

GEOGRAPHY

Russians Chart Coast

Armed with modern instruments and qualified personnel, Russian scientists are attacking the problem of charting their coast lines, sounding harbors and taking aerial photos.

► THE RUSSIANS are showing an increased concern about the importance of charting their coast lines.

Their Naval Hydrographic Service, whose operations were almost at a standstill between the turn of the century and the second World War, is now more active than at any time in its history, and little doubt remains that the Russians will continue to step up this activity.

According to a former Soviet naval officer, the Russians have, since World War II, made aerial photographs of all coastal regions, published maps of these areas to a scale of 1:25,000, and sounded all little-known harbors, bays, anchorages and mooring points in Soviet waters. The writer's comments, made under a pseudonym, appear in the current *Bulletin of the Institute for the Study of the U.S.S.R.*, published in Munich, West Germany.

The Russian Naval Hydrographic Service, say the former officer, is kept well supplied with qualified men at all levels. Hydrographic units and ships have few sailors and petty officers, with responsible positions going to regular military personnel. The greater part of the crew or working force is made up of civilian personnel.

A drawback to personnel efficiency with the service is the fact that the head of a

regional hydrographic service is subordinate both to the head of the fleet service and to the naval base commander.

The sore spot in the Hydrographic Service, says the author, is the age of its ships, whose slow speeds lead to numerous accidents.

The reverse is true, however, in regard to equipment. The Service has the most up-to-date instruments, partially because of its influence on the work of many naval research institutes and the Krylov Engineering Academy, the center of Soviet naval engineering.

The Hydrographic Service maintains close liaison with the fleet headquarters, naval intelligence and the civilian-operated Hydrographic Administration of the North Sea Route, situated in Leningrad.

Development of the latter organization is being given special attention in view of the constantly increasing strategic importance of the northern regions.

In fact, says the author, there is a tendency within the Hydrographic Service to reduce activity in those areas that are comparatively compact and vulnerable in the event of an atomic war, such as the Black and Baltic Seas, and to increase activity in the northern and Pacific areas.

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IMMUNOLOGY

Salk Advises Fourth Shot

The present inadequate protection afforded by commercial preparations of polio vaccine may be compensated for by a fourth polio inoculation, Dr. Salk suggests.

► POLIO vaccine that is not as potent as Dr. Jonas Salk's laboratory preparation may be responsible for the crippling that occurred in persons who contracted polio even after receiving three inoculations.

This was suggested by Dr. Salk. Therefore, he has recommended a fourth polio shot until commercial preparations can be produced at optimal potency. Dr. Salk, of the University of Pittsburgh, spoke at a symposium at Ann Arbor, Mich., conducted by the National Foundation and the University of Michigan School of Public Health.

But the fourth shot is meant to be a temporary measure only. When the potency of commercial vaccine can be increased to the point where three injections will give complete and lasting protection against paralytic polio, there will be no need for a booster shot, the scientist said.

Dr. Salk told his audience that the po-

tency of commercial preparations could be raised to match his laboratory vaccine. Commercially prepared vaccines range in their degree of effectiveness and potency. Because of the wide differences, a fourth shot of the particular commercial preparation an individual had had previously, would be desirable.

This might be expected to compensate, in a great many instances, for the deficiencies in protection that sometimes remain after persons are given three injections, he pointed out.

Vaccine effectiveness now ranges between 70% and 90%, the standard set by the National Institutes of Health's division of biologic standards. Dr. Salk's vaccine is 100% effective. There had been some doubt that any vaccine could be used at 100% potency, but these views are now being re-examined, the scientist said.

Dr. Salk said the ideal vaccine would be such that a single shot would be effective with most persons. The second shot would offer the added measure of antibody stimulation for those not adequately protected by the first.

Ideally, the third shot would then provide long-lasting immunity.

Diverting from the subject of those persons who have received three shots, Dr. Gordon Brown of the University of Michigan said at the symposium that a big problem still to be faced is the number of persons who have received no shots at all.

"While a fourth dose of vaccine would undoubtedly be beneficial to some individuals . . . in view of the evidence from our Detroit epidemic studies, it is quite clear that what is most needed is complete immunization of the large number of persons of all ages who have not as yet had any vaccine at all," he said.

In 1958 alone, the city of Detroit reported 625 cases, 50% of which were paralytic. Today, some 50,000,000 Americans who are within the polio-susceptible age group, walk the streets unaware or unconcerned that they have had no polio protecting shots.

Science News Letter, January 17, 1959

METEOROLOGY

Rocket-Camera Takes 1,000-Mile Cloud Photo

See Front Cover

► CLEAR PICTURES of a 1,000-mile-long stretch of atmosphere were obtained from the first combination rocket-camera unit designed to photograph cloud formations associated with hurricanes and weather frontal systems from extremely high altitudes.

The unit is for use over ocean areas where there are no permanent weather stations. The film was recovered at sea from the nose cone of a rocket that soared to an altitude of slightly more than 86 miles on Dec. 5, 1958. It shows the frontal cloud formations over an Atlantic Ocean area, starting at approximately 200 miles offshore and stretching to approximately 700 miles farther seaward.

The photograph on the cover of this week's SCIENCE NEWS LETTER is a mosaic strip that covers approximately 750 miles in length, comparing roughly with the expanse between the southern tip of Maine and the top of Florida. The strip is made up of only five photographs.

The rocket launch was made from the National Aeronautics and Space Administration's Pilotless Aircraft Research Station, Wallops Island, Virginia. It was one in a series of firings under the project Hugo program, conducted by the Office of Naval Research with financial assistance from the Bureau of Aeronautics and the U. S. Weather Bureau. The program is designed to promote research into weather phenomena in order to improve the accuracy of weather predictions.

Other rocket shoots are planned.

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