

STAT

Page Denied

STAT

USSR HYDROMETEOROLOGICAL SERVICE IN STALIN FIVE-YEAR PLAN

[Comment: Numbers in parentheses refer to appended sources.]

Together with the rest of the country the Hydrometeorological Service will benefit by considerable development in the Fifth Five-Year Plan. The Hydrometeorological Service is charged with hydrometeorological support in the problems of the national economy stipulated by the new Five-Year Plan.

The Hydrometeorological Service was expanded and strengthened during the previous Five-Year Plan, and gained experience in servicing the national economy. However, the grandiose tasks set by the Fifth Five-Year Plan place new difficult problems before the hydrometeorological service.

Electric Power

The directives of the 19th Party Congress provide for the future development of electrification, making special use of the water power of rivers. In the new five-year plan great hydroelectric stations are being put into operation, including Kuybyshevskaya, Kamskaya, Gor'kovskaya, Mingechaurskaya, Ust'-Kamenogorskaya, and many others. The construction of the Stalingradskaya and Kakhovskaya hydroelectric stations is progressing, and construction of new stations on the Volga, the Kama, the Irtysh, the Angara and on other rivers will soon be started.

Operations in the development of hydroelectric power touch all phases of the activity of the Hydrometeorological Service, from simple observations of precipitation and water levels to scientific generalizations and calculations needed to realize the projected operation and construction, as well as the exploitation, of the new hydroelectric stations. In connection with this, considerable significance has been attached to the development and improvement of hydrological observations and operations, especially on the Volga, the Angara, the Kura, the Amu-Dar'ya, the Kama, and the Irtysh.

Our service must also study the hydrological conditions of rivers whose energy resources will be utilized in future 5-year plans.

The unprecedented scope of the operations in the utilization of water power and the realization of the Stalin plan for transforming nature define and fundamentally change the character of the activity of the Hydrometeorological Service.

If previously the main task of the service in the field of hydrology was conducting observations of the hydrological conditions of rivers and reservoirs, systematizing them and putting them in cadastral surveys and yearbooks, this is no longer enough for the vast regions of the country where hydroelectric stations and canals are being constructed and forests are being planted. The Hydrometeorological Service cannot limit itself to supplying the preliminary material for water economy calculations during the planning of hydroelectric stations, but must make a study of the changes in the conditions of rivers, lakes, and swamps as a result of man's influence on nature.

If previously a hydrologist was considered mainly an observer, now he must be primarily an investigator. A clear illustration of this is the participation of the Hydrometeorological Service in the construction of the Lenin Volga-Don navigable canal.

STAT

Experience has shown that in each stage of the development of Communism -- planning, construction and exploitation -- the requirements of the Hydrometeorological Service increase and become more difficult.

Thus, if in the planning period information was required from the Hydrometeorological Service on conditions of the Volga and Don, based on many years' observations by a series of hydrological stations, in the construction period information and forecasts on water conditions were required well in advance.

In the exploitation period, difficult problems arise for the hydrologists of the Hydrometeorological Service, such as forecasting and calculating the drainage volume in a reservoir during the spring flood and compiling the water balance of a reservoir.

To solve these problems observations must be made of drainage formation processes. In recent years, new drainage stations have been established and old ones improved.

The Hydrometeorological Service has long been interested in hydrological forecasts. They already have considerable experience in this field and they have won for themselves a firm place in the support system of the national economy. However, we must admit that the scope of investigations in the field of hydrological forecasting has been insufficient.

We must strengthen scientific investigations in the field of hydrological forecasting in the Central Forecasting Institute, in the State Hydrological Institute, in local observatories, especially in observatories at the large reservoirs, and also in the administrations of the Hydrometeorological Service itself, having created the necessary regular means for this in the UGMS [Administration of the Hydrometeorological Service], and having approximately doubled the number of administrations. We must significantly subordinate the operation of hydrological conditions sectors to the problems of the hydro-forecasters, and must improve snow cover observations, especially in the mountains. We must improve the training of cadres of hydro-forecasters in the higher educational institutions by having research students and the harmful practice of decentralizing the hydro-forecasting service must be stopped. We must create large hydro-forecasting centers for basic indications.

These tasks must be fulfilled in the shortest possible time in order not to lag behind the development of water power, river transport, and timber floating, which present ever growing requirements to the organs of the Hydrometeorological Service.

In the remaining years of the Five-Year Plan, the problem before the Hydrometeorological Service is not so much that of organizing a new network as widening the range of observations and improving the quality of observations and information in the present network, and strengthening the material and technical bases of the network. In 1953, we must finish all operations connected with examining and putting in order the make-up of the network, and go over to the new classification of stations and posts. We must strive to provide by the end of the Five-Year Plan drainage calculations for all active waterways, so that observations on settling can be conducted at all water-observation posts. We must widen the range and improve the methodology of observing ice conditions, sludge ice, and suspended and moving drifts.

STAT

For proper exploitation of hydroelectric stations, and for determining available water sources for the irrigation of collective farm and state farm fields one must have an accurate knowledge of reservoir conditions. It is necessary to compile their water balances every year. Experience at the Rybinskiy reservoir has shown that this problem is not easy but that it can be solved successfully if a material-technical base is created early in the period of construction of hydroelectric stations and canals, as has been done, for example, at the Tsimlyanskiy Reservoir.

Taking into account the grandiose nature of the construction projects of Communism, one cannot solve the problems of its hydrometeorological support in an amateurish way. Each of the new structures must have at its disposal a scientifically based system of hydroelectric stations and buildings on the "akvatoriya" of a reservoir, permitting observations of all the elements of its hydrometeorological conditions. Every large reservoir must have a hydrometeorological observatory to study the mechanism of the hydrological and meteorological conditions of the reservoir and to support the hydroelectric stations with forecasts and calculations of the elements of the hydrological conditions of the reservoir. Experience gained from operation of the Shcherbakovskaya and Tsimlyanskaya observatories proves the value of such an organization.

The large reservoirs must organize special hydrometeorological bureaus to support, by means of weather forecasts, hydroelectric stations and other branches of the national economy connected with the exploitation of reservoirs, especially river transport, timber floating, and fishing.

Agriculture

In the field of agriculture the 19th Party Congress posed as the main task an increase in the yield of all agricultural crops, and an increase in livestock together with a significant growth in productivity.

An increase in the yield of socialist agriculture requires a thorough study and calculation of the hydrometeorological factors influencing agricultural production.

Good weather forecasts are invaluable in establishing the best agrotechnical periods for working the soil, for sowing crops, and in planning harvesting operations properly. Weather bureaus of the local administrations of the Hydrometeorological Service must give such forecasts. All weather bureaus must be capable not only of applying the achievements of synoptic science, but also of conducting serious investigations in the field of regional synoptics and thereby raising the quality of their forecasts.

Losses in agriculture caused by drought, freezing, and unfavorable winter conditions can be held to a minimum if production is oriented properly. The onset of drought, the consequences of freezing of winter crops, and a whole series of other agrometeorological conditions can be determined not only on the basis of weather forecasts but also by means of an accurate appraisal of the water table, the condition of winter crops, etc.

The Hydrometeorological Service must take active part in the solution of questions connected with the wide development of cotton raising, and with the intelligent placing of new gardens, vineyards, tea plantations, and citrus orchards projected in the Fifth Five-Year Plan, and must raise the quality of its warnings of weather phenomena dangerous for subtropical and industrial crops. Moving many crops to new regions, especially to the north and east, and utilizing millions of hectares of irrigated lands will require scientific research.


 STAT

In recent years, especially in the pasture regions of Kazakhstan' Central Asia and the Caspian lowlands, hydrometeorological servicing of animal husbandry has increased considerably.

A large place in the activity of the Hydrometeorological Service is occupied by hydrometeorological support of operations expanded in the new five-year plan. These operations include introduction of grassland crop rotation, forest raising to protect fields, construction of ponds and reservoirs, and irrigation of forest, steppe, and desert lands of the USSR.

Modification of Climate

One of the most important results of the Stalin plan for transforming nature will be modification of climatic conditions in regions of land improvement. The turbulent changes in the lowest air layer and in the free atmosphere will be modified, the distribution of the snow cover on fields will be more uniform than now, precipitation conditions will be different, and essential changes will take place in temperature and in humidity of the air and soil. Unproductive evaporation will be considerably decreased, and the expenditure of water for the creation of tall and firm crops will be increased. The types and degree of these changes must be calculated in advance.

The solution of the indicated problems requires that specialized observations be made in the existing and planned network of stations of all types and that their operations be expanded. This refers first of all to agrometeorological stations, forest hydrometeorological stations, and drainage stations.

Besides this, we must increase the number of complex-expedition investigations with the participation of highly qualified specialists and climatologists, agrometeorologists, and specialists in the physics of the lower air layer. Climatologists of the Hydrometeorological Service must do considerable work in compiling special climatic descriptions of several regions of the country, to be applied to problems of transforming nature and to problems connected with the great structures of Communism.

Fishing Industry

An important part of the work of the organs of the Hydrometeorological Service on the seas and large lakes of the USSR is servicing of the fishing industry, whose intensive development is stipulated by the directives of the Fifth Five-Year Plan. The fishing industry requires a well-organized system of support for fishing organizations and ships, with hydrometeorological recasts and timely warnings of storms. In connection with the proposed increase in fishing in Lithuanian, Latvian, and Estonian SSR, workers of the Baltic administrations of the Hydrometeorological Service must avail themselves of the experience gained in specialized hydrometeorological servicing of the fishing industry of the Caspian and of the Far East.

To raise the quality of hydrometeorological support of the fishing industry it will be necessary to expand the study of hydrometeorological conditions on seas in the fishing region.

Special attention of oceanologists of the Hydrometeorological Service will be drawn to problems of the water and salt balance of the Caspian, Aral, and Azov seas in connection with the withdrawal of water from the rivers of their basins for irrigation purposes. Hydrometeorological support of the fishing industry must occupy an important place in the activity of the naval administrations of the Hydrometeorological Service.


 STAT

In the new Five-Year Plan operations in getting oil from sea sources will be considerably expanded. Keeping in mind the special difficulty and great dependence of these operations on hydrometeorological conditions, timely support of the oil men with high-quality hydrometeorological forecasts and materials necessary for continuous exploitation of sea sources is important.

Transportation

Along with the growth of industrial and agricultural output, the directives of the 19th Party Congress stipulate a high tempo of development of railroad, sea, river, auto, and air transport and communication.

The development of transportation and its equipment with advanced technology raises new and greater requirements for the organs of the Hydrometeorological Service. In the first place, this refers to the servicing of the Civil Air Fleet, whose freight turnover will be at least doubled by the Five-Year Plan.

The workers of aerometeorological stations must direct all their strength toward an unflinching round-the-clock support of air transport. Of special importance are the problems of increasing the technical knowledge of cadres for aerometeorological stations, improving methods of forecasting meteorological phenomena dangerous for aviation, and equipping aerometeorological stations with the newest instruments which will guarantee high accuracy and automatization of meteorological observations. Communications workers must improve radio communication and radio-meteorological centers.

The lumber industry is faced with the problem of eliminating lags and of expanding timber cutting, having shifted its base to the forest regions of the north, the Urals, western Siberia, and the Karelo-Finnish SSR. It must also lessen the seasonal nature of timber cutting. Timely warning of foresters and timber-cutting organizations about unfavorable weather phenomena, and most important of all, aid in timber floating by dependable hydrological forecasts and information, will help the forest industry considerably in solving its problems.

Scientific Research and Personnel

An important place in the new five-year plan must be given to scientific research operations connected with the Stalin plan for transforming nature and for the great construction projects of Communism. A large number of operations are dedicated to working out and improving methods of observing and processing hydrometeorological data, with wide application of mechanization and automatization of calculations.

Successful fulfillment of these tasks by scientists of the Hydrometeorological Service will improve the quality of hydrometeorological forecasts and will support the national economy with necessary information on hydrometeorological conditions.

To supply the network with instruments and equipment, including new devices, a number of tasks must be accomplished from 1951 to 1955 in the expansion and strengthening of the productive technical basis of factories of the Hydrometeorological Service, which will make it possible to increase the output of instruments.

STAT

The development of the service requires a large number of qualified hydrometeorological cadres, and in connection with this we must increase the output of specialists from the hydrometeorological schools. Measures must be adopted for preparing scientific cadres through graduate courses. The number of graduate students in scientific research hydrometeorological institutions must be at least doubled by the end of the Five-Year Plan.

Special attention must be given to correspondence training of hydrometeorologists. At least 35,000 people must be given correspondence courses during the Five-Year Plan. About the same number must receive training or improve their qualifications through various courses. Improving the professional qualifications and political training of cadres is an object of daily care by the chiefs of all establishments of the Hydrometeorological Service.

Keeping in mind that the service is being filled by young specialists and that the working cadres must have good conditions, considerable attention is being paid by the Main Administration of the Hydrometeorological Service to the construction of dwellings. The relative weight of home construction in the plan of capital operations is growing considerably. (1)

Plans for Strengthening Forecasting Service

To support the operational hydrometeorological servicing of the national economy a large operation was carried out from 1946 to 1952 in the local directorates of the Hydrometeorological Service in the creation of a network of GMB (hydrometeorological bureaus) in the oblasts, krays and autonomous republics, and also specialized GMB. As a result, the network of GMB more than tripled in this period.

The creation of a wide network of hydrometeorological bureaus made it possible to widen and to improve somewhat the quality of the national economy. Because of the lack of specialists, the absence of the necessary stocks of scientific-operational materials, and the limited financial resources, many of the existing GMB were not powerful enough and their work consisted only of daily weather forecasting, which at present cannot satisfy the growing requirements of the national economy, especially agriculture.

Intensive development of network units did not strengthen the basic operational-methodical organs of the hydrometeorological service. These are the hydrometeorological forecasting bureau and the hydro-forecasting sector of the local UGMS, to which the most responsible operations are assigned. They include the drawing up of long-term weather forecasts and hydrological conditions.

The creation of a large number of small forecasting organs led to a dispersion of the material means and specialist force of the Hydrometeorological Service and did not provide the conditions necessary for raising the quality of the forecasting components and for significantly bettering the servicing of the national economy.

In connection with the operations for realizing the Stalin plan for making over the nature of our country, and in connection with extensive hydroelectric construction and intensive development of our air and naval forces, as well as the fishing industry and other branches of the national economy, there arose before the organs of the Hydrometeorological Service new problems, whose solution can be effected only through large forecasting centers having at their disposal the necessary materials for observation, as well as qualified specialists.

STAT

For supporting the national economy with all kinds of weather and hydrological forecasting, and for an improvement in the quality of hydrometeorological servicing by the Main Administration of the Hydrometeorological Services, a series of measures were adopted, beginning in 1953, to strengthen the operating organs.

These measures stipulate:

1. Creation in all UGMS of network forecasting organs -- weather bureaus -- on the basis of hydrometeorological forecasting bureaus, hydrological forecasting sectors, and administration communication centers.
2. Rational distribution of the network of hydrometeorological bureaus over the territory of the USSR. This network, under the direction of the Weather Bureau, must assist the servicing of interested organizations, oblasts, krays, and republics with hydrometeorological forecasts and information.
3. Some reduction in the number of hydrometeorological bureaus having synoptic sections and hydrological groups, with the utilization of the specialists who will be freed thereby for strengthening the weather bureaus being created. In this way the staffs of synoptic groups, hydrological forecasting sectors, and weather bureau communications centers will be strengthened.

The creation of large forecasting centers in every administration will aid in compiling weather forecasts for the natural synoptic period and hydrological forecasts for a larger number of purposes and with more timeliness. It will be possible to apply more widely in practice the latest achievements of hydrometeorological science and at the same time to raise the quality of hydrological and meteorological forecasts. The large forecasting centers will be able to study the development of atmospheric processes and hydrological phenomena in their regions, for the purpose of improving methods of compiling forecasts of the weather and hydrological conditions of rivers, reservoirs and seas. Besides this, such an organization will make it possible to improve the methodological direction of operational organs, i.e., "AMSG" and GMB, and give them the necessary practical help in their work, and at the same time improve the quality of the hydrometeorological servicing of all branches of the national economy, especially the great construction projects of Communism and agriculture in our homeland.

Including communications centers in the weather bureaus and concentrating operational direction of RMTs (radiometeorological centers) in one organ will further the collection and distribution of hydrometeorological data.

The introduction of a new five-unit index system of synoptic stations of the USSR, and the creation within the RMTs of special groups to gather forecasts for radio broadcasts, giving all RMTs the duties of a dispatcher, create real conditions for improving the support of forecasting organs of the GUGMS [Main Administration of the Hydrometeorological Service], and other departments with necessary hydrometeorological data.

For strengthening of the operational organs it is necessary that chiefs of administrations of the Hydrometeorological Service, their deputies, and chiefs of the forecasting sections and communications centers of the UGMS manage this operation directly. We cannot permit losses of synoptic specialists and hydrologists by moving them to a new location. We must have efficient control of the work of the Weather Bureau and operational organs. We must remember that bettering the meteorological and hydrological servicing of the national economy is the fundamental task of the measures adopted to strengthen the operational organs.

STAT

Special attention must be paid to managing the work of the GMB IV detachment. We must work out a clear system for furnishing all kinds of hydrological and meteorological forecasts, and also warnings of dangerous weather phenomena and hydrological conditions to these GMB, drawing the AMSG into this operation if necessary.

We must improve the cooperation of the weather bureau specialists with the leaders of soviet and party organs and with organizations being serviced. At certain times, it will be necessary to send weather bureau specialists to help the GMB specialists and to consult with the managers of the national economy organizations being serviced.

There can be no doubt that strengthening the operational organs, along with other measures being carried out by the Main Administration of the Hydrometeorological Service, will help raise the quality of forecasts and warnings and will improve the hydrometeorological servicing of the national economy.

Local administrations of the Hydrometeorological Service must strive to achieve, as a result of their labors, the maximum effect, and at the same time they must strive to create the necessary conditions for rapid solution of the problems set before the organs of the Hydrometeorological Service by the historical decisions of the 19th Party Congress.(2)

SOURCES

1. A. A. Zolotukhin, "The USSR Hydrometeorological Service," *Meteorologiya i Gidrologiya*, No 1, Leningrad, 1953, pp 3-9
2. K. T. Logvinov, "Plans to Strengthen the Forecasting Service," *Meteorologiya i Gidrologiya*, No 3, Leningrad, 1953, pp 7-10.

- E N D -