

USS ANNAPOLIS -- Floating Message Center

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Editor's Note: A new type ship began operating with the Fleet in the fall of 1964 – in effect a shore-sized naval communications station, but afloat and mobile. The USS *Annapolis* (AGMR-1) is the Navy's first major communications relay ship. Captain Rowan's article describes the role this unique ship may be called upon to play with our operating forces at sea.

The concept of the *Annapolis* envisions providing mobile communications for the command and control of fleet operations in areas where shore-based communications facilities do not exist or are inadequate.

The conversion of an escort-type carrier to an AGMR was initially included in the Fiscal 1962 Shipbuilding and Conversion Program, but was deferred to the 1963 program. Chosen for the conver-

USS *Annapolis* (AGMR-1), the Navy's first communications relay ship.



sion was the *Gilbert Islands* (AKV-39), the former CVE-107 first commissioned in early 1945. As an escort aircraft carrier *Gilbert Islands* saw action during World War II in the Okinawa-Gunto operations and the Australian operations in Borneo. During the Korean War she served as an aircraft ferry and was subsequently mothballed.

The conversion to a communications ship began in August 1962 when *Gilbert Islands* was towed from her berth in the Reserve Group at Bayonne, New Jersey, to the New York Naval Shipyard where the conversion took place. Renamed USS *Annapolis*, she was commissioned as the AGMR-1 on March 7, 1964.

Operating Areas

The services which can be provided by *Annapolis* are fleet broadcasts and ship-to-shore circuits. The ship may operate for prolonged periods underway, at advance bases, or in remote locations. The services provided while operating may be as an augmentation of existing shore communications, as a substitute for essential communications that may be lost or become unavailable, or as a temporary extension of communications into areas of special operations.

Annapolis is equipped with extensive communication-electronics hardware. The bulk of the equipment is designed to handle large volumes of message-type communications, primarily radio-teletype, on either single-channel or multi-channel circuits. Facilities also exist to handle facsimile, voice, and CW types of communications. Some of the equipment installed is the first of its kind afloat and in some instances the only one of its kind in the Navy.

The ship has approximately 30 transmitters providing frequency band coverage ranging from low frequency to ultra high frequency. The power outputs of the transmitters vary from ten watts to 10,000 watts. Numerous radio receivers are installed, and their frequency bands correspond to the transmitter frequency coverage.

There are five antenna towers which rise from the antenna deck, formerly the flight deck. The towers support the antenna arrays for low, medium, and high frequency transmitters and receivers. Some of the transmitting antennas are relatively directional, thus facilitating a concentrated, beamed radio signal. In view of the large numbers of transmitters and receivers and the relatively little space for the antennas, most transmitters and receivers must share antennas. This is done

through a system of multicouplers. The complicated antenna system is the first of its kind and was designed especially for installation in *Annapolis*.

Annapolis can be used in almost any contingency in which it is envisioned that Fleet communications will run into difficulties. The large amount of electronic equipment installed makes possible the handling of a large volume of messages. The powerful transmitters and efficient antennas make possible reliable communication transmission over any distances required by the Navy. The sensitive and efficient receiving system makes possible the reception of signals that many other ships would not be able to receive. Numerous multi-channel sets permit the simultaneous handling of four, eight, or 16 channels of teletype on one frequency, affording an obvious saving in transmitters and frequencies and a tremendous gain in message handling capacity.

Relay Race

The word "relay" must be emphasized when trying to envision the communication operations of *Annapolis*. Messages may arrive via ship-to-ship or shore-to-ship circuits in systems such as radioteletype, CW, voice, facsimile, visual, or – if radio silence prevails in the force task – transported by helicopter and destroyer. These messages are internally processed for further relay on broadcast, ship-to-shore, or ship-to-ship circuits.

The vast majority of messages are handled on the radioteletype systems. Here is a prime difference of mission between a major communications relay ship, such as *Annapolis*, and a command ship, such as the USS *Wright* (CC-2). Each ship has sizeable communication installations, but the arrangement and circuit use of the equipment is considerably different.

Missions Differ

The equipment in *Annapolis* is arranged primarily to facilitate the expeditious relay of large volumes of teletype messages for a large force on broadcast, ship-to-ship, and ship-to-shore circuits. The equipment in *Wright*, designed as a floating command headquarters, is arranged primarily to support the "voice of command" in *Wright*, either tactically or administratively, with an equally heavy emphasis on both voice and teletype circuits.

In *Annapolis*, very little of the message traffic handled would be addressed to or originated by *Annapolis*; in *Wright*, most of the messages handled would be addressed to or originated by the

embarked command. *Annapolis* does not have the space or facilities for an embarked flag staff, while *Wright* is designed to support a large headquarters-type command, and space is provided for numerous offices, war rooms, and briefing and conference areas. Facilities are available for theatre-type presentations similar to command posts ashore, including projection equipment and large screens for the display of maps and photographs which can be produced on board. Large status boards and maps, mounted on tracks so that they may be easily rolled into view, are displayed against bulkheads.

Thus the missions and tasks of the two ship types make them independent of one another. However, were the two ships to be involved in the same operation, the envisioned employment would have the command in *Wright* using the broadcast, ship-to-ship, and ship-to-shore relay facilities of *Annapolis* for general-service communications with the other forces involved. The communications facilities of *Wright* would be used by the command for its own, specialized-command ship-to-shore and ship-to-ship communication requirements.

Tremendous Volume

A Cuban or Lebanese type situation is an example of an operation in which *Annapolis* could profitably be employed. During these emergencies there was tremendous competition for frequencies by the large number of commands and ships endeavoring to send large volumes of message traffic on ship-to-ship and ship-to-shore circuits. These circuits and the normal broadcasts became heavily loaded because of the sheer volume of messages for such a large number of commands and ships. *Annapolis* could have carried a considerable portion of the message load.

As an example, *Annapolis* could have provided the communications to a large functional group such as the Atlantic Fleet Amphibious Force. By acting as a concentration point at the scene of action for the relay of messages back to shore stations, *Annapolis* with her powerful transmitters and multi-channel circuits, would have improved the speed, efficiency, reliability, and capacity of the many individual ship-to-shore circuits. Similarly, reliability could have been vastly improved on the shore-to-ship circuits if *Annapolis* had acted as the relay point because of her refined and improved receiving antenna system.

The employment of the multi-channel equipment on the ship-to-ship and ship-to-shore circuits also would have enabled a better distribution of the

preciously few good frequencies available. Fleet broadcasts near the scene of action in the radio-teletype, CW, and facsimile modes would have been available and, because of near proximity to the operating forces, would have been more reliable than a broadcast from a distant shore station.

The internal traffic-handling capacity of *Annapolis* is quite high and, in terms of relay for broadcasts, ship-to-ship and ship-to-shore circuits, is sizeable enough to support several at-sea task forces involved in operations.

It is believed that the employment of *Annapolis* in such operations would have done much to eliminate the traffic-handling problems, both in the ships and at the distant shore communications stations, by acting as a temporary extension of the shore stations into these areas of special operations. In the future, it is obvious that *Annapolis* will have an important part to play in handling communications for U.S. Naval forces.

LPH-10 (TRIPOLI) Launched

LPH-10 (*Tripoli*), the fifth ship of a new class especially designed to support modern amphibious warfare, was launched at Pascagoula, Mississippi, on 31 July 1965. The ship was christened by Mrs. Clifton B. Cates, wife of General Clifton B. Cates, USMC (Ret.).

The new amphibious assault ship will implement the vertical envelopment concept in which a complete amphibious assault force is transported by helicopter from the deck of the LPH to engage the enemy not only on the beaches but behind his lines of defense.

Tripoli's mission requires accommodations for 50 officers and 500 enlisted men, plus 230 officers and 1900 enlisted men in the staff, squadron and landing force. Because of the large number of personnel, troop habitability received special attention in the ship design. Troop living compartments are air-conditioned and equipped for maximum space and comfort. The LPH provides more living space per man than any other ship in the amphibious force.

Tripoli will embark, transport, and land troops by means of either 20 large amphibious transport helicopters or 30 light Seahorse helicopters. She can launch or recover waves of four aircraft simultaneously with her full complement of aircraft on

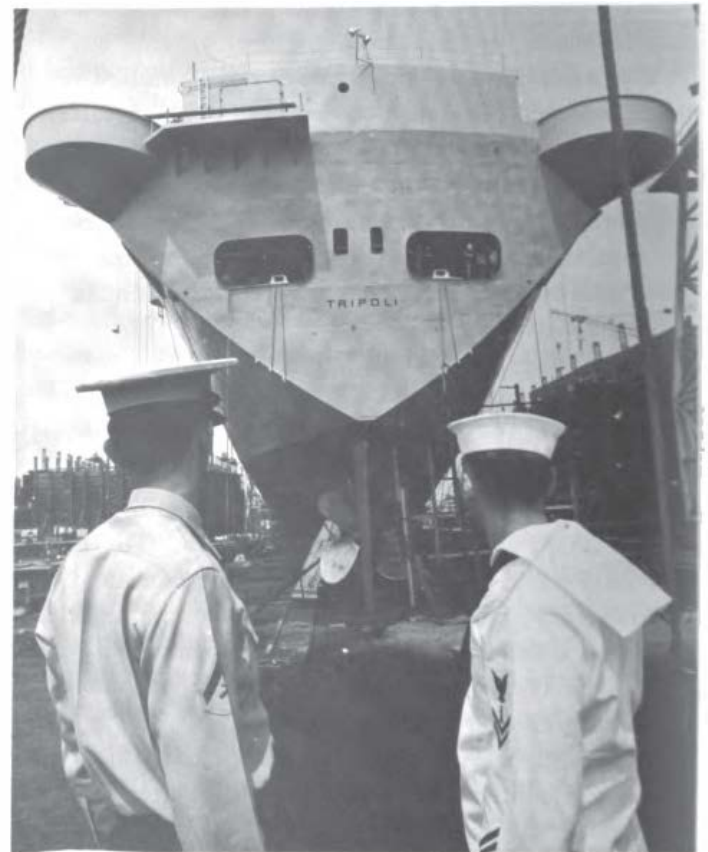
board. The flight deck provides eight landing/takeoff spots. Conventional fueling stations and electrical and air outlets provide immediate service for aircraft or vehicles.

The ship's medical facilities support her crew and assault force during amphibious operations and are equipped to serve equally well the peacetime function of casualty evacuation during civil disasters. The *Tripoli* can accommodate more than 300 casualties at once.

Tripoli's hull dimensions are: length overall, 592 feet; beam, 105 feet; displacement (full load), 18,300 tons; draft, 26 feet 6 inches. The single shaft propulsion machinery transmits 22,000 horsepower; the ship's speed will be more than 20 knots.

LPH-10 is the second ship to be named for the amphibious operation that inspired the words of the Marine Corps Hymn, "to the shores of Tripoli." The first *Tripoli* (CVE-64) was an escort aircraft carrier.

The new amphibious assault ship LPH-10 (*Tripoli*) is looked over by Marine Corps and Navy. The ship, which will carry Marines for vertical envelopment operations, was launched at Pascagoula on 31 July 1965.



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