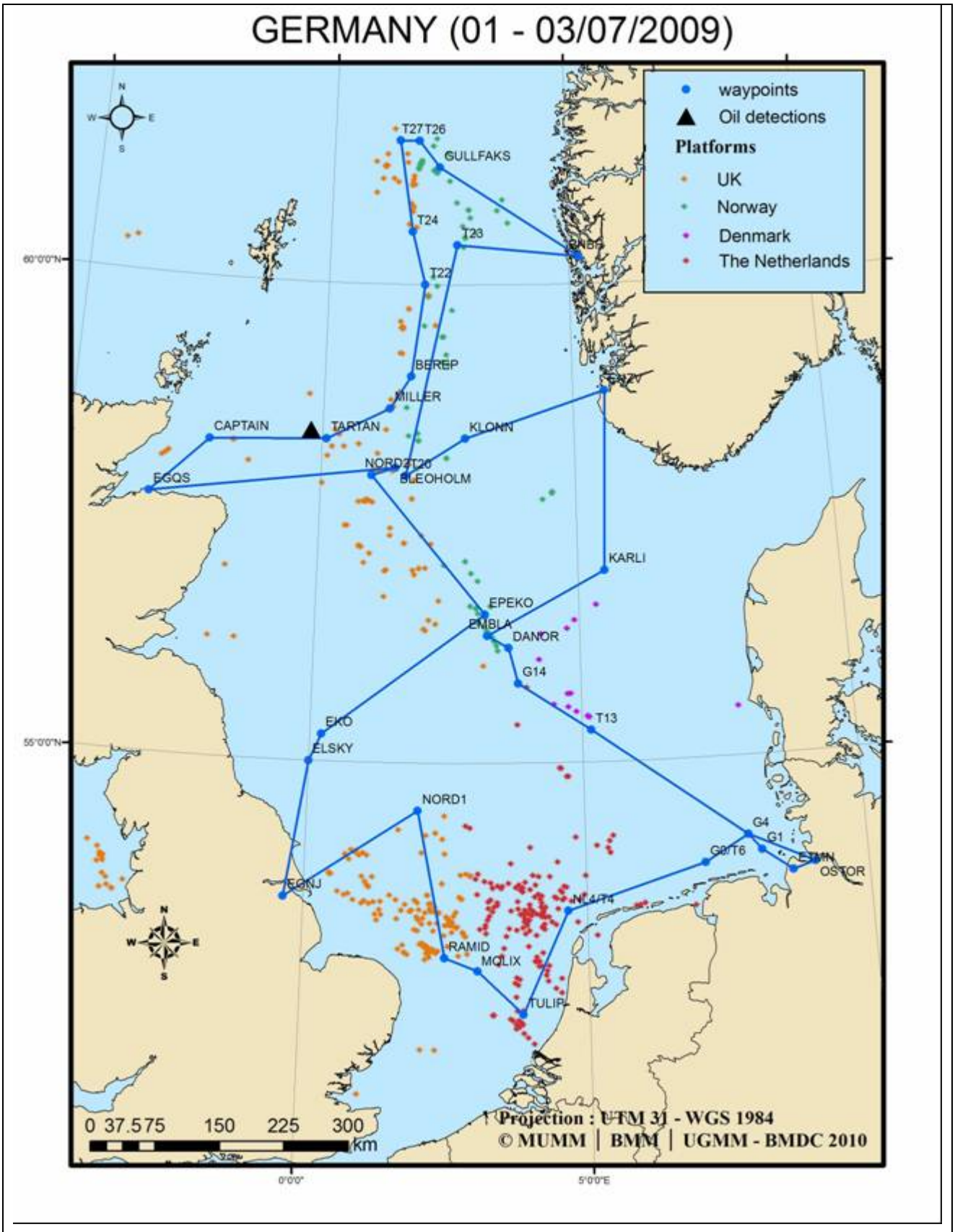


Figure 4: Germany: TdH 09 Flight Route + detection made.

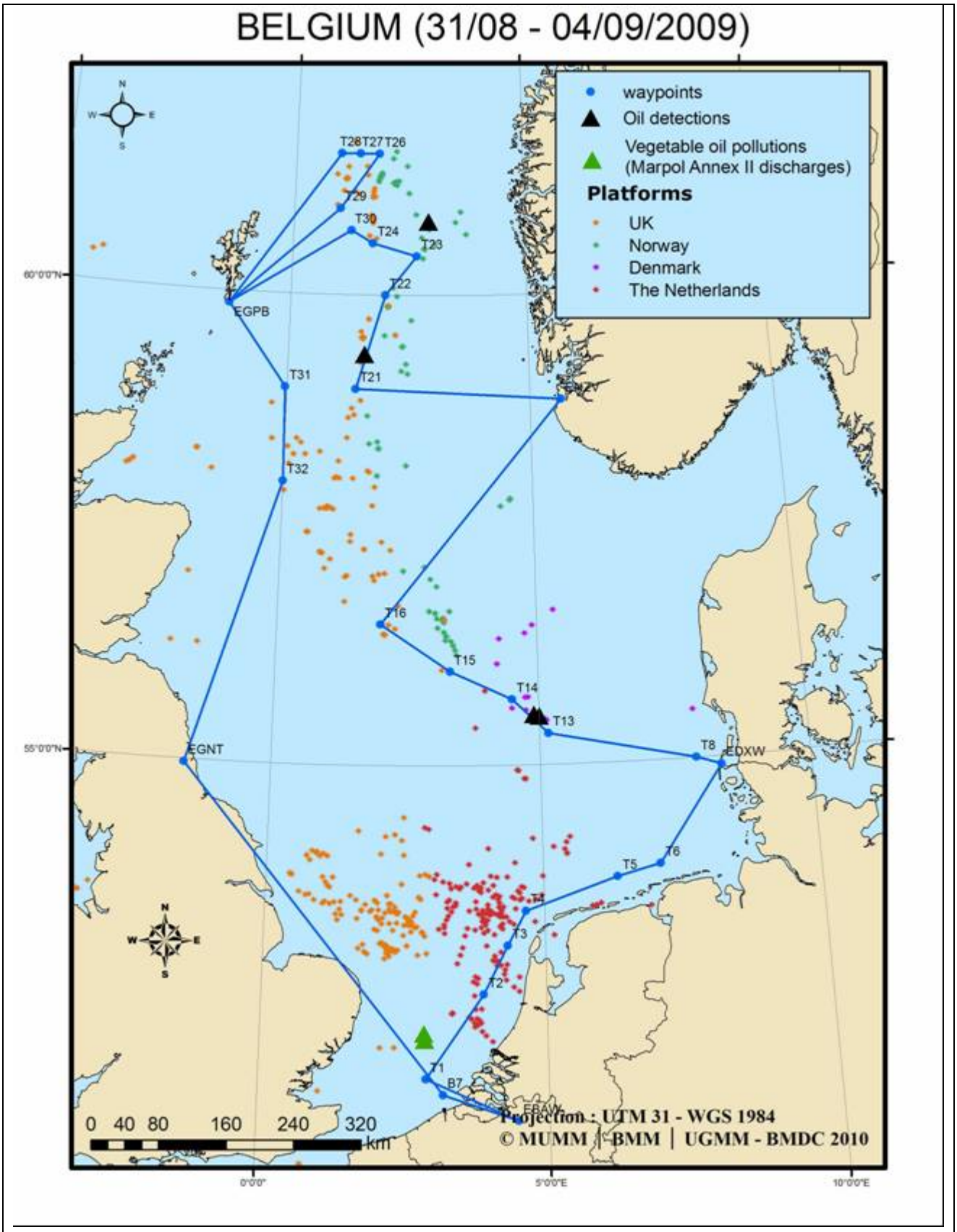


Figure 5: Belgium: TdH 09 Flight Route + detections made.

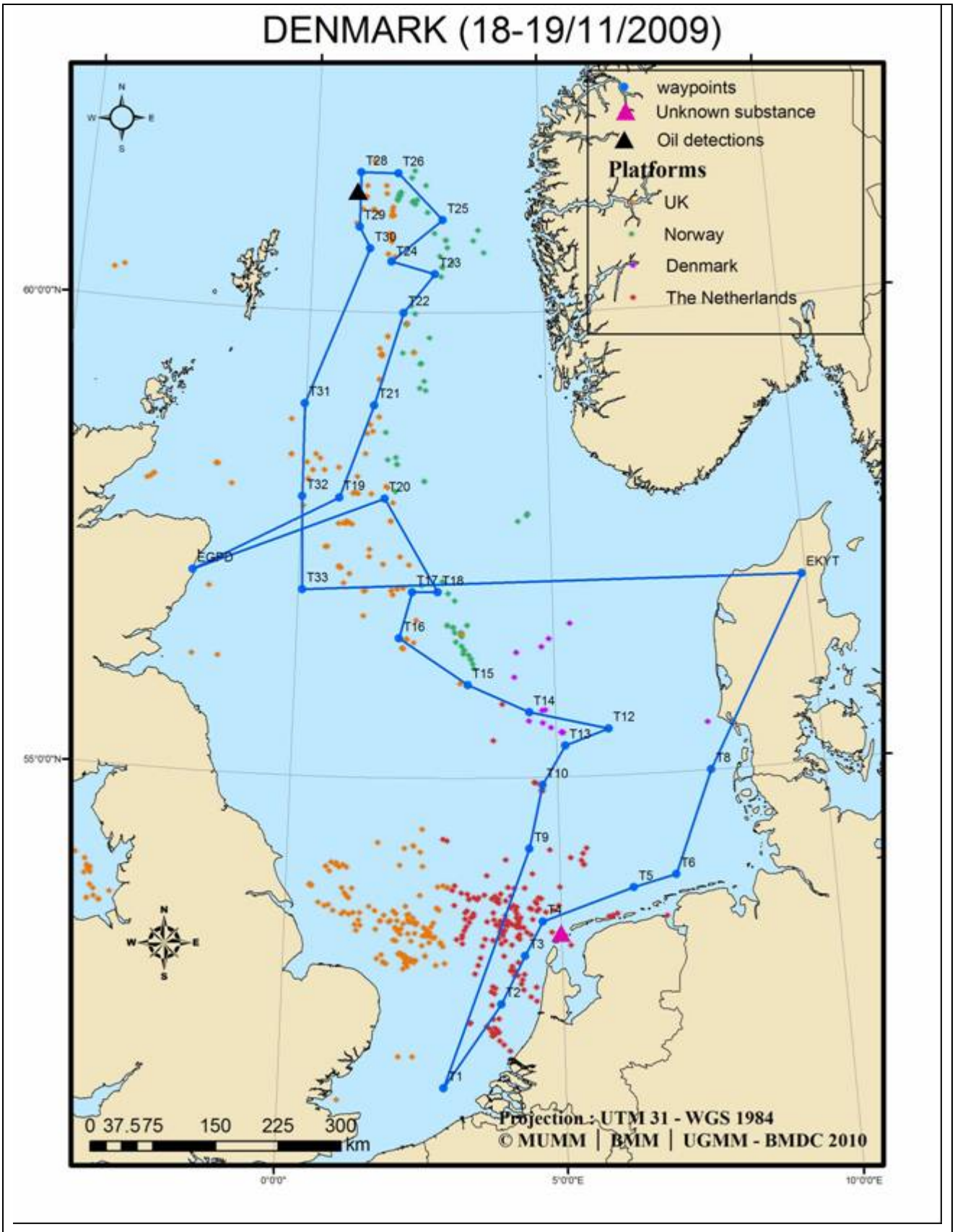


Figure 6: Denmark: TdH 09 Flight Route + detections made.

ANNEX 3

Summary of information provided by Contracting Parties on EEZs, major traffic routes, oil and gas installations, satellite surveillance programmes and objectives of flights

Size of Contracting Parties' Exclusive Economic Zones (EEZs)

Belgium	3 500 km²
Denmark	105 000 km^2
France	265 000 km^2
Germany	approximately 34 100 km²
Netherlands	46 462 km^2
Norway	approximately 2 000 000 km^2
Sweden	approximately 70 000 km²
UK	The UK has not declared an EEZ. The UK Pollution Control Zone covers more than 300 000 km².

Major traffic routes in Contracting Parties EEZs

Belgium	**North Hinder Traffic Separation Scheme (TSS)** and **West Hinder TSS**
Denmark	**Route T (TANGO)**, leading from the Skaw via the Great Belt to the Baltic. In 2003 a total of 23 240 ships passed the bridge in Great Belt. **The Sound**, leading from the Kattegat past Copenhagen into the Baltic. In 2003, a total of 37 161 ships passed Helsingør (Elsinore).
France	Major traffic route **between Spain and Northern Europe**.
Germany	The **German Bight Western Approach** and **Terschelling/German Bight** Traffic Separation Schemes.
Netherlands	See Figure 4
Norway	**Along the northern coast of Norway** and down the west coast. In addition to the normal coastal shipping traffic, there is an increasing traffic of oil/oil products from the north-western part of Russia. **West coast of Norway**. In addition to the normal coastal shipping traffic, there is much transport of crude oil from offshore installations to refineries in the Bergen area. Large amounts of oil products are also shipped out towards the European continent. **Along the southern part of Norway** there are major shipping routes from the Baltic-sea. There is also significant transport to and from refineries and industry along the Oslo Fjord.
Sweden	Along the Swedish south and east coasts there is increased transport of oil and oil products from the Gulf of Finland.
UK	The UK's 18,000 kilometres of coastline is one of the largest in Europe, and the UK economy relies on shipping for 95 per cent of its visible trade. There are several major commodity ports: London, Milford Haven, Teesport, Grimsby / Immingham, Southampton, Forth, Liverpool, Manchester and Medway. The major oil terminals are Teesport, Sullom Voe, Flotta and Hound Point. A large volume of shipping passes through UK waters en route to or from major ports on the European mainland. There are a number of straits, for example the Pentland Firth, Little Minch, North Channel and the Dover Strait. The Dover Strait connects the English Channel to the North Sea and is the busiest of all straits used for international navigation, with some 350 through shipping movements per day. Due to this density of shipping, as well as bad weather and strong tidal currents, the risk of collision is ever present.

Number of oil/gas rigs in Contracting Parties' EEZs

Belgium	None
Denmark	9 fixed oil rigs 17 operative oil fields 29 productive sites (installations)
France	
Germany	1 Oil Rig (Mittelplate) and 3 Gas Rigs
Netherlands	151 gas offshore installations 16 oil offshore installations
Norway	65 oil/gas – fields in operation in the Norwegian EEZ. Many of these oil/gas-fields contain several platforms, satellites and sub-sea satellites. 9 PDO approved fields. These are fields for which the authorities have approved a plan for development and operation (PDO) or granted a PDO exemption.
Sweden	None
UK	255 oil- and gas-producing fields. Many of these oil/gas-fields contain several platforms, satellites, and sub-sea satellites.

For further details see the OSPAR Offshore Installation database on the OSPAR website: "2009 Biennial update of the Inventory of Oil and Gas Offshore Installations in the OSPAR Maritime Area", Publication No. 334 (2009). http://www.ospar.org/v_publications/download.asp?v1=p00334

Existence of satellite programmes

Belgium	None
Denmark	Planning of aerial surveillance takes into account the dates of satellite surveillance (approx. 100 pictures per year), and is done by the Admiral Danish Fleet HQ and Tactical Air Command in close co-operation.
France	None
Germany	Partner in EU research project OCEANIDES until 2006
Netherlands	None
Norway	The Norwegian Coastal Administration supports a national satellite program called SATHAV. The aim of this program is to coordinate use of satellite data between governmental users, such as the military, the different pollution authorities, meteorological institutes, research institutes, universities etc. The Norwegian Space Agency, which is in charge of this programme, has made a long-term agreement with Canadian Radarsat for unlimited use of Radarsat 2 images for the Norwegian EEZ. Pending the launch of Radarsat 2, ENVISAT and Radarsat 1 images are used in the SATHAV program. Norway only receives High Confidence satellite observations. In 2009, approximately 1350 satellite images were delivered covering the Norwegian EEZ.
Sweden	Established satellite programme for 2004 153 satellite scene images for the Bonn Agreement and HELCOM area.
UK	The UK has been involved in a tripartite satellite surveillance programme with Germany and the Netherlands. This is part of the ENVISAT market development programme. Both ENVISAT and RADARSAT images have been used. New software called VISANT, developed by the programme contractors, Konsberg Satellite Services, Tromso, Norway has been used.

Brief description of the objective of the flights

Belgium	The tasks to be achieved during the flights are: • Pollution Control - to detect deliberate pollution from ships using visual and remote sensing detection means; • Accidental Pollution Monitoring - to detect and evaluate accidental oil pollution from ships (in 2003, the Tricolor and Vicky incidents); • Fisheries Control, with the support of the relevant specialist service; • Traffic Control, with the support of the National Police; • Research and scientific observations.
Denmark	The purposes are : • Show of force • Investigation of possible oil-slicks • Investigation of possible polluters • Collection of evidence
France	Flights are carried out by two types of aircraft • Remote-sensing aircraft dedicated to pollution surveillance ; • General surveillance aircraft dedicated to multi-purpose missions, including pollution.
Germany	Aerial surveillance flights are undertaken for pollution monitoring and, in case of pollution which can be combated at sea, to optimise the use of response vessels during the recovery operation at sea.
Netherlands	The objective of the flights is law enforcement, prevention of pollution, monitoring of shipping, 'eye in the sky' in case of disasters, and search and rescue.
Norway	The Norwegian Coastal Administration's fixed-wing surveillance mainly targets near-shore activities. The main objectives of surveillance are to identify acute pollution and illegal pollution from ships, and to monitor coastal industry and other coastal and near-coastal activities. Offshore installations are also monitored, but less frequently than in the past. This is because the offshore regulatory system requires the offshore industry to have its own system of monitoring spills from produced water and acute pollution. The Offshore Industry Pollution Law is enforced by the Norwegian Pollution Authorities (except for acute pollution). The Acute Pollution Law is enforced by the Norwegian Coastal Administration. Aims for fixed wing surveillance: 1. The fixed-wing surveillance should constantly cover the Administration's needs for detection, classification, documentation and on-scene evaluation, so that the correct measures for dealing with any pollution are established. 2. The fixed-wing surveillance should have the effect of preventing illegal behaviour. 3. The fixed wing surveillance should at all times be aimed at high-risk activities.
Sweden	Pollution, fishery, ship routings, border, customs-control and search-and-rescue.
UK	The Maritime and Coastguard Agency (MCA) is responsible for minimising the risk of pollution of the marine environment from ships and, where pollution occurs, minimising its impact on UK waters, coastlines and economic interests. The MCA aerial surveillance flight programme varies from month to month to avoid becoming predictable, so as not to undermine the deterrent effect. Aerial surveillance is generally targeted on the areas posing the greatest risk, such as the major shipping routes and around offshore installations.

European Maritime Safety Agency

Lisbon, 20 May 2010

Subject: North Sea CleanSeaNet Service statistics 2009

Introduction

Since April 2007, the EMSA's CleanSeaNet service supports all Member Sates parties to the Bonn Agreement with SAR satellite images for the detection of oil discharges. CleanSeaNet images are ordered per planning region according to each Member State's coverage requirements.
The CleanSeaNet "North Sea" planning region covers most of the Bonn Agreement area. This report presents CleanSeaNet data for the North Sea[1] from 1 January 2009 until 31 December 2009.

CleanSeaNet delivery statistics

In 2009 CleanSeaNet delivered for the North Sea region a total of 326 images: 158 from ENVISAT, 82 from Radarsat-1 and 86 from Radarsat-2.

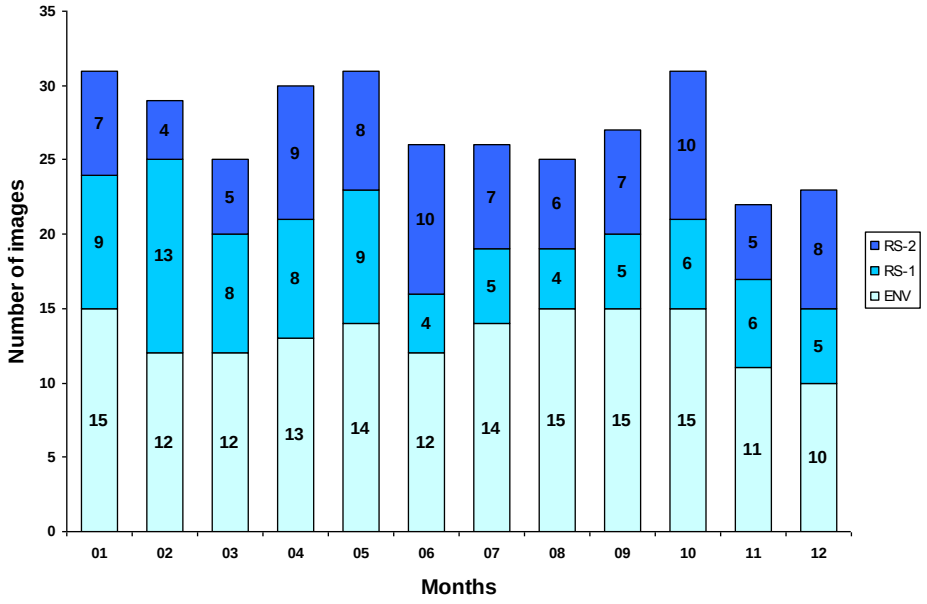


Figure 1 – CleanSeaNet delivered images for the North Sea region

[1] The English Channel is part of the CleanSeaNet "Atlantic" planning region. Data for the whole Atlantic region are available but the possibility to extract data belonging to a sub-area defined by the user will only be available with the 2nd generation of CleanSeaNet.

In 2009, 360 possible oil spill detections have been reported. The monthly distribution can be seen in figure 2.

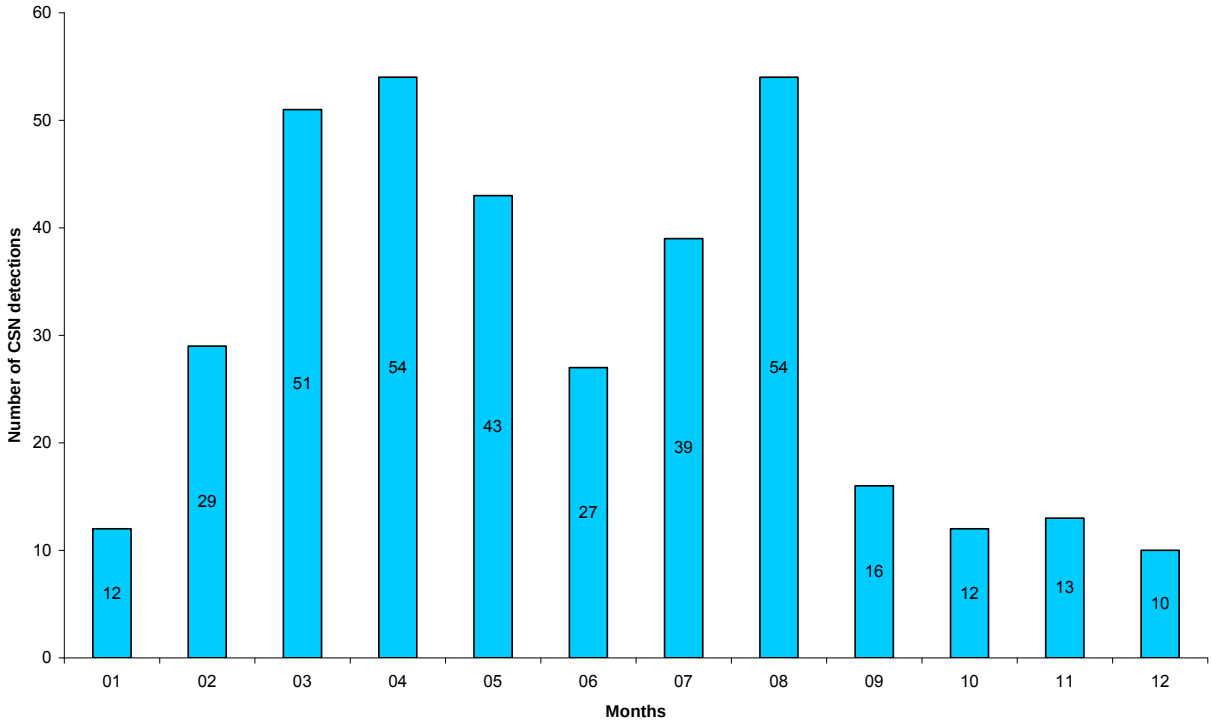


Figure 2 – Monthly distribution of CSN possible oil spills detections

Verification activities

Countries in the North Sea are active users of CleanSeaNet and provide feedback of verification activities on a regular basis. In 2009, of the 360 CSN oil indications Member States provided verification actions for 139 (about 39%) of which 28 (20%) where confirmed as being mineral oil.

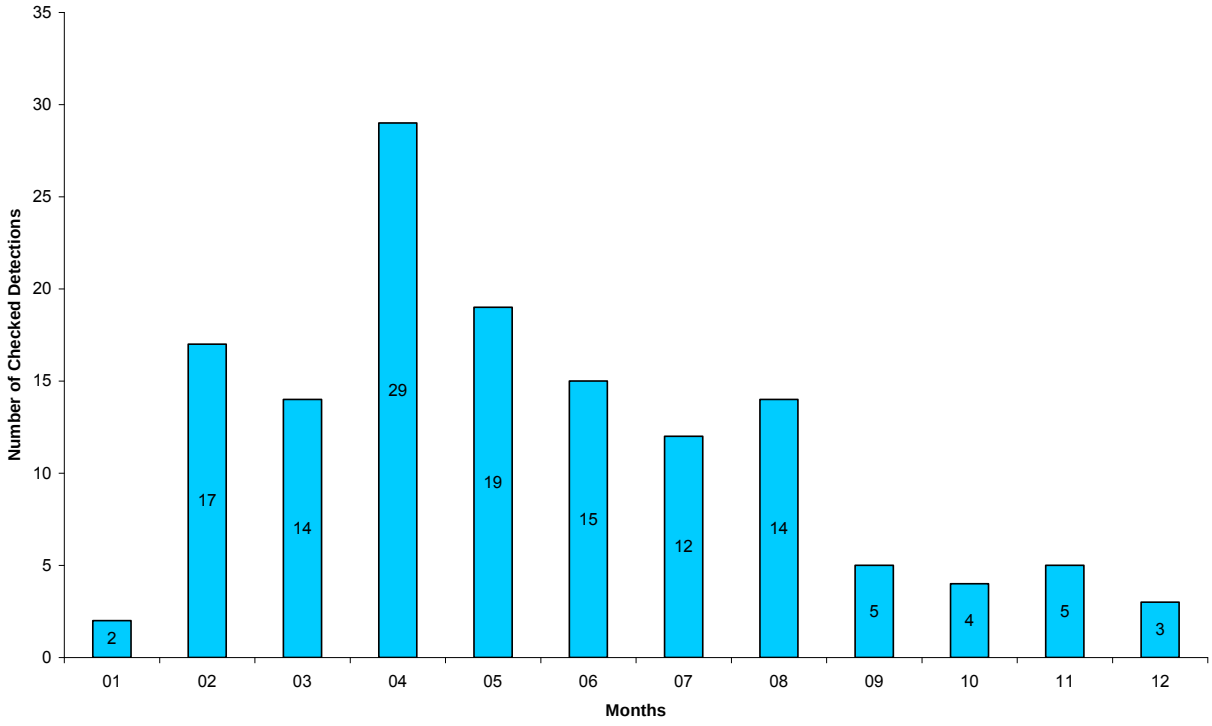


Figure 3a – Monthly distribution of detections checked
(Source: Feedback provided by Member States and stored in the CleanSeaNet database)

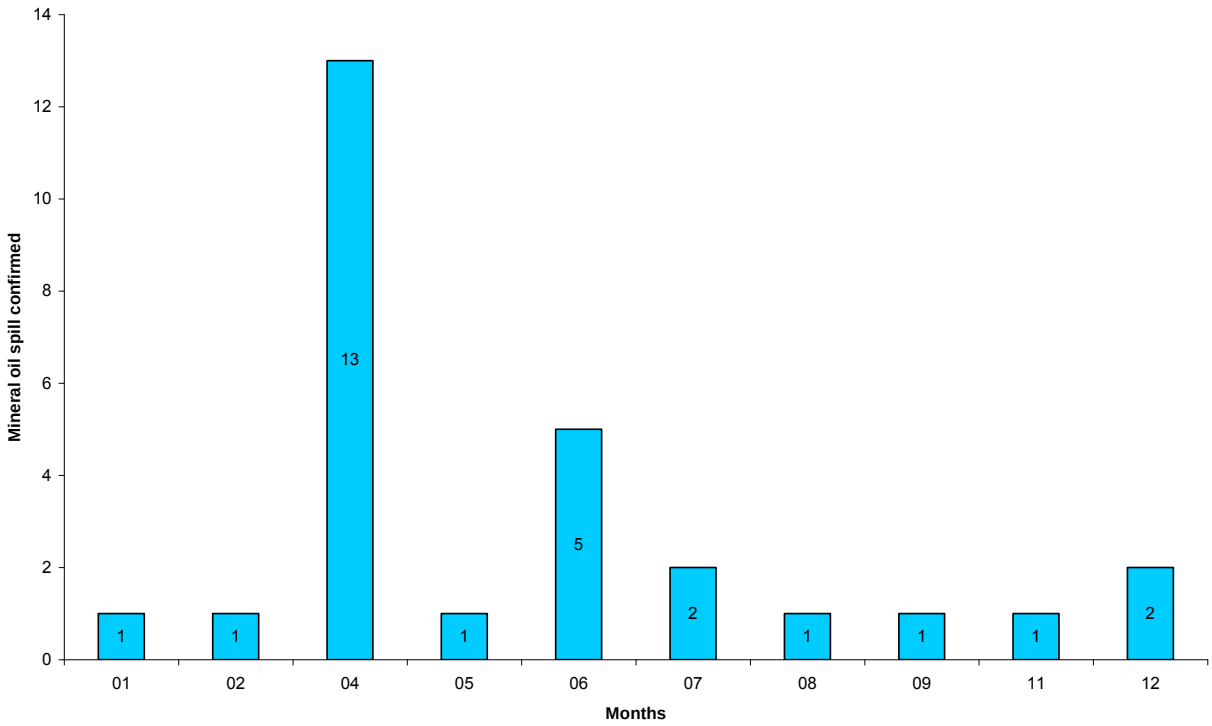
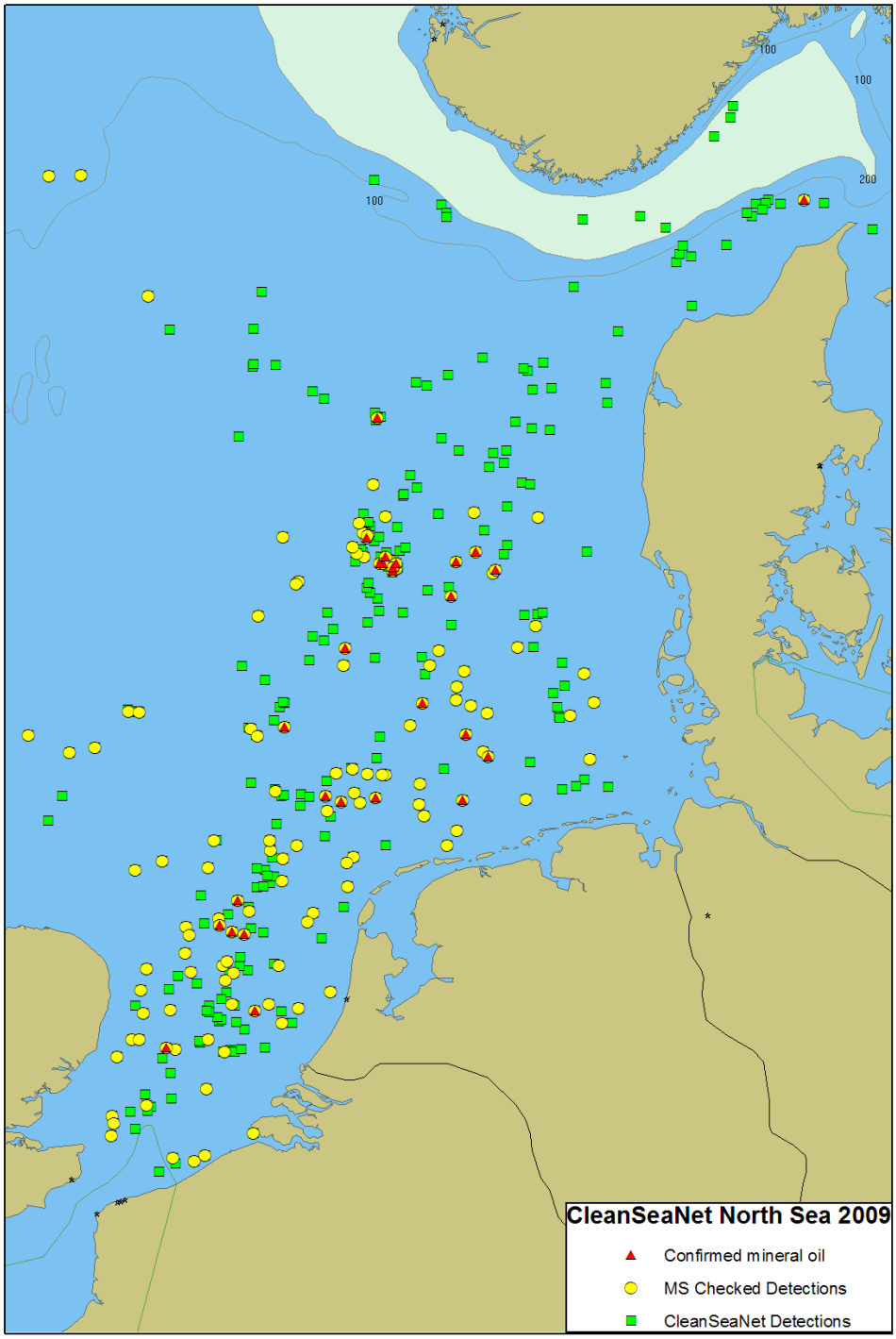


Figure 3b – Monthly distribution of detections confirmed as oil spills
(Source: Feedback provided by Member States and stored in the CleanSeaNet database)

The map below gives an overview of the distribution of possible spills detected by

CleanSeaNet in the North Sea and of the verification activities carried out by the Member States.



User commitment and feedback is essential to the continuous improvement and development of the CleanSeaNet service. EMSA would like to thank the Member States parties to the Bonn Agreement for their contribution to the European satellite oil pollution monitoring service.