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On the Activities of the Synoptic Office in the Maritime Section of the State Hydrological and Meteorological Institute

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STAT

CURRENT ACTIVITIES OF THE SYNOPTIC OFFICE IN THE MARITIME SECTION OF THE STATE HYDROLOGICAL AND METEOROLOGICAL INSTITUTE AT GDYNIA

Sylwia [illegible]

(The authoress is director of the synoptic office in the Maritime Observatory at Gdynia. The observatory is the maritime section of the State Hydrological and Meteorological Institute at Warsaw.)

Meteorology is a field of science which has direct application in life. No airplane will take off from an airport and no ship will leave its port without a meteorological communique. Each State bordering on the sea, therefore, creates a system of ports which provide meteorological service to ships and fishing boats.

Understanding the needs of shipping on our coasts, the State Meteorological Institute opened in 1920 a maritime section at Puck ([illegible]), which began meteorological work for the needs of our shipping in Poland. In 192[illegible], this maritime section was transferred to the port that was being constructed at Gdynia. The number of ships coming to Gdynia steadily rose, the commercial and naval fleets were growing, and the cooperation of the synoptic office with the port also developed well.

The synoptic office of the maritime section

station on our coast whose up to now is the only [illegible] information on the foreseeable task it is to issue information on the foreseeable state of the weather in a given sea area to the captain's office in the port, to ships, and to fishing vessels. This work has great importance for the port, because a timely warning about the [illegible] at sea will save a fish- [illegible] [illegible] and causes wreck- [illegible] [illegible]. A [illegible] during winter [illegible] [illegible] conditions among the ice of [illegible] [illegible] [illegible] synoptic [illegible] sea. [illegible] [illegible] period in the ice of the sea.

[illegible] order to maintain its [illegible], the synoptic [illegible] established radio contact with all [illegible] [illegible] regular meteorological radio- countries and received regular meteorological radio- grams which are the basic material for working out a synoptic map. Up to September 1939, three synop- tic maps were made daily. A synoptic map was issu-

[illegible] about 1 p.m. for the use of the port captain's office, the fleet, shipping companies, etc. Until September 1939, the synoptic office broadcast a [illegible] of the weather for the southern Baltic in Polish and English for ships over the radio station of the Polish Navy.

As the [illegible] section developed, there were established warning points along the coast where warning signals were posted against strong winds. Up to the year 1939 (September), there were active warning points at Gdynia ([illegible]), [illegible], [illegible], [illegible], Jastarnia, and the Hel peninsula. In case strong winds were expected, the synoptic office issued to the warning points a signal based on the table of Polish warning signals.

Signal I announces the approach of winds in strength of [illegible] to [illegible] degrees on the Beaufort scale during the day by raising a black ball on the warning staff and at night by a red light. The approach of a gale, that is a wind with a strength of 7 to 11 degrees on the Beaufort scale, is announced by signals from II to XIII inclusively, depending upon the direction of the expected gale. These signals are given by day in the form of one or two black cones, with one or two flags hanging next to the cones, one of which shows the expected turn of

the wind in a direction agreeing with the movement of the hands on a clock whereas two flags show a turn of the wind in the counter clock-wise direction. At night, signals II to XIII are shown by raising two lights. Signal XIV announces the approach of a hurricane, that is a wind with a strength above 11 degrees on the Beaufort scale; during the day/ ~~xxxxx~~ two cones are raised, at night three lights are shown.

After the organization by the maritime section of observation points on the Polish coast for the conduct of ice observations on the waters of the Polish Baltic Sea, the synoptic office established contact with the Baltic states by radio, transmitting to them coded ice communiques from Polish waters. The Baltic states also reciprocated with communiques in code from their appropriate areas of water on the Baltic Sea. Ice communiques are the basic material for drawing of ice maps on the Baltic Sea. The synoptic office conducted the publication of ice maps during winter from 1927/28 to 193[illegible]. An ice map shows types of ice and the navigation conditions on the waters of the Baltic. It has tremendous importance, because it orients the captain of a ship about conditions for navigation in the farthest areas of waters covered by the Baltic. Receivers of this ice map for the Baltic

ies were the following: office of the port captain, the Polish Navy, the Gdynia-America Line, as well as other shipping companies. The entrance into Gdynia of the German occupants on September 14, 1939 interrupted for many years, almost six years, the work of the maritime section.

In June 1945, the maritime section at Gdynia was reopened by the State Hydrological-Meteorological Institute's directorship. The synoptic office was also opened with a very small body of personnel at the beginning. The first activity of the synoptic section was to reinstate contact by radio with all of the stations in [illegible]. During this time, units of the [illegible] service attached to the Soviet Army were conducting demining operations on the Baltic. The Soviet salvage society [illegible] sunken ships in the same area. The work of these units is dependent to a great extent upon the state of the weather at sea. For this reason, the synoptic office issues a synoptic map, announces a weather prognosis and warnings of strong winds. These Soviet units were the only recipients of this map and of the weather prognosis during the summer of 1945.

Beginning with September 1945, the weather prognosis for the southern Baltic and the Polish coast as well as warnings of strong winds was be-

ing received by the following: the captain's office at the ports of Gdynia and Gdansk, the command of the Polish Navy, the office for reconstruction of the port, the commandant of the war port at Gdynia, the Soviet mixture society "Prom," the Gdynia America Line and other shipping companies as well as the editors of local newspapers.

In 1956, the recipients of the gazette may be changed by the gazette office to go the following: command of the Polish Navy, Soviet units of the Polish garrison, the captain's office of the port of Gdynia, the Gdynia-America Line and other Gdynia companies. The number of subscribers to the gazette should be slightly growing.

The gazette was published by the gazette office and has the following items: 1) the gazette's circulation, 2) a chart of the hydrographic measurements, 3) a weather forecasts in Polish and English for the southern Baltic and the Polish coast.

The gazette office has planned increasing the weather forecasts for the southern Baltic to all ships by means of the Polish Navy's radio station. The forecast is given in open text in the Polish, Russian and English languages at 10:00 hours Greenwich Mean Time on the 64 meter wave length (recognition signal SRW).

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Beginning with September 1946, warning stations have been reestablished on our coast. At present, there are functioning nine such points: Gdynia (Maritime Observatory), Wladyslawow, Ustka, Leba, Kolobrzeg, Darlow, Chelmow, Swinoujscie, and Szczecin.

In October 1946, a campaign was started to open up observation points on the coast for the observation of ice on the Baltic near the Polish coast. These were established at Szczecin, Swinoujscie, [illegible], Kolobrzeg, Ustka, Leba, Hel and Gdansk. After working out a code and a key for the deciphering of indications on the type of ice and navigation conditions near the Polish coast of the [illegible], contact was made with the Baltic states in order to exchange keys as well as coded indications on the ice and navigation conditions on the Baltic. The severe winter of 1946/47 caused a rapid freezing of Baltic waters and, therefore, a considerable [illegible] for navigation. The synoptic office reestablished publication of the ice map for the Baltic Sea and the Danish Straits. Subscribers to this map were the captain's office in Gdynia, Gdansk, and Szczecin, the Polish Navy, the Gdynia-America Line, and other shipping companies.

As can be seen from the rise in need by the ports and other units, the synoptic office of the

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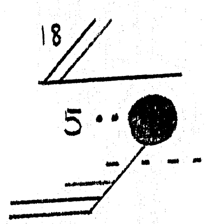
maritime section at Gdynia is an indispensable unit on the Polish coast for the needs of navigation.

On the following pages, we are printing "Explanations to a Weather Map," issued daily by the maritime section of the State Hydrological-Meteorological Institute at Gdynia.

EXPLANATIONS TO A WEATHER MAP

The result of a weather situation analysis in a given observational area is a map that shows air masses, fronts, isobars as well as barometric tendencies. At various observational points on the map, there are marked with the help of international symbols the meteorological elements observed at [illegible] hours Greenwich mean time. The model station below illustrates the method for presenting weather elements. Each meteorological station is entered on a map by a circle. The degree to which the surface of the circle is covered corresponds to the degree to which the sky is covered by clouds at the time of observation.

Model of a station



○ – Clear

◐ – 1/10

◔ – 1/4

◑ – 1/2

◕ – 3/4

● – 9/10

● – 10/10

} covering of sky by clouds

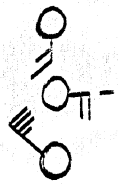
The symbols placed next to the station circle on the left hand side show the state of the weather at the time of observation. The symbols given below explain what is often found on weather maps.

- • – rain
- * – snow
- , – drizzle
- ≡ – fogginess
- ∞ – visibility
- ÷ – snow flurries
- ; – drizzle with rain
- •* – rain with snow
- ≡• – fog with rain
- ≡, – fog with drizzle
- ≡* – fog with snow
- •∇ – intermittent rain
- *∇ – intermittent snow
- Δ∇ – intermittent hail or intermittent rain with hail
- •R – storm with rain
- *R – storm with snow
- ΔR – severe storm with hail

shows that the phenomenon took place within the last hour before observation.

The precipitation concentration is designated by the number of signs for rain, snow, or drizzle.

An arrow directed toward the circle of the station shows from where the wind is blowing. The number of feathers at the end of the arrow pointing out the direction of the wind designates the strength of the wind in Beaufort degrees, where one feather stands for 1 degree on the Beaufort scale, one half of a feather only 1 degree. Examples:



- wind 7 of 7 degrees on Beaufort

- wind 1 of 4 degrees on Beaufort

- wind of 9 degrees on Beaufort

The number placed to the left of the state of the weather designates seeing distance according to the following key:

0 - very heavy fog; 1 - heavy fog; 2 - fog; 3 - fog; 4 - haze fog (visibility 1-2 kilometers); 5 - poor visibility; 6 - medium visibility; 7 - good visibility; 8 - very good visibility; 9 - excellent visibility.

The number situated above the state of the weather designates the temperature of the air in

degrees on the Centigrade scale.

The symbol placed within the station circle shows the type of low cloud.

The symbol situated directly above the station circle shows the type of middle cloud.

The symbol above the symbol for middle cloud represents the high cloud.

The symbols:

		Maritime tropical air
		Polar air
		Arctic air
PA		Continental air
		Maritime air
		warm
		cold
		old

Examples:

mTw	mTw	Maritime tropical air (warm)
cPk	cPk	Continental polar air (cold)
mPmet	mP	Maritime polar air (old)

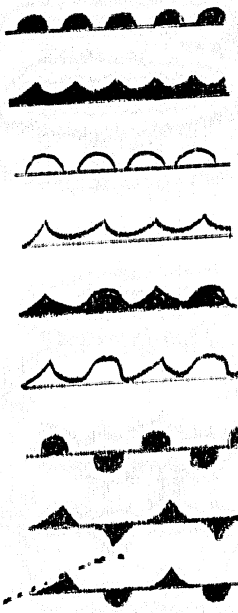
Fronts:

Warm air, coming into an area with cold air, being lighter passes above the cold air upwards. The boundary surface between these two air masses at the point where it crosses the surface of the earth provides the line of the warm front.

The boundary surface between the warm air an

the cold air that follows, where it cuts the surface of the earth, above the line of the cold front.

The cold front, moving more rapidly than the warm front, overtakes the warm front and thus enters in with it, the boundary surface between the cold air ahead of the cold front and the cold air following the cold front pushes, when it overtakes the line of the earth's surface, the line of the cold front.



- warm front on earth's surface
- cold front on earth's surface
- occlusion front on earth's surface
- cold front above earth's surface
- occlusion front on earth's surface
- occlusion front above earth's surface
- quasi-stationary warm front
- quasi-stationary cold front
- quasi-stationary occlusion front

The direction of the front's movement is shown on the map by the turn of the triangles and half circles, placed on the lines of the front.

[illegible] the continuous lines on a weather map (isobars) connect points [illegible] pressure, reduced to sea level, [illegible] millibars (1,000 mb = one millimeter).

[illegible] areas of high pressure are marked on the map with the letter H (high); the areas of low pressure by the letter L (low).

- END -