

HF ANTENNA

HF EMERGENCY ANTENNA SYSTEM



ocean systems division

Submarines must have a means of emergency communication in cases where the normally used antenna systems are rendered inoperable. Sippican offers a modern, yet simple and reliable system that comprises a manually erectable telescoping antenna, an Antenna Base Unit, an RF Transmission Line and a Hull Penetrator.

The manually erectable, telescoping antenna is approximately 11 meters in length when fully extended and is capable of progressive adjustment and being locked to any desired length. The antenna collapses to approximately 2 meters in length which allows for easy stowage inside the submarine when not in use.

The Antenna Base Unit is a pressure-proof assembly that is permanently located outside the hull of the submarine in the vicinity of the bridge. This Unit contains broadband matching networks which allow for direct connection of the ship's HF transceiver to the Antenna Base Unit,

thereby eliminating the need for radio personnel to operate an antenna tuner. These broadband matching networks provide a match to the antenna such that the nominal VSWR at the inboard end of the transmission line is less than 3:1. The Antenna Base Unit also houses integral Electromagnetic Pulse (EMP) and Lightning Surge Protection and is totally compatible with the seawater environment.

Sippican can also provide, as an option, the coaxial Transmission Line and/or the coaxial Hull Penetrator used to connect the Antenna Base Unit to the ship's HF Transceiver. RG-217/U is normally provided for the Transmission Line and a coaxial Hull Penetrator compatible with the particular class of submarine can also be provided.





Connecting antenna to base unit.

SYSTEM SPECIFICATIONS

PERFORMANCE CHARACTERISTICS

- Frequency Coverage: 2-30MHz
- Transmitter Input Levels: Up to 400 watts PEP
- Voltage Standing Wave Ratio: Less than 3:1 Nominal
- Typical Antenna Gain: -4dB relative to a quarter wave monopole
- Operating Bands: 2-7MHz and 7-30MHz

ANTENNA CHARACTERISTICS

- Number of Sections: Five (5) telescoping nested within a sixth lower section
- Length Fully Extended: 10.8 meters (35.4 ft)
- Length Collapsed: 1.98 meters (6.5 ft)
- Weight: 14 kilograms (31 lbs)
- Wind Speed: Up to 160 Kilometers/hour (100 mph)

ANTENNA BASE CHARACTERISTICS

- Maximum Sea Pressure: 70 bar (1000 psig)
- Connector: D.G. O'Brien type C07C0254G01
- Mating Connector: D.G. O'Brien type C07C1016G01
- Weight: 44.5 kilograms (98 lbs) maximum

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