

### U. S. Research Vessels the *ARGO* and the *HORIZON*

The American oceanic research vessels *Argo* and *Horizon* owned by the Scripps Institute of Oceanography, La Jolla, California, are two of a fleet of forty oceanographic vessels, operated by over twenty nations participating in the Indian Ocean Expedition during the next few years. During the period 15 May, 1962 to about 22 June, 1963 R.V. *Argo* is scheduled for scientific exploration in the Indian, north Pacific and south Atlantic Oceans. The expedition, designated LUSIAD is Scripps Institution's second field contribution to the IOE. During her Indian Ocean operations, *Argo* will carry out two-ship geophysical observations in company with R. V. *Horizon*.

The *Argo* is a steel hulled former U. S. Navy Salvage Vessel built in 1944 and converted as research vessel in 1959-1960 to give the best possible living and working accommodations. She is the largest of the University of California's research fleet and is named after the mythological ship, *Argo* in which Jason sailed in search of the Golden Fleece. She has an overall length of 213', 39- $\frac{1}{2}$ ' beam, 15' 1" draft and 2,079 tons displacement. Powered by four main diesel-electric engines supplying 3,800 HP, her normal cruising speed is 11 knots (with a maximum of 14 and minimum of 1 knot) and has a range of 7,000 miles and endurance of 60 days, with a full complement of 40 crew and 28 scientists. For navigation *Argo* is well-equipped having a gyrocompass with repeaters, magnetic compass, electro-magnetic log for speed and distance, radar, sonar, radio direction finder and loran. Communication equipments include lifeboat transmitter distress frequencies etc. besides the ship's receivers and transmitters. Her echo-sounders can determine with extreme accuracy depths up to 4,000 fathoms. Two hydrographic winches with drum capacity of 30,000' of 3/16" wire rope or electric cable are used for light coring, photography, Nansen casts and 1-meter net tows besides two BT winches having drum capacity 1,500' of 3/32" wire or 1,200' of 1/8" wire, with specially designed level wind.

One part of her main deck laboratory with an area of 1,600 sq. ft. is used as a geophysical laboratory and the other for hydrographic, chemical and geological work. A flying bridge laboratory of 296 sq. ft. is used for geophysical and other observations which require all round visibility. A laboratory office adjoins the main deck laboratory. Laboratories and other specially selected spaces are air-conditioned. The ship is also heated and hence capable of operating in all navigable waters. With rolling keels she can operate in rougher seas at 15% reduced speed.

The *Argo's* sister ship the *Horizon* is smaller with an overall length of 143' and displacement of 900 tons. She also was a former U. S. Navy Tug built in 1944 but converted earlier, in 1948 as research ship. Her complement is a crew of 18 and a scientific staff of 17. The range is 7,000 miles and endurance is 48 days. Though smaller she equals her bigger sister in all other aspects. In addition she can operate 'quiet' for a few hours using kerosene or battery lanterns. The *Horizon's* primary mission in the expedition will be to work with the *Argo* in two-ship seismic studies of the sea floor. She will also make certain basic observation in geology, geophysics and bathymetry.