

**RESULTS OF THE WORK CARRIED OUT
BY THE AERO-PHOTO SURVEY EXPEDITION
OF THE CENTRAL HYDROGRAPHICAL DEPARTMENT
OF « GUSMP » (RUSSIAN CHIEF ADMINISTRATION
OF THE NORTHERN SEA ROUTE).**

(Reproduced from the *Bulletin of the Arctic Institute*, N° 1, Leningrad, 1936).

The Central Hydrographical Department organized, in the navigation season of 1935, an Aero-Photo Survey Expedition which worked in the district of the East Siberian branch of the GUSMP.

The expedition, the staff of which consisted of 12 men under the leadership of Y. A. DEREVIANKO, had at its disposal an R6 two-motor airplane, with a five-lens *Earcaldo* camera installed on it.

During the work of the expedition (from July 25 to September 16) a survey of the Lena River from Yakutsk to Zhigansk was made.

Owing to the great distance from the base, to lack of fuel and the dense cloudiness, the coast could not be entirely surveyed and, instead, the Olenek River was surveyed, along a stretch of 20 kilometres from its delta as well as the western part of the latter.

In addition, the lower part of the Viluia River was surveyed along an extent of 45 kilometres, and Yakutsk town. The survey of the latter was made on the scale of 1: 10 000.

The entire survey was made on the scale of 1: 25 000, i. e. from a height of 3700 m.

In the district from Yakutsk to Zhigansk 16 astronomical points were determined, approximately every 50 km. along the fairway of the river; this permits the construction of an accurate map to scale of 1: 25 000.

Three tide-poles served for calculating the variations of water-level in Yakutsk town, in the settlement of Sangar-Khaia and in Zhigansk town. The northern part of the district was surveyed at Low Water; the southern part at mean level.

The survey of the Lena and Olenek Rivers has shown that this method of surveying for hydrographical purposes is very advantageous, as it takes up much less time than the work on the ground, demands a considerably smaller skilled staff and there does not enter any subjectivism in the work.

The experimental work has shown that in using films of high sensitiveness the light, even if the surveys be taken in August and September, is quite sufficient. The best period of the year for surveys — in respect to the absence of mists — is the month of June.

The experiment made in order to determine the possibility of surveying the submarine relief, calls for considerable elaboration. Preliminarily it may be said only that the penetration of the rays into the depth is on the average equal to the limpidity of the water of the Lena River and varies, depending on the turbidness of the water, between 1 and 1½ metres.

The material obtained by the surveys of the expedition will be entirely employed for hydrographical needs; however, they might also be used for the study of the geomorphology of the Lena valley.

