

Rivalry in the Ocean

United States Embarked on Program of Ocean Research

Editor's note: This is the second in a series by our Washington correspondent on the intense rivalry between the United States and Russia in the newly expanding field of oceanography because of its military as well as peaceful utility.

By A. ROBERT SMITH
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Washington - Soviet Russia's oceanography fleet, deployed to learn the vital secrets of the world's oceans, is more than twice as large as the American oceanography fleet.

But the United States has embarked upon a shipbuilding program as part of the Kennedy administration's quiet but determined effort to overcome the Soviet lead in undersea research and exploration which has certain military importance and peaceful economic significance of uncertain dimensions.

While the race to land a man on the moon has captured world-wide attention, both powers have simultane-

ously entered a race to get to the bottom of the seas to unlock the treasure house of scientific knowledge which the oceans have guarded from man ever since he pushed off from shore in ancient times.

The Soviet oceanography fleet consists of 158 ships, according to U. S. Navy estimates. The American oceanography fleet consists of 76 vessels, and most of these are over-age ships converted from some prior use or taken from the "mothball fleet" to conduct oceanic research on a make-shift basis.

But during the past year the first three brand new American ships, designed and built specifically for modern oceanographic research, have put to sea. This is the first installment on a construction program which a high Navy official says we "desperately need." The administration's 10-year oceanography plan calls for 120 oceanography ships by 1972.

Government officials say

Russia has 75 ships operated by its Navy and 83 non-Navy ships. Some of these are modern, well-equipped vessels assigned to basic research. Their best known research ships include the 6,000-ton Mikhail Lomonosov, built in 1957 with 16 oceanographic laboratories and space for about 75 scientists aboard; the 12,000-ton Ob, built in 1953; and the Sverryanka, a research submarine.

Some Russian vessels combine oceanography data collection with military intelligence and commercial fishing not far off the American coast, both East and West, in international waters.

While the comparative sizes of the fleets provide an index of the Soviet and American oceanographic efforts, Rear Admiral E. C. Stephan points out that more than mere ships are required for an effective program. The ships collect a large amount of data about the oceans, but this data must be processed and reduced to usable form for various military and civilian purposes. In this vital area American officials believe they are ahead of the Russians.

Their oceanographic program is hampered by lack of precise positioning capability, lack of modern precision instrumentation for data acquisition and by the lack of modern data processing equipment for rapid handling of survey research data," said Admiral Stephan, director of oceanography under the chief of naval operations.

"There is every indication that the Russian oceanography fleet has a data acquisition

This Data Center is but one of the new functions of an old line Navy agency, the Hydrographic Office, which a year ago was renamed the Naval Oceanographic Office, to suggest its expanded functions. Previously, it was limited to producing the navigational maps and charts that guide every vessel, large and small, on the oceans or coastal and inland waters.

Today the Oceanographic Office is hard at work mapping the bottom of the oceans, determining wave conditions which affect shipping and naval operations, and researching sub-surface temperatures and currents—all of which has immense military value in this age of deep diving, long-range nuclear-powered missile-firing submarines. It is presumed the Soviets are doing similar work for similar reasons.

The cost of keeping an oceanographic research ship at sea is about \$2,000 per day. Each temperature reading of the oceans at different depths costs about \$20 capability that has far outstripped their ability to analyze and process this data into usable form. They probably are better equipped to do oceanography in support of fishing operations than they are to do the more precise and complicated military oceanography.

To solve its own data analysis problem, the U. S. Navy created the National Oceanographic Data Center, located in an abandoned naval gun factory in Washington, D. C. With modern computers, the Navy expects to analyze raw data transmitted from ships at sea; then the processed data will be transmitted back to the ships where scientists

aboard will be able to determine when their oceanographic research has been adequate in that area and they can move on to another part of the sea.

when taken from a ship. To cut this cost, the Navy has developed buoys equipped with thermistors which cut the cost to about 75 cents per measurement.

"We are keeping ahead of everybody in this field," a Navy oceanographer declared. Mapping the ocean floor is the major function of the ocean survey effort, which

also includes ascertaining the magnetic and gravity properties of the deep sea, the physical, chemical and biological characteristics of bottom sediments, and the meteorology of the overlying atmosphere.

The Navy is aided by the Coast and Geodetic Survey and the Bureau of Commercial Fisheries in this effort. A new Navy ship, designed just for this purpose, is scheduled to start operations next year.

Today the only manned vehicle for exploring the bottom of the Navy's Trieste, which has only a two-mile horizontal range. The Navy is considering building more advanced vehicles for cruising along the ocean floor at depths ranging from 5,000 to 20,000 feet, which would take care of 90 per cent of the bottom, and two other vehicles capable of descending to 36,000 feet for deep trench investigations.

Ocean surveys and bottom mapping are crucial to the Navy's expanding fleet of Polaris submarines which today cruise assigned stations at sea as an effective deterrent to Soviet aggression.

Speaking of the Polaris sub, Rep. Daniel Flood (D-Pa.), a member of the House subcommittee on defense appropriations, said in recent hearings: "Here we have this fantastic weapons system about which we are all excited. We are grinding them out like pan-cakes. Everybody tells us they will protect the free world from this and that, and they are not worth very much without oceanography."

Congressman Flood said the Navy, with congressional sanction, wants to place a circle of Polaris subs around the Communist-held land mass within four years. Admiral Stephan said the oceanography program is geared to meet such a time-table.

Before each Polaris sub takes its assigned station at sea, the Navy makes an ocean survey of the area. Currently the Navy has 11 Polaris subs in the fleet of 28 atomic power submarines. The goal of 86 nuclear subs by the end of the

decade is divided about equally between Polaris subs, which could fire at inland targets thousands of miles away, and attack subs, used against foreign submarines.

To clear their watery stations far at sea, the Navy must continue to step up its work for deep sea secrets, locating unknown sea mounts, charting the courses of raging deep sea rivers. This is the reason for allocation of much of the oceanography budget for defense purposes.

Of \$2.3 billion budgeted

for the 1963-1972 oceanography effort, \$835 million is for the Navy. Not included in either of these figures is another half billion for secret activities related to the undersea cold war with Russia.

But whether Congress will actually appropriate this much for oceanography in the years ahead is somewhat doubtful, judging by the beating the oceanography program has been receiving in Congress this summer at the hands of the budget cutters.

(Next - Capitol Hill skin-diving.)



QUEEN-SIZE SANDWICH - August is National Sandwich Month and pretty Marcia is celebrating Good, 23, of Las Vegas, Nev., is celebrating

Vote Expected on Tax Cut Proposal

Washington-UPI-The House Ways and Means committee today was expected to start voting on President Kennedy's \$10.6 billion tax cut plan.

The committee was reported planning to approve almost all of Kennedy's recommendations to lessen the tax burden on individuals and corporations. But the committee is not expected to make its final decisions until Thursday or Friday.

The Democrats on the committee were generally enthusiastic over the central feature of the program - an across-the-board cut averaging 20 per cent in tax levies for individuals.

Rep. John W. Byrnes (Wis.), the committee's senior Republican, said the GOP members would feel the same if they thought the administration would launch an all-out drive to hold down deficit spending.

Belton Addresses Insurance Convention

Portland-UPI - All citizens should give "active, sincere and dedicated interest" to the business of government, State Treasurer Howard Belton said Tuesday.

He spoke at the National Association of Mutual Insurance Companies convention here.

To neglect an interest in government, Belton said, is perilous.

He warned against excessive legislation and urged strengthening of morality and ethics.

Bears Can Be Dangerous, Warn U. S. Park Rangers

ALFRED McCORMACK, JR., Smokemont, N.C. - (UPI) - Never trust a friendly-looking bear. He may be cute, but he's also the most dangerous of North American wild animals.

This advice comes from rangers here in the Great Smoky Mountains national park. But it's valid anywhere a bear's loose - from Maine to Glacier park, Mont., and the Sierras of California.

Every summer un wary tourists across the land and in national parks are scratched, fanged or badly frightened by a suddenly angry bear. People who try to be hospitable to bears regularly find that Mr. Bear enthusiastically bites the hand that feeds him.

Take the case of a Dubuque, Iowa, man who visited the park here several years back. Disobeying signs and printed advice, he hopped out of his car and went up to a friendly-looking mamma bear and her cubs with an offering of peanuts.

The she-bear, known as a sow, thought the corn-state tourist was trying to get between her and the cubs, and she took immediate exception.

When a park ranger drove by on patrol in his pickup truck a few minutes later, the motorist had retreated to the top of his car - minus part of his jacket and shirt - and with a nasty scratch down one arm. The bear was trying to get inside the car. The Iowan's wife was hysterical.

There is almost nothing the boorish tourist will not do to and with bears. One man tried to shove a grown black bear into the front seat of his car so he could take a picture of it sitting next to his wife.

A horrified ranger spotted this stupidity and put a stop to it before something happened. The couple, lacking in knowledge of ursine ways, was highly indignant.

Human-like Bears have a human-like quality which is highly deceptive. They eat the same food as man, and many a bear in captivity has learned to gaze beer and whisky, dance to music, and perform tricks.

Actually, the bear is a neurotic with mercurial swings of temperament and an anti-social men. He is more cunning than most hunters and likes nothing better than to double back on his own long track and pad silently along parallel to a hunting party, the bear tracking the trackers.

While big bears may look and act friendly from afar, there is almost nothing cuter than a bear cub. They are soft, cuddly, furry creatures which love nothing more than to play and romp. They can roll over like a dog, retrieve a thrown ball or play dead like a possum.

The teddy bear of yester-



Small Worlds Around Us

By LYNN M. WATKINS

(Register and Tribune Syndicate, 1963)

More Than Man Interested In Arrival Of Baby Turtles

The mud turtle left the sheltering waters of the pond and laboriously climbed the sloping bank. We watched her with binoculars as she excavated a deep hole in the beach, up at the highest point, and some distance from the water. She covered the hole with a sweeping motion of her rear legs. She seemed in a great hurry, anxious probably to get back to the safety of the pond.

Of course, we didn't know it at the time, but other eyes, aside from ours, must have observed the incident, for later events indicated we were not the only ones interested in those turtle eggs.

Mrs. Turtle returned to her natural environment and probably forgot the eggs she had laid. She had lost all interest in them. What happened to them from now on was no concern of hers. Neither did she care whether or not any of her future offspring ever survived to reach the home pond.

Our interest however, was more far-reaching. We marked the date of the egg laying on a calendar. We wanted to be back about the time the baby turtles would leave their sandy nursery. Neither did we know then that the hatching date was registered in the minds of other creatures also interested in baby turtles.

And too, this seemed like an ideal time and place to try out an idea. It has always been argued among students of wild creatures that baby turtles newly hatched, found the water merely by walking down the hill. This was a reasonable deduction, for the bank of a pond or stream is always higher in elevation than the water, often so steep in fact, that a newly hatched turtle could just about tumble, head over tail, down hill and into the pond, or stream.

The weather favored us considerably. The summer was hot, the rains were few and of a skimpy amount and the waters of the pond had receded until the shore was several yards wider than when the eggs were deposited.

Those baby turtles, now nearly due to arrive, would have to travel much farther than did their mother when she laid the eggs.

It was work, but we changed the contour of the shore in between the nest and the edge of the pond. We also altered the incline, we slanted it back away from its natural inclination. If the new-born reacted to gravity alone, they would go away from the pond, following the incline backwards.

We watched carefully during the critical days. We wanted to be there when the youngsters put in their first appearance. We missed the hatching, but we could read the tracks in the sand. There had been no hesitancy on the part of the newly hatched turtles, they wasted no time on inclines, or ground slant, they went over the artificial hill, directly toward the water.

It was, in terms of distance, a short trip, but it was a dangerous one. The marks in the sand told where the great blue heron stood while he gobbled some of the baby turtles. Plain too, were the paw marks of a pair of raccoons; they ate some of the hurrying youngsters.

One question at least was partly answered; turtle babies would seem to know where they want to go, in spite of up, or down hill. But those other eyes that had watched the egg laying, both bird and animal, how did they know? Did they remember a date, a time, and a place; or did they just happen to be there on the day of the hatching?

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