USE OF OFFSHORE PLATFORMS FOR OTHER ACTIVITIES

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Summary

Dutch agencies and services use offshore platforms for collecting hydro-meteo data, establishing transmarine beamed telephone links, performing tests and as light platform.

Abstract French

Des institutions néerlandaises utilisent des plateformes offshore pour mesures hydrologiques et météorologiques, pour réaliser des communications téléfoniques, pour faire des expériences et comme fanal.

1. Introduction

Offshore platforms are also used for purposes other than those connected with oil and/or gas winning.
Dutch agencies and services use them for:

(a) collecting hydro and meteo data;
(b) establishing transmarine beamed telephone links;
(c) as light platform;
(d) conducting trials.

This can be done with purpose-built platforms, or one can use platforms erected for oil and/or gas winning purposes.

This contribution enumerates the platforms currently performing such functions and the purposes for which they are used. Finally, future uses of these platforms will be outlined.

2. Platforms

The following platforms are used by Dutch agencies or there are plans for using them (fig. 1).

Light Platform Goeree (L.E.G.) In replacement of the Goeree lightship, the Dutch Pilot Service has placed a platform with a light-structure near the entrance channel to the Rotterdam dock area. In addition, this platform is a part of a system whereby hydro-meteo data are collected.

Measuring Platform Noordwijk (M.P.N) Public Works Department has purchased an offshore platform from a company which had been using it for TV broadcasting outside territorial waters. After renovation this platform was equipped for conducting all manner of tests. In addition, hydro-meteo data can be collected.

K 13 In this block of the Dutch sector of the Continental Shelf Pennzoil operates a platform. On this platform hydro-meteo data are collected.

AUK and Ekofisk The platforms located in these fields are operated by Shell Expro and Phillips Petroleum Company respectively. Within the framework of a project for collecting hydro-meteo information there is also a need for data from a point in this vicinity. In the implementation phase now in progress these two locations are being considered.

3. Collecting data

For various purposes it is essential to have access to hydro-meteo data from points in the North Sea. Systems are operational or being built for that purpose. The principal use of the data is for:

- guiding the very large crude carriers (V.L.C.C.s) on their way to the Rotterdam/Europort docks;
- the Public Works Department's Stormsurge Warning Service;
- studies concerning and the subsequent construction and control of civil engineering works along the coast, such as port entrances and dikes.

The systems are:

(a) V.H.M.E. system

The Provisional Hydro Meteo Europort (V.H.M.E.) system was designed during the building of the new port entrance at Hook of Holland for the Rotterdam/Europort dock area. In particular, there was a need for up-to-the-minute information concerning tide and waves. This was also of importance in connection with the use of special work vessels. Moreover, the information was used for guiding the V.L.C.C.s. Since completion of the port entrance the latter service has become the main function of the system. With the aid of sensors on the L.E.G. and wave-measuring buoys positioned in the vicinity of the entrance channels information is automatically obtained concerning, inter alia, atmospheric pressure, wind, air and water temperatures, tide and waves. These data are transmitted to the mainland via a radio link. The Royal Netherlands Meteorological

Institute (K.N.M.I.) uses much of this information for drawing up its forecasts. Much of the information - after processing - is also used directly. A feature of the use of platforms is that data are obtained automatically on line.

(b) S.V.S.D. system

The Stormsurge Warning Service (S.V.S.D.) system on the North Sea is being established for carrying out the task of this service. This Public Works Department service is charged with giving warning of storm surges. Because of the low level of a part of the Netherlands, constant attention has to be paid to the sea defences, dikes, weirs etc., especially at the time of storm surges. The authorities controlling the sea defences must be warned at the earliest opportunity. The Royal Netherlands Meteorological Institute is responsible for preparing forecasts of the meteorologic effects on the astronomic tide. To do this, the Institute must be able to obtain atmospheric pressure data at several fixed points in the North Sea.

To enable the necessary hydro-meteo data to be collected, the Public Works Department, with assistence from Pennzoil has installed a number of sensors to this company's platform in block K 13. The automatically collected data are transmitted to the Netherlands by telephone line.

For a more northerly monitoring point the Department is considering a platform in the AUK field and in the Ekofisk field. The component of the system in this part of the North Sea is not yet operational.

As with the V.H.M.E. system, this system provides for automatic collection of the data on line. The up-to-the-minute tide information is used directly by the S.V.S.D.

Both systems which are being or will be built by the T.P.D. (Institute of Apllied Physics T.N.O.-T.H.) by order of Public Works Department are used for other purposes as well. In this context we would mention

the study and subsequent building and control of the works in the East Scheldt estuary (one of the largest estuaries in the south of this country). These works are part of the Delta project introduced after the 1953 flood disaster. On account of the system chosen for carrying out these works, it will be essential to have wave data emanating from the northerly measuring points. This will make high demands on the data collecting systems.

4. Beamed telephone links

The Netherlands P.T.T. has established a number of beamed telephone links on the Dutch sector of the Continental Shelf, near the N.W. coast. Beam transmitters have been installed on platforms owned by oil companies (these are not included in the list in chapter 2). The P.T.T. is currently studying a plan for placing a platform at a location where as yet there is not one, as part of the improvement of the communication system.

5. Light island

The function of the former Goeree lightship has now been taken over by a purpose-designed platform (located near the entrance channel to the Rotterdam/Europort dock area). As mentioned earlier on, this L.E.G. also performs a function in the V.H.M.E. system. Although it does not really belong to the description of the use of platforms as light platform, we would mention in passing that consideration has been given to the need for building a platform as part of the radar chain in the same shipping area.

6. Conducting trials

Public Works Department was in need of facilities for conducting various trials on a platform in the North Sea. As mentioned previously, an opportunity arose to purchase an existing platform. After reconditioning, this MeasuringPlatform Noordwijk was equipped for the purpose of:

- research and development of measuring sensors and techniques;
- collecting data for scientific studies;
- obtaining certain meteo and hydro data.

The automatically obtained data are transmitted by radio link to the shore. Depending on the type of research, measurements and suchlike can be carried out with the platform manned or unmanned.
A feature of this platform is that the sensors, which have to function in the water, are mounted on special sensor poles which can be hoisted up. This means that, without employing divers, the sensors can be placed in position and removed, and that maintenance is simple (see fig. 2 and photo).

A project is at present being carried out whereby a platform with wall sections is mounted on the underwater structure. On this platform various underwater tests can be performed, the walls enabling the divers to work longer, because they are protected against the current.

Several agencies and services are greatly interested in conducting tests on or with the aid of the Measuring Platform Noordwijk.

7. Future use

Even wider use can be made of platforms for collecting information than is done at present. Water quality data are a case in point. Public Works Department is studying ways and means of using fixed measuring installations for water quality control. This involves crucial questions concerning sensors and measuring techniques. Trials at the Measuring Platform Noordwijk are in preparation. Besides this, we are examining the question whether and, if so, to what extent existing hydro-meteo systems will have to be adapted and/or extended.

8. Conclusion

Dutch agencies and services use offshore platforms. These include platforms operated by oil companies as well as special platforms. Platforms are particularly useful for collecting hydro-meteo data. However, experience has shown that a number of difficulties in the area of instrumentation and transmission have yet to be overcome. Besides, it is not always possible to obtain permission to work on a platform of one of the oil companies at the right moment. This is because these companies have work of their own to do. However, the co-operation is certainly satisfactory.

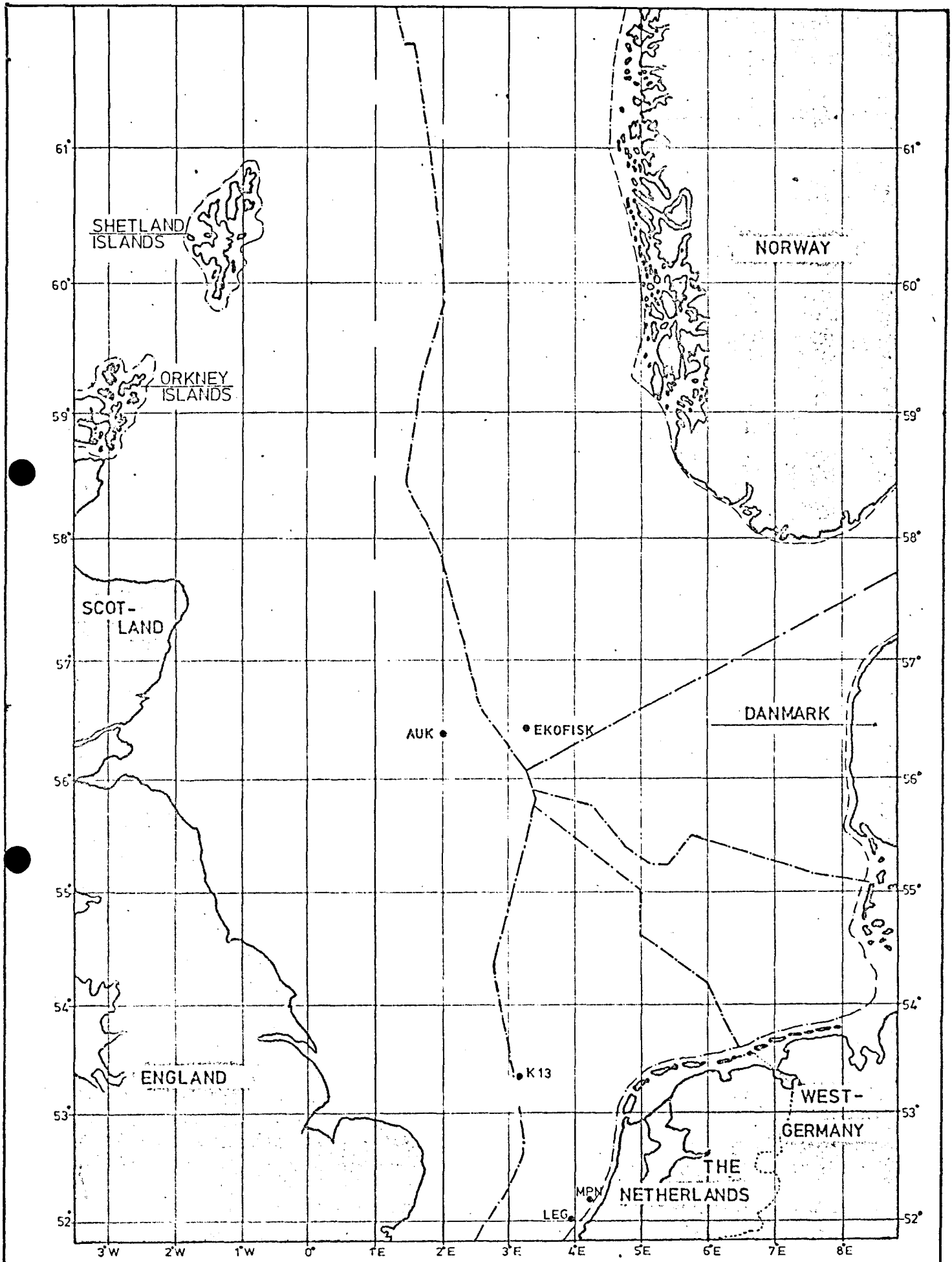


fig. 1 Platforms figuring in actual or planned automatic data systems.

MEASURING PLATFORM "NOORDWIJK"

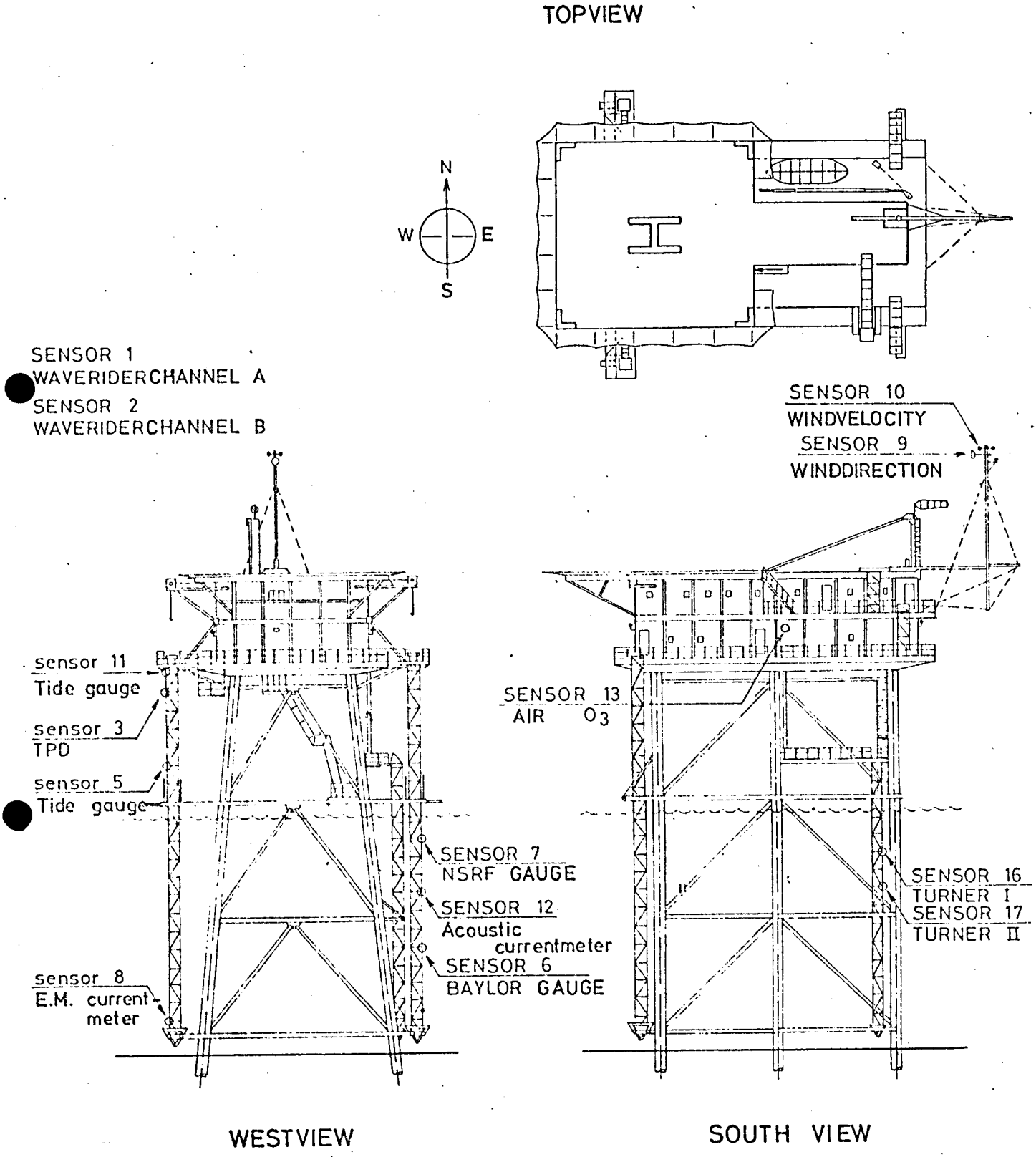
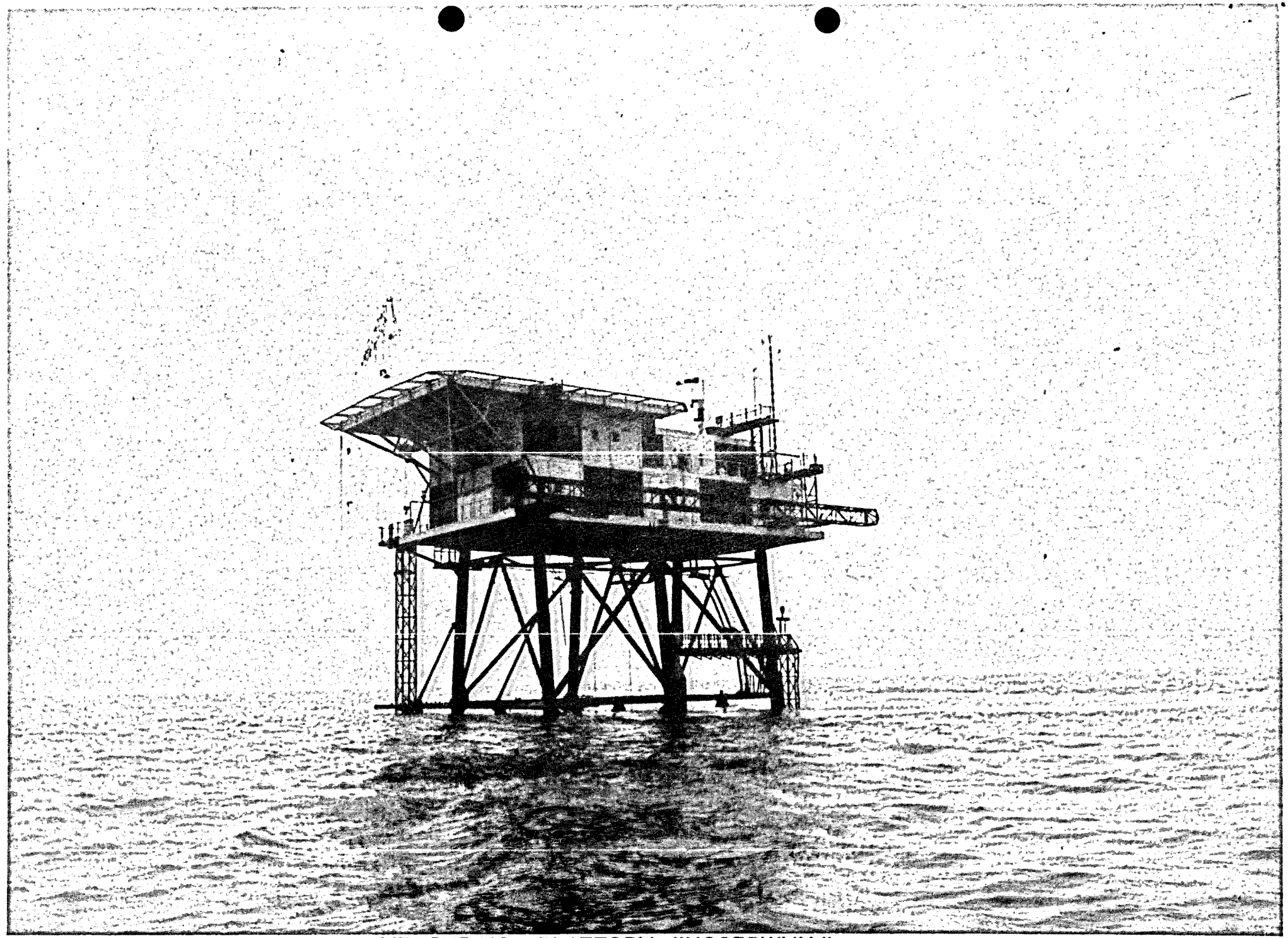


fig. 2



MEASURING PLATFORM "NOORDWIJK"

fig. 3