



## IMCO

### INTERNATIONAL CONFERENCE ON MARINE POLLUTION, 1973

#### WORLD OPERATION - MESSAGE IN THE SEA

The Government of France has requested that the attached document concerning the world operation "Message in the Sea" be distributed for information at the 1973 International Conference on Marine Pollution.

The document contains a number of maps drawn up by the Central Hydrographical Service of the French Navy and information on the behaviour and distribution of surface pollution by winds and currents.

Participants of the Conference are also informed that on 11 December 1972 a new operation "Message in the Sea" was launched from the Atlantic and Pacific Coasts of Panama and from Cape Horn with the assistance of the navies of Panama and France.

This information was made available to the Sub-Committee on Marine Pollution at its fifteenth session (MP XV/6/3) by the International Union of Official Travel Organisations (IUOTO). The outcome of the operation will be brought to the attention of Governments when it becomes available to the Organization.

## WORLD OPERATION - "MESSAGE IN THE SEA"

Submitted by the Government of France

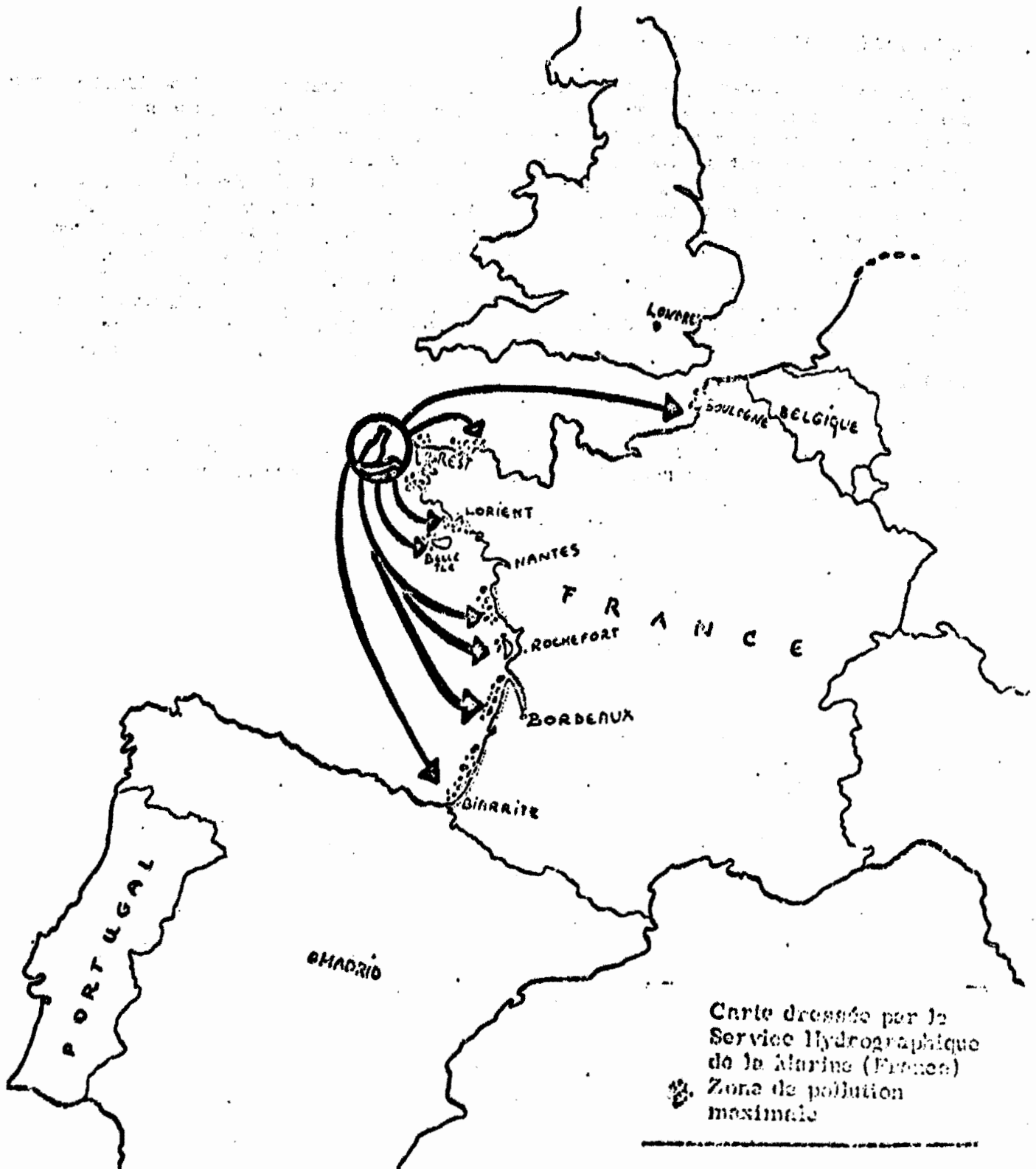
### I. HOW A MESSAGE IN THE SEA OPERATES

A "message in the sea" is a blue plastic envelope measuring 33 x 28 centimetres and weighing about 10 grammes. It virtually behaves like a bottle in the sea. The messages are thrown in quantities of 3 to 250,000 units into the ocean where, because of their number, they look like a sheet of fuel oil. The points of immersion are determined by the hydrographical service of the French Navy which is responsible for the scientific control of the operation from an oceanographical point of view. The message moves in time with the surface currents, themselves caused by the winds. It is washed up on a beach or caught in fishing nets. The envelope (blue to escape birds who are blind to that colour) contains a message, written in several languages for the discoverer, who is given full instructions (address where it should be returned, place, date and time of the discovery etc.). The message in the sea floats right on the surface of the water where it cannot be lifted by the wind.

Since 1966 the "messages" have been manufactured by the UCB - SIDAC which created Freshpak for them, an unsinkable material which guarantees them longer life. The attached maps show the places and dates of immersion and the places where they are washed up.

BREST

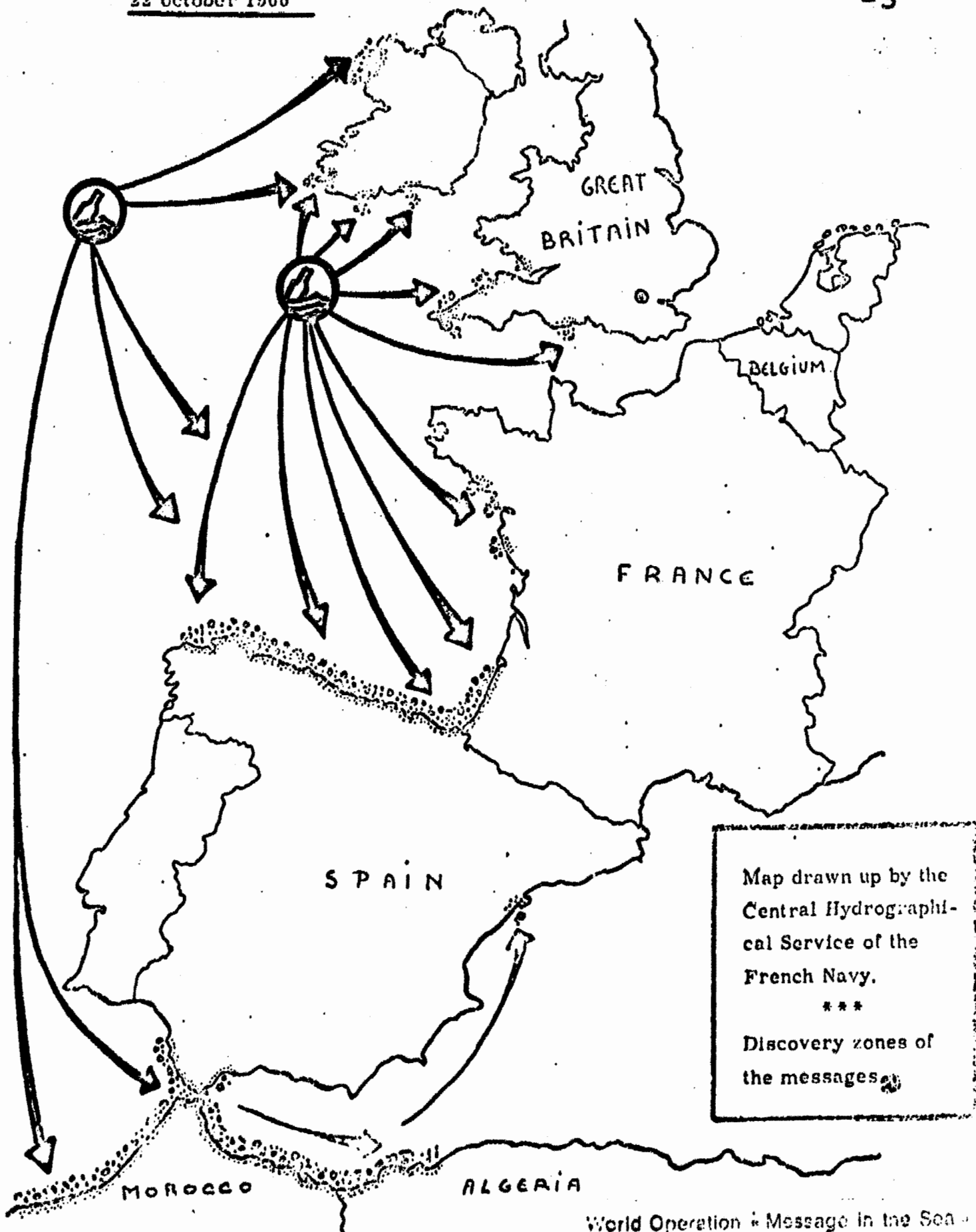
15 Octobre 1966



IMMERSION : ATLANTIC N.E.

22 october 1966

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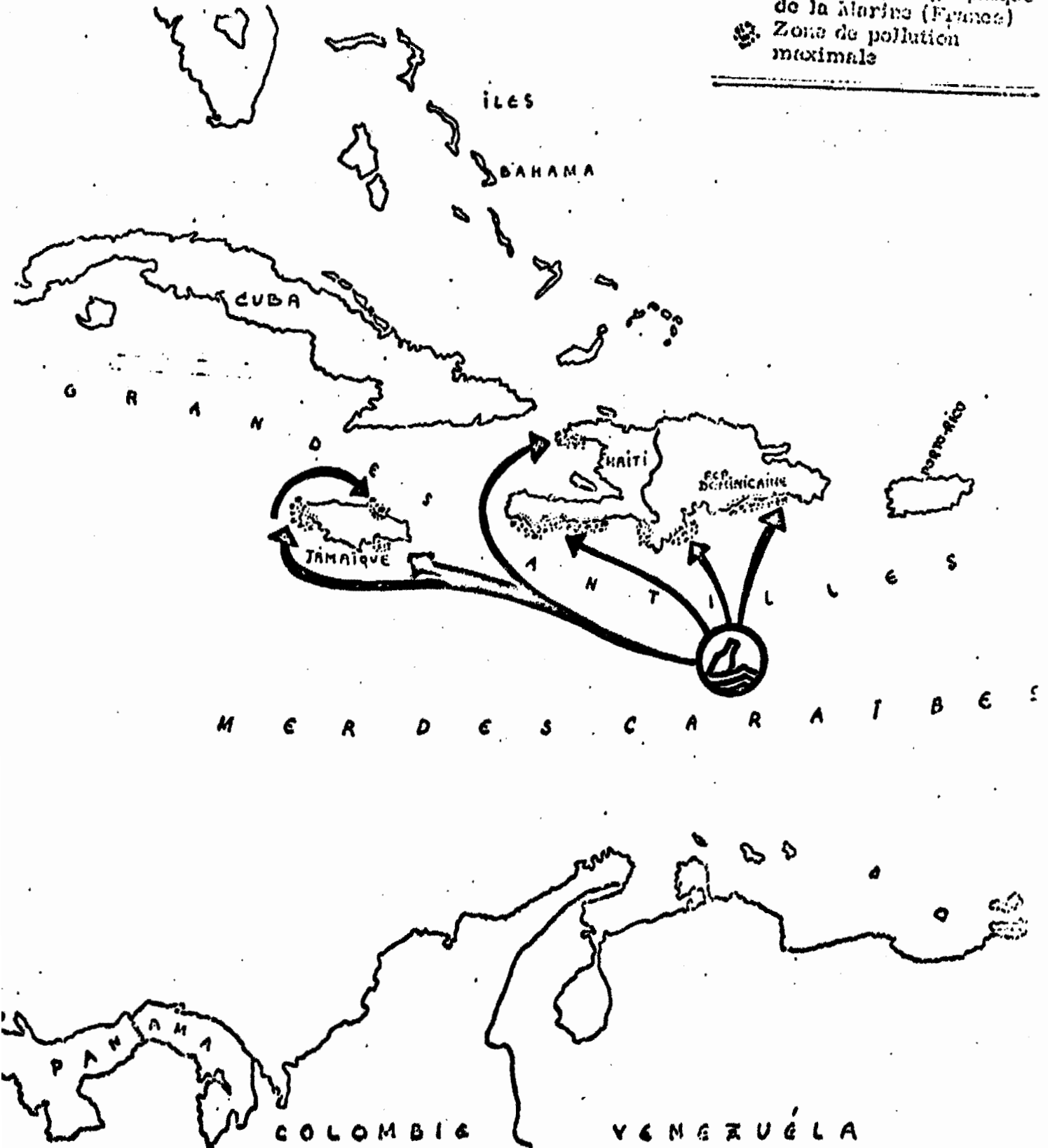


ANTILLES

25 Décembre 1966

-4-

Carte dressée par le  
Service Hydrographique  
de la Marine (France)  
Zone de pollution  
maximale



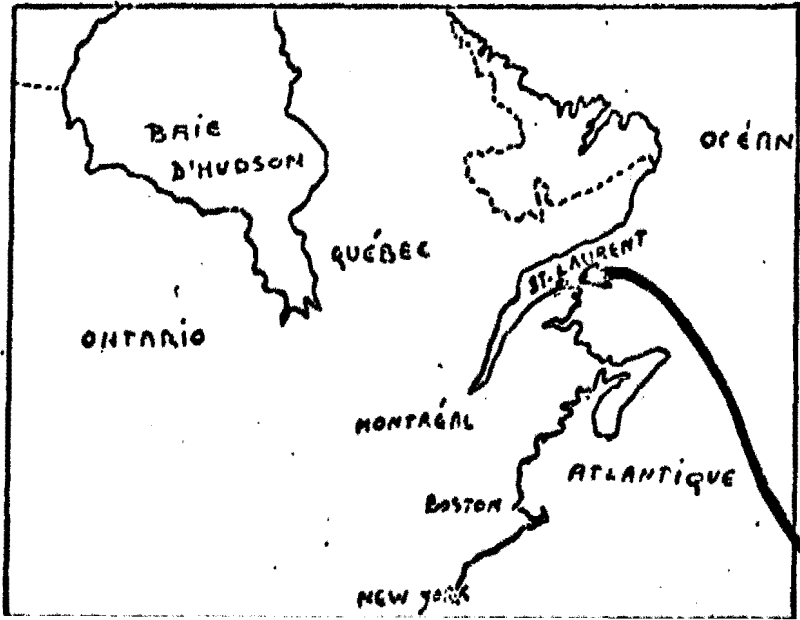
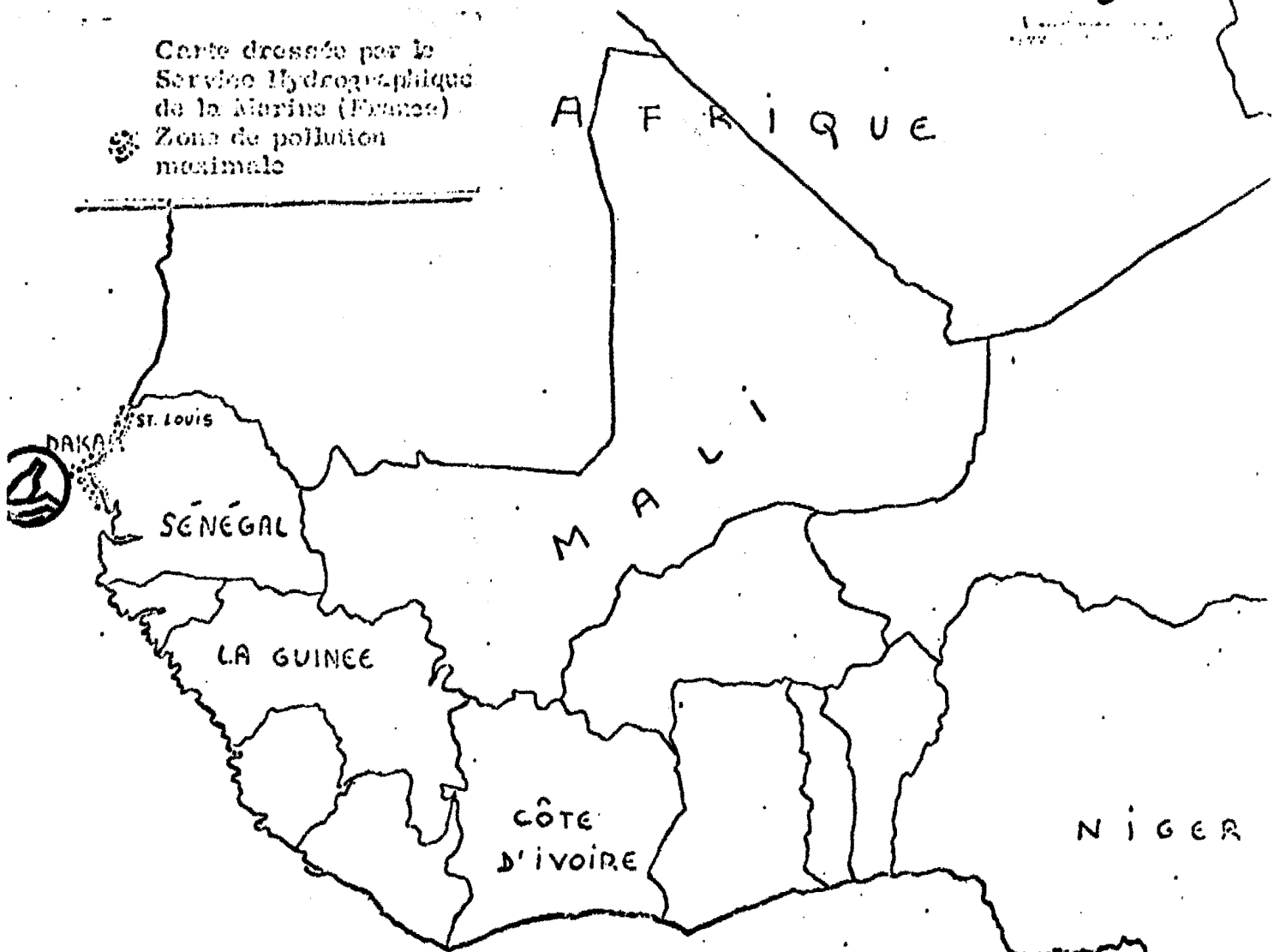
DAKAR - SENEGAL

28 Mai 1967

-5-

Carte dressée par le  
Service Hydrographique  
de la Marine (France)

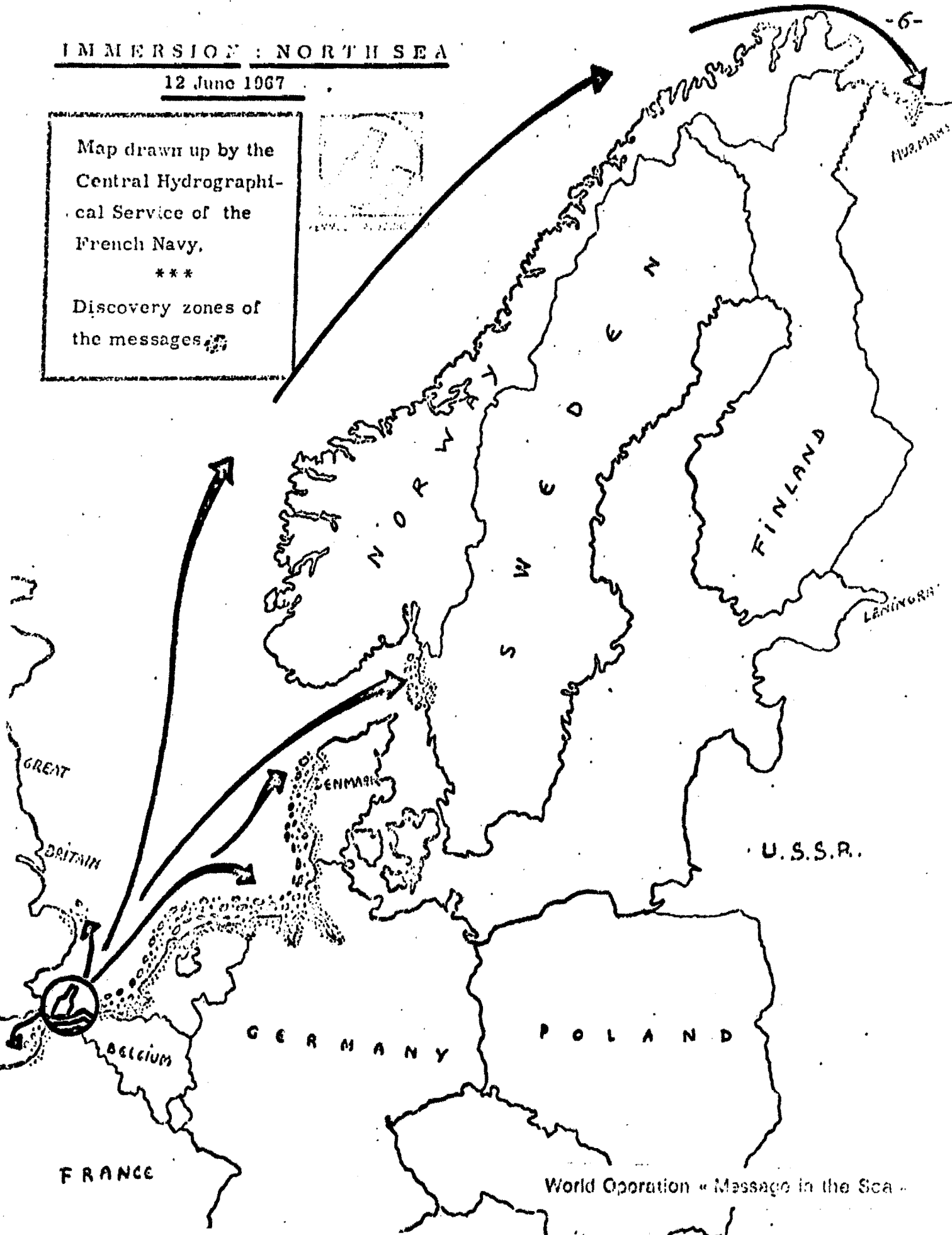
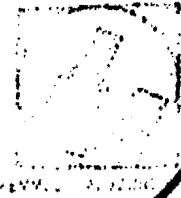
Zone de pollution  
maximale



IMMERSION : NORTH SEA

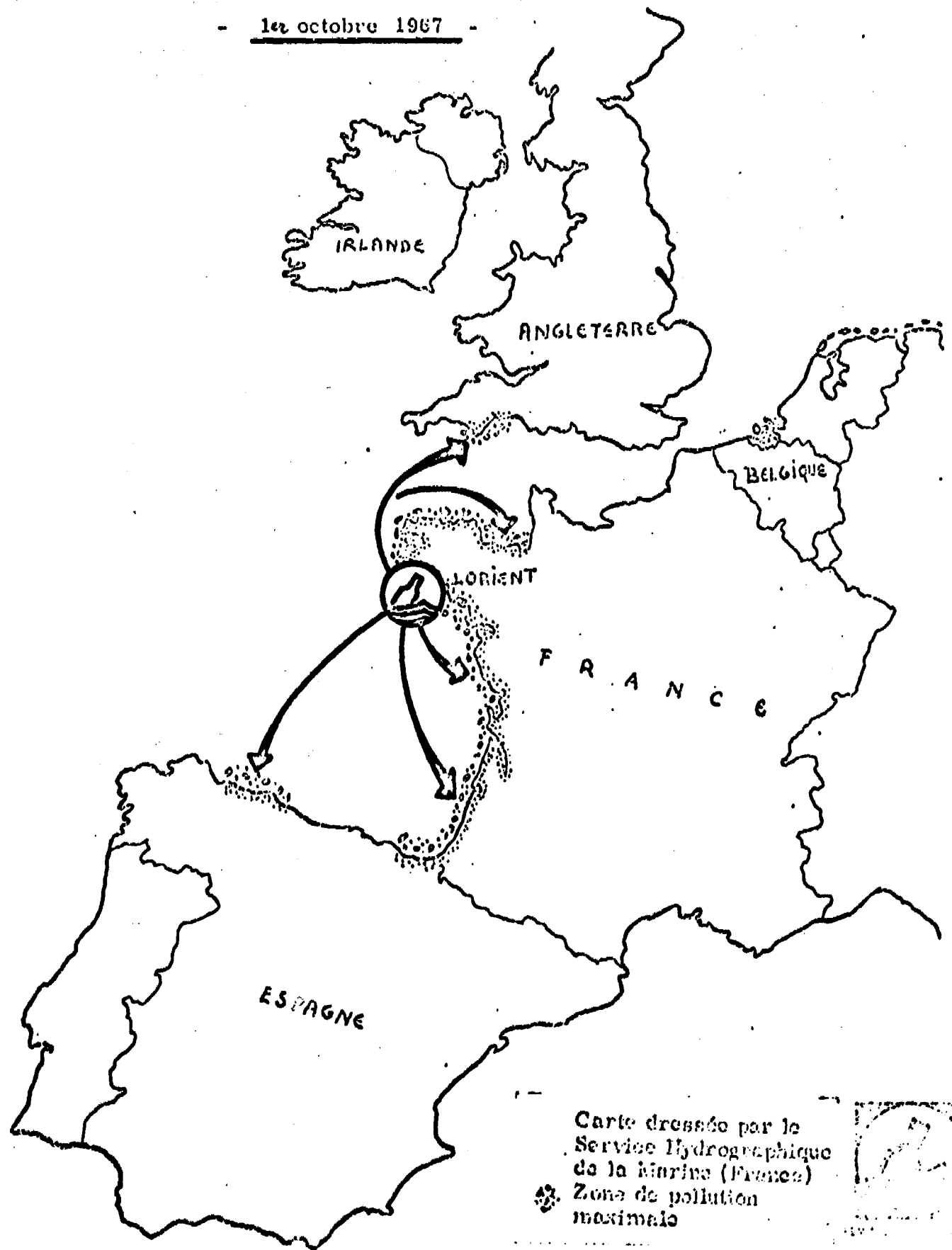
12 June 1967

Map drawn up by the  
Central Hydrographi-  
cal Service of the  
French Navy.  
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Discovery zones of  
the messages

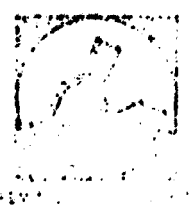


IMMERSION : LORIENT  
GOLFE DE GASCOGNE

- 1er octobre 1967 -



Carte dressée par le  
Service Hydrographique  
de la Marine (France)  
● Zone de pollution  
maximale

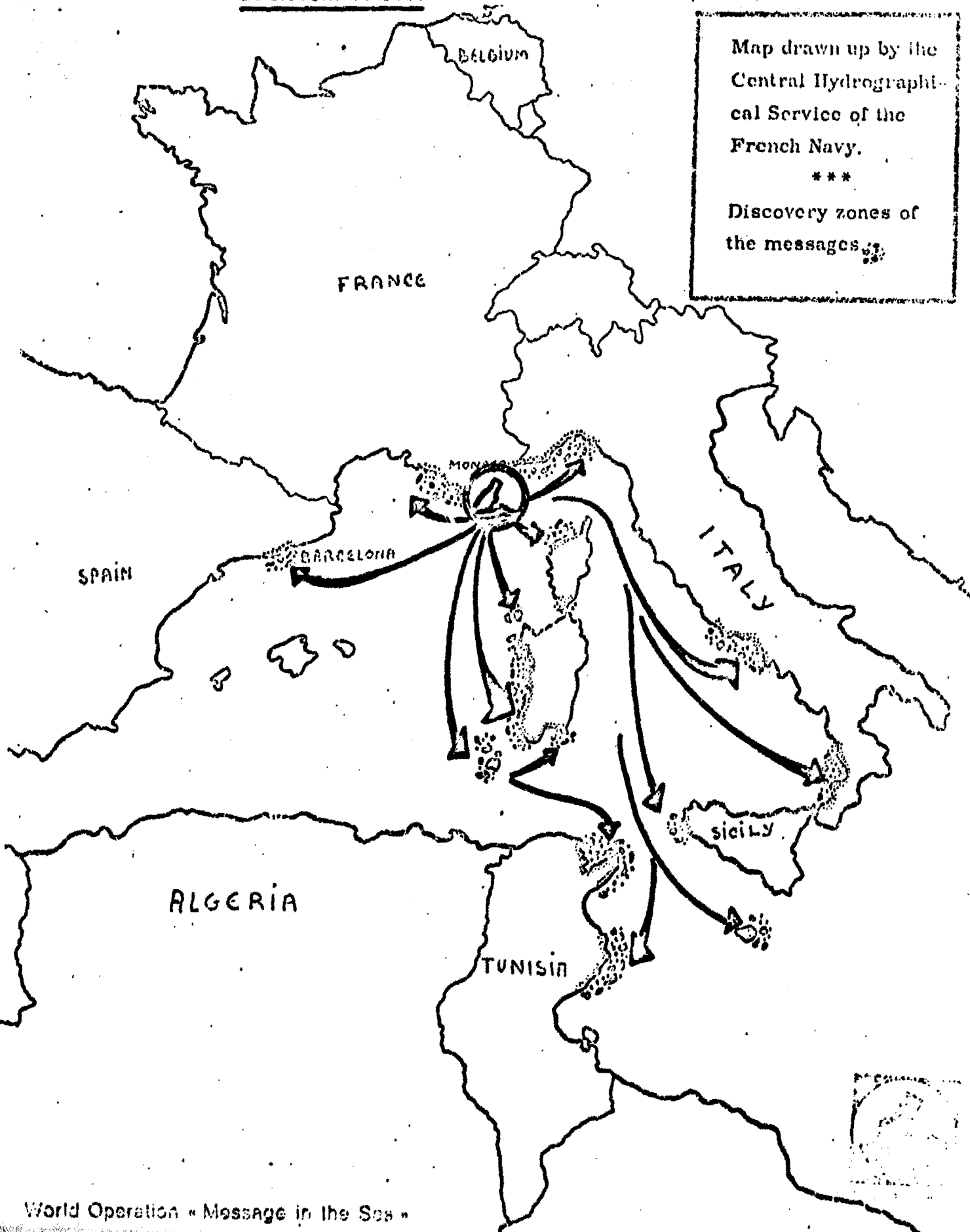




IMMERSION : THE MEDITERRANEAN

20 November 1967

Map drawn up by the  
Central Hydrographical  
Service of the  
French Navy.  
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Discovery zones of  
the messages



STRASBOURG

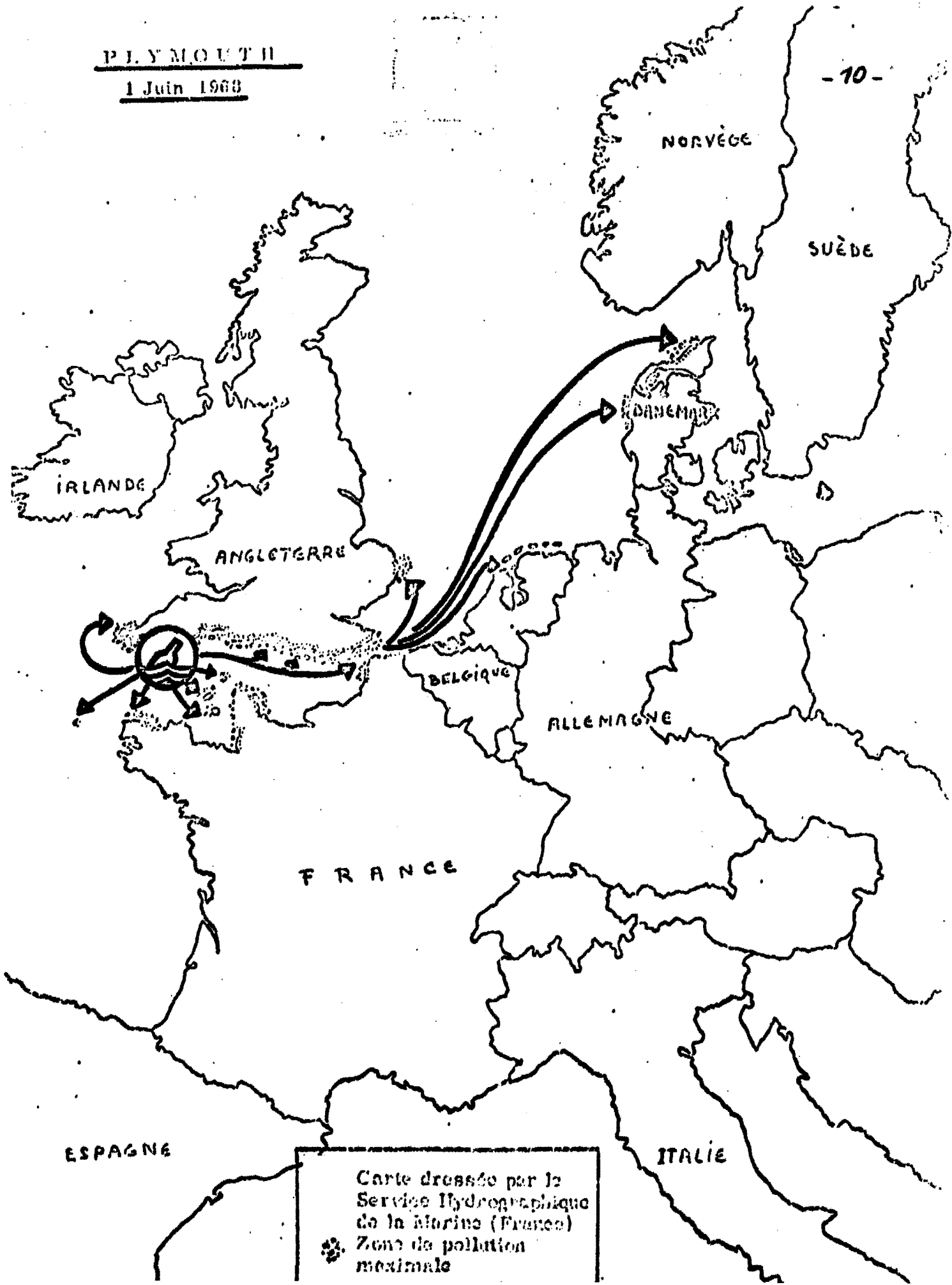
5 Mai 1968



Carte dressée par le  
Service Hydrographique  
de la Marine (France)  
☼ Zone de pollution  
maximale

PLYMOUTH II

1 Juin 1968

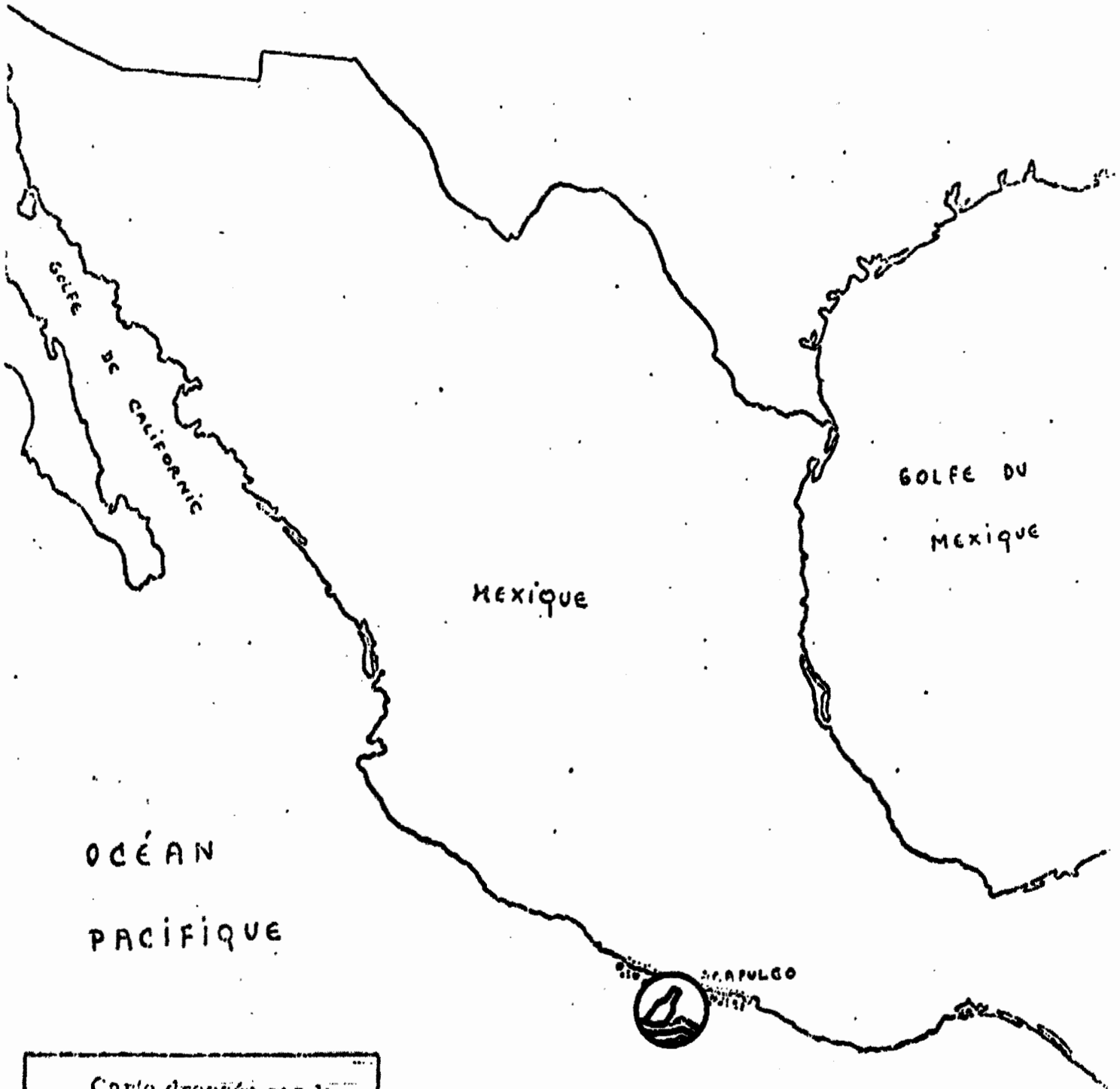


ACAPULCO

18 Octobre 1968

-11-

ETATS UNIS

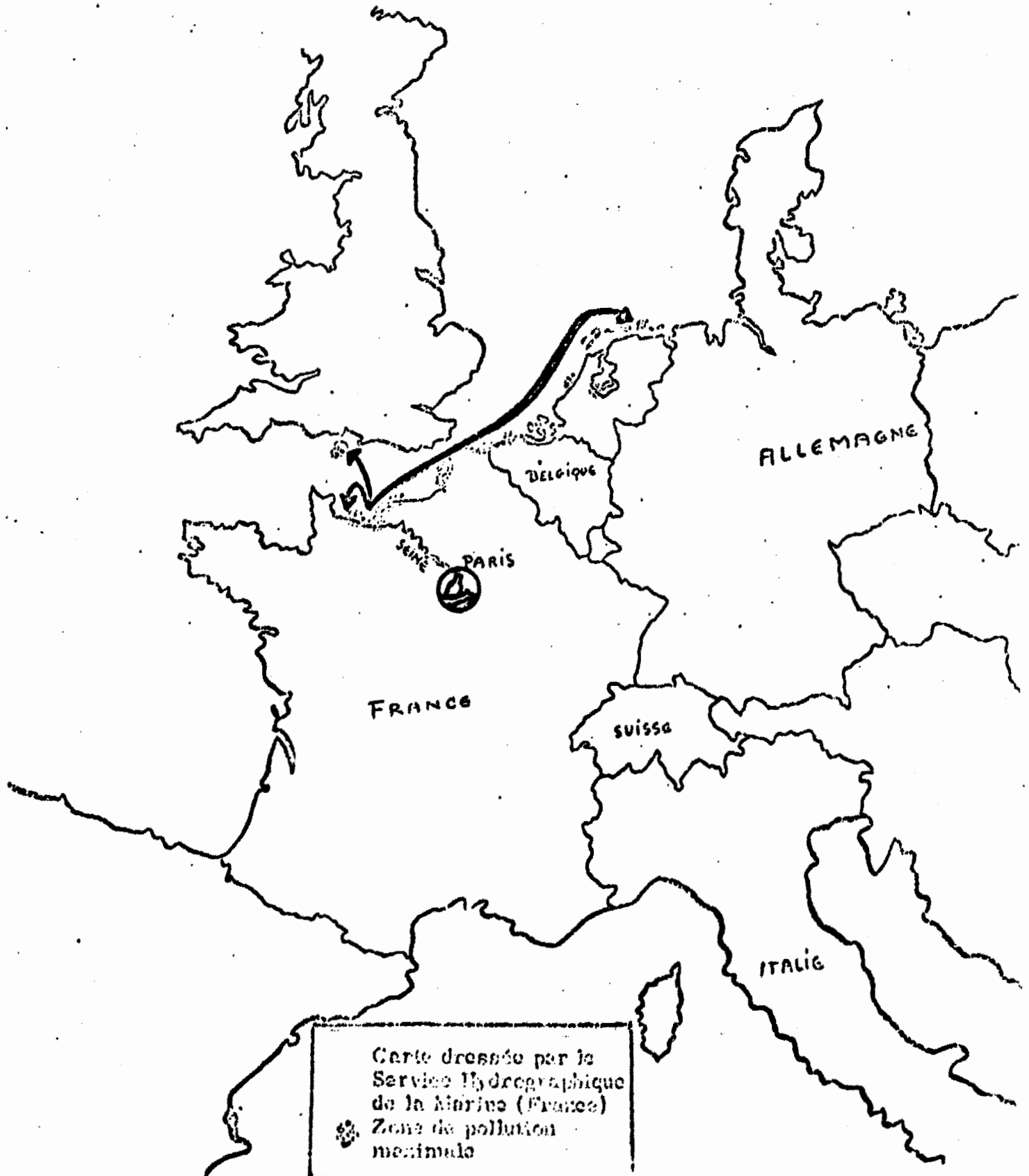


Carte dressée par le  
Service Hydrographique  
de la Marine (France)  
Zone de pollution  
maximale



PARIS - SEINE

25 Septembre 1969

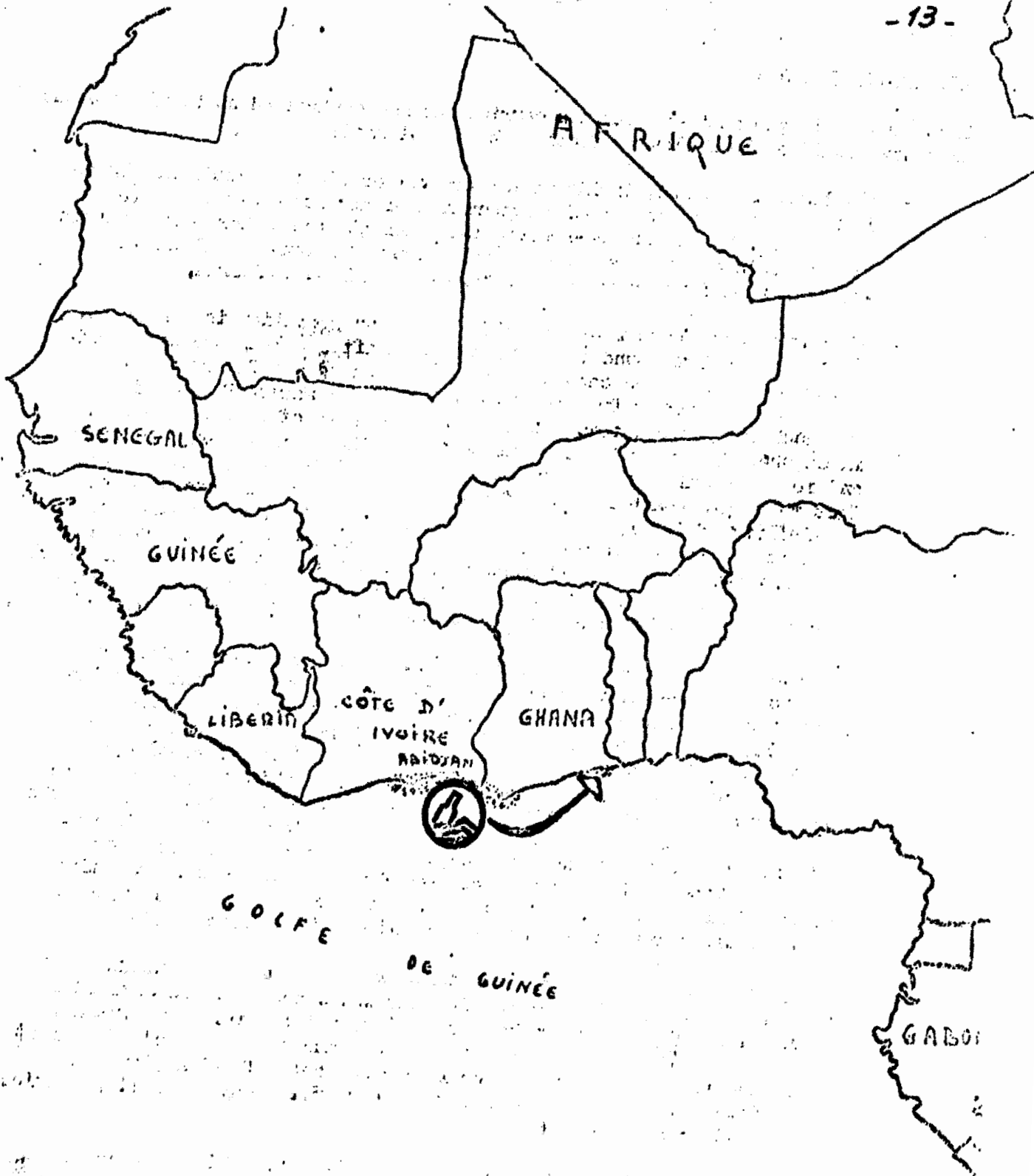


Carte dressée par le  
Service Hydrographique  
de la Marine (France)  
☼ Zone de pollution  
maximale

GOLFE DE GUINÉE

16 Janvier 1970

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Carte dressée par le  
Service Hydrographique  
de la Marine (France)  
Zone de pollution  
maximale

## II. GENERAL CONCLUSIONS

The "message in the sea" experiments carried out and controlled up to the present time have enabled the following facts to be established:

- all beaches, coasts, fishing zones are vulnerable to pollution. There is practically no geographical guarantee of absolute protection (as shown, e.g. by the France-America immersion 400 miles from the southern tip of Ireland: the messages passed through the Straits of Gibraltar and were washed up on beaches in Morocco, Spain and Algeria.
- Time is not an insuperable obstacle as far as pollution is concerned. Many messages are found years later, often after a long and difficult journey. Such is the case of a message immersed off Ostend and found by a research worker from the USSR Institute of Marine Biology in Murmanak two years later. Such too was the case of a message immersed in October 1966 from the Ireland sector of the France-America immersion and found in July 1972 on the beach at Tréogat in Audierne Bay. The fact that this beach is part of a tourist area formally excludes the possibility of its lying there for six years without being discovered. The beach is too popular. This message therefore must have had a long and dangerous journey, doubtless being washed up before on another beach where it would have stayed in one of the "storage areas", the existence of which has also been discovered by the "message in the sea" experiments.
- The seas have storage areas where pollutants, particularly from oil tankers, can accumulate until they are diverted to some coast by the winds changing direction. This has been proved by the immersion of June 1964, 115 kilometres from the Point of Raz. The messages stayed for 215 days in a storage area 80 miles north of Cape Finistère and 150 miles north-north-west of the Cap de Peñas; this was proved by the discoveries made by fishermen. The messages were then washed up in the Biarritz - San Sebastian area. The origin and loss of permanence of this storage area were due to changes in the wind conditions over Eastern Europe, which had not occurred for about 40 years. Depending on the winds the pollution in these storage areas can grow for years before being thrown up on some coast and causing a catastrophe.
- Relay currents exist, phenomena which are described by oceanographers as "large -scale turbulence". The seas would appear to be covered by an infinity of railway tracks, turntables, points etc. A pollutant, floating on the surface only needs to meet another "section" of current to change its journey, sometimes in a spectacular fashion (doubling back etc.). Through the interplay of these relay currents all pollution possibilities are facilitated.
- There is such a thing as a "leap-frog" pollution. Pollutants washed up on a beach can partly be taken up again by the next tide and carried to another beach. This emphasises the large-scale local pollution by industries, artisans or seaside visitors (tourists, users of motor-boats who clean them and empty their waste on the beach).

- Generally speaking there are two major aspects of pollution phenomena: concentrated action which causes large-scale pollution first of all along part of the coast and "fringe action" which causes a larger part of the coast to be riddled with pollutants but less densely. In some cases, the latter may be a consequence of the former.
- Pollution Phenomena know no frontiers.

Pollution is an international problem concerning pollution caused at sea just as much or more than pollution in streams and rivers. The pollution in streams and rivers undoubtedly leads to the pollution of beaches of neighbouring countries (immersion from Strasbourg) which causes pollution not only along the Rhine but also on the south and north coast of Holland (the Island of Terschelling). The general trend of the drift points to the possible pollution of northern countries (Denmark and Sweden) confirmed by experiments carried out in the North Sea. Immersion from Paris polluting the banks of the Seine also pollutes the French coasts, and at the present time there is a clear tendency of drift to the north-east, where messages immersed in Paris overtake even slightly the messages immersed in the Rhine, washing up on the Island of Ameland.

- Pollutant-carrying currents cross many fishing areas which are essential for the survival of the majority of fishermen, often being situated not far from the coasts, therefore easily accessible.
  - The principal victims of sea pollution are countries where fishing on a small scale is widely practised. The fishing areas easily accessible to the fishermen without motor-boats are generally more polluted than those further away, because the general trend is for pollutants to accumulate near to coasts. If these countries have tourist ambitions they are doubly penalized.
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