UNITED STATES
DEPARTMENT of the INTERIOR

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OCEANOGRAPHIC VESSEL WINS SPACE LAURELS

Geronimo, a 20-year old sea-going tug converted for oceanographic research, scheduled to arrive in Washington, D. C., this week, will be wearing space-age laurels, the Department of the Interior reports.

After months at sea, Geronimo may not look very pretty to the landlubber, and some may scoff at her speed--a meager 12 knots--but last month Geronimo found a niche in history. She teamed up with the Nation's newest space marvel--Syncom II--for the first transmission of oceanographic data via a communications satellite.

Scientists of the Department of the Interior's Bureau of Commercial Fisheries believe the joint efforts of these two unlikely partners will make an important contribution to future research into the secrets of the sea.

The data transmitted by Syncom concerned temperatures and salinity of water down to 3,000 feet in the Gulf of Guinea off Africa's west coast. Scientists aboard the Geronimo, then off the west coast of Africa, coded the data and transmitted it to NASA's ground station at Lagos, Nigeria. NASA beamed the data to Syncom--more than 22,000 miles above the South Atlantic--and the satellite relayed the coded information to Lakehurst, N. J. Then the data went by ground lines to the National Oceanographic Data Center (NODC) in the Nation's Capital.

NODC computers compared the data with previously known information about the Gulf of Guinea. The computers confirmed that one of the Geronimo's instruments was malfunctioning--a condition already known to scientists aboard the vessel. This and other information was routed back to the Geronimo, both by satellite and conventional means. From Geronimo to Syncom to Washington to Geronimo--elapsed time less than 45 minutes.

Thomas S. Austin, Director of the Bureau of Commercial Fisheries Biological Laboratory at the Navy Yard Annex in Washington, explained the significance of the experiment.

"Under usual circumstances, the research vessel on station operates under a close schedule, and there is little time for quality control on the accuracy of

instruments. Some of the data processing is done when the vessel is on the way home. The rest is done here by computer after the vessel arrives. If there are errors caused by equipment, it is too late to make corrections and go back."

Austin said, however, that if information could be received in Washington periodically while it is being collected, it could be compared with past conditions in the area of research. This would help enhance the accuracy of the data--and it might have another important benefit.

"We might find that the entire pattern of research should be changed," he said.

Austin recalled an incident in 1953, when a communications satellite would have been helpful in oceanographic research. A study of data from a research vessel--after it had returned--showed that one of the major ocean currents in the Pacific strangely had disappeared. It would have been a rare opportunity for special research, but the vessel already was in home port.

Geronimo also has been assisting in the Tiros weather satellite program to measure worldwide surface temperatures. Together with ten other research vessels from eight nations, Geronimo took surface temperature measurements in the South Atlantic for comparison with Tiros' findings. The more accurate surface readings enabled space scientists to spot errors in the Tiros instruments and to make necessary corrections.

The international research fleet of which Geronimo has been a part since early July was engaged in a cooperative investigation of the tropical Atlantic. Austin is coordinator for the UNESCO-directed program. The fleet this summer concentrated on learning about environmental conditions. The emphasis will be on biological studies when it returns to the South Atlantic in January 1964.

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