



ARTEMIS



The bridge is the operational centre of the ship. Manned 24 hours every day, here are located all the instruments and controls for navigation and the safety of the vessel, both at sea and in port. The title stems from ship's in the past, where this control centre was part of an elevated structure extending over the weather deck.

The bridge is manned using a watch system, with the following personnel:

00.00 – 04.00 & 12.00 – 16.00 Senior Second Officer and Third Officer/Cadet

04.00 – 08.00 & 16.00 – 20.00 First Officer and Third Officer

08.00 – 12.00 & 20.00 – 00.00 Second Officer and Third Officer/Cadet

In addition to this the Deck Department consists of the Captain, Staff Captain and Senior First Officer, these personnel are present on the bridge as per Navigational requirements and particularly for port arrivals and departures. At sea, there is always one qualified Officer, and a rated Seaman on the Bridge. The Senior First Officer is in overall charge of the Navigation with the Junior assisting them at night, an additional helmsman is present to act as an extra lookout.

In port, one qualified Officer and a Seaman, to monitor all safety aspects while the vessel is alongside and to ensure the ship maintains her position at anchor. The Junior is required to conduct regular rounds of the vessel to ensure the security is maintained, mooring lines are tended as required and to monitor the general condition of the Vessel.

Ships Master Clock

This is located at the back of the bridge and displays the ships time. Whenever we pass a time zone and have to either advance or retard the vessels time, this clock acts as a

master, and changed automatically adjusts the rest of the clocks around the vessel.

Stability Computer

All the ship's stability information is kept on a computer and continually updated. The fresh water, ballast water, fuel, oil and stores weights are constantly monitored and adjusted to keep the ship at the optimum trim and stability condition. The computer can be used for damage control should the vessel sustain an ingress of water.

Safety on Bridge

Watertight Doors. There are 20 watertight doors located on the lower four decks of the ship, which when closed, divide the ship transversely into a number of watertight compartments. If the ship's hull were to be damaged, these doors would contain the water in a limited area. Thus maintaining the ships stability by minimizing the quantity of water entering the vessel below the water line. All these doors can be closed together or in sections, and re-opened from the Bridge. They can also be operated individually locally.

Sprinkler Panel

Alarm

control



In the event of a sprinkler head being activated, an audible alarm is set off on this panel and a light indicates the location.

Artemis has two alarm systems of Fire Alarms; Manual and Automatic. The manual alarms are located throughout the ship so that anyone Discovering a fire can raise the alarm. This actions set of the fire alarm on the bridge and a light appears on the Panel indicating location. The automatic fire detectors are also located throughout the ship and senses either smoke or heat, depending on their location.

Fire Screen Door Control panel

From this pane, we can automatically release the fire resistant doors, which divide the ship transversely into five zones, isolating the various compartments in the vessel. When the doors are closed, this is an indicated on the panel. Each door can be released and opened locally.

Fire Alarm Panel

Ships Particulars

Ships Name: ARTEMIS
Port Registry: HAMILTON
Built By: Wartsila
Place: Heskinki, Finland
Year: 1984
Official Number: 705797
Call Sign: ZCDM7

Tonnage International **Gross:** 44588 **Tonnes Net:** 19744 **Tonnes**
 Displacement 24841 **Tonnes**
 Deadweight 4661 **Tonnes**

Length Overall: 230.62M
Breadth: Extreme over Bridge Wings – 32.5M

Service Speed: 21.5 Knots
Fluids: Fresh Water – 2343 **Tonnes/Ballest** 2254 **Tonnes**
 Fuel Oil - 964 **Tonnes**, Diesel Oil: 188

Fuel Consumptions: 80 **Tonnes** a day at 21.5 knots
Engines: 4 x Medium speed Wartsila pielstick diesels
Propellers: 2 x Kamewa controllable pitch 4 blades 5.2M/17'7 Diameters
Bow Thrusters: 2 x Kamewa controllable pitch 2000 hp/1491 KW
Stabilizers: Sperry Gyrofin 5.2M x 1.7M
Anchors: Cieya AC14 stockless 6.34 **Tonnes**
Cable: 12 Shackles on both anchors
 1 shackle = 15 Fathoms = 27.3M = 90 Feet

Automatic Fog Signal



In the event of encountering reduced visibility, we can automatically indicate to other vessels our presence in the vicinity by sounding a prescribed fog signal, on the ships whistle, at defined intervals. The sounding of this of this signal is an international requirement.

The Compasses

There are two types of compass on board Artemis. The gyro compass is used primarily to steer the ship and is situated on the port side of the bridge. It uses the properties of gyroscopic inertia and precessions in order to obtain true north. Several gyro repeaters are utilised on the bridge for navigational purposes, these have azimuth mirrors attached to them, which enable us to take bearings of Navigational marks, plants and stars. The magnetic compass is situated above the bridge and is used as a back

The Steering Apparatus

From the Bridge we can steer the ship by either automatic pilot or manually, both gyro and magnetic compass repeaters are located at the steering position. The transmission from the bridge to the steering gear is by electrical signals that adjust the Rudder angle. There is also a back up Hydraulic Steering System.



Rudder Angle Indicators

These indicate the Rudder angles; each rudder can be controlled independently.

Bow Thruster Control

Two variable Pitch Bow Thruster are located transversely in tunnels in the Bulbous Bow of the ship. At slow speed they can be used to swing the bow to the Port or Starboard, thus increasing the manoeuvrability of the vessel whilst entering or leaving a port.

Rate of Turn Indicator

Located at the front of the Bridge, this indicates the rate at which the vessel is turning during a maneuver.

Revolution Counter

These indicate the revolutions per minute of the propellers. Each of the propellers has a separate dial.

Engine Telegraphs

These operate as means of communicating engine orders from the bridge to the Engine Room. There are a set of Telegraph Repeaters on each bridge wing, for use when leaving and entering a port. Control must be taken at each Telegraph position prior to use.

Talk Back System



A direct line communication system between the Bridge and Engine Control room.

VHF Radios

These are radio receivers and transmitters that operate on very high frequencies with a line of sight range that varies according to atmospheric conditions. They are used mostly for communication with pilots, harbour authorities and other vessels. Specific channels are monitored, under requirements of international Regulations as part of GMDSS. They are used to communicate emergency and safety information, for example Meteorological broadcasts.

By means of this device when heavy rain or showers are experienced, the Officer on duty can have a clear view forward. An electric motor drives the circular

Automatic Pilot

This equipment can be used to steer the vessel whilst we are in open seas, clear of land and traffic. The automatic pilot can be set on a specific Gyro Heading and the system will then apply helm in order to maintain the heading. This does not however take in to account the effect of the current and sea state, and as such must be continually monitored and adjusted for the vessel to maintain its

GMDSS Equipment



This includes a selection of radio equipment operating on various frequencies; MF/HF and, the afore VHF, that is used for distress and safety monitoring. It is also employed as a general means of communication along with Satellite systems that are incorporated with the equipment.

Radars



There are four radars on the bridge. These show us, on a screen, the entire surface objects that surround the ship and be used at ranges of 0.25 to 96 nautical miles. The radar has many functions as follows, position fixing, the radar will detect the coastline and prominent navigational marks such as beacons, enabling us to determine the vessels charted position by taking a number of range and bearing from these points. These radar fix's can be cross-reference with the GPS to determine its accuracy. Collision avoidance particularly important in Restricted Visibility, but also used for vessels at long range, the radars can pick up other vessels as targets and selected provide us with a vector detailing their course, speed and range, bearing, closest point of approach and time until this occurs. In addition, guard zones can be activated at determined intervals around the vessel, so that the radar will automatically acquire any targets that come within this zone. Trail Manoeuvre; An alternative of course and/or speed can be considered in a trail mode to determine its effect, prior to the actual alteration itself. Determination of visibility: the radar provides accurate information on range, so it can be used as a reference to determine the ships visibility.

Clear view Screen

window round at high speed, such that any rain falling on it is rapidly thrown off.

Between sunset and sunrise and in reduced visibility, whilst at sea. Artemis displays her navigation lights so that she may be seen by other vessels. The position and colour of the lights observed indicate the direction in which the vessel is heading, there are also specific lights that are used to indicate the it is from here you receive all our arrival and departure, noon and general information broadcasts. We can transmit throughout the ship or isolate certain areas, and in the case of emergency, orders will reach both passenger and crew cabins by an override system, even if the local controls are turned off.

Depth Sounder

This machine gives us both a digital and a graphical readout of the depth underneath the keel, up to 1000 metres. They operate using acoustic energy directed to the seabed and as the speed of sound in salt water is a known value, the time delay between transmission and reception enables the equipment to calculate depth.

Satellite Navigator

The vessel carries 2 DGPS units (Differential Global Positioning System). Developed by the Americans, these automatically track and select appropriately located satellites to derive a 4-position line fix, giving us a digital readout of latitude and longitude. The system works by measuring distances between satellites in orbit and a receiver, giving spheres of position. These distances are measured by comparing time signals generated simultaneously by the satellites and receivers internal clocks. The differential GPS provides a more accurate fix as it utilizes a further correction by shore based stations of known geographical positions, however it can only be used in range of these stations, and therefore the system automatically reverts to standard GPS beyond these ranges. We can enter sail plans and waypoints into these and it will tell us our cross track errors and course to steer to reach the next waypoint. The DGPS are accurate to within 10m, on a 95% basis.

AIS Automatic Identification System

This is the newest piece of equipment to be added to Artemis Bridge, operating on VHF it enables the automatic transfer of information between ships and shore side stations, concerning identification, current navigational data and voyage plans. Intended to assist with collision avoidance, the system can be incorporated with either an electronic chart or ARPA display so that vessels can be positively identified automatically.

Electronic Chart Display Unit

The vessel carries electronic charts that are used as a supplement to the paper chart portfolio; this displays the vessel and the charted track as an overlay. Acquired targets from single designated Radar will also appear on the electronic chart. Used extensively for route monitoring as it provides continuous navigational data such as course, speed, distance from track and ETA's the unit is not certified as a stand-alone system and is therefore used in conjunction with the paper versions. It also incorporates an electronic logbook and can be used for route planning with a playback system to review for example, a berthing operation.

Heeling Tanks

The bridge have control of 4 designated Ballast tanks forward and aft that can be used to heel the ship

vessels nature of work and condition of manoeuvrability. These navigation lights are used extensively for collision avoidance.

Public Address System

either to port or starboard to counteract the effects of any wind heeling moments or turning heeling moments. These are operated by opening valves and pumping water to the required side. These are only small tanks and the engine control room maintains any further Ballast requirements.

The Ship's Log

Artemis has two types of log, A Doppler log and Electromagnetic Log, these indicate the ships speed. The Doppler transmits a sonar beam to the seabed and the frequency shift is used to calculate the ships speed using a pre-derived formula. The electromagnetic field that is proportional to the flow rate and therefore used to calculate the speed.

Meteorological Equipment

Various metrological equipment on the bridge include: wet and dry bulb thermometers, located in Stephenson Screens on each side of the vessel, anemometer, indicating both the true and relative wind speed and direction, a Barometer giving atmospheric pressure and displays it graphically so that we may determine the rate of change and the pressure tendency over several hours and predict possible future changes in weather conditions. The equipment is used for onboard monitoring and predicting weather systems such as Fog or Hurricanes, all Deck Officers are training Meteorological observers for this purpose. In addition Artemis is a British Reporting ship taking observations every six hours at sea. These are sent via telex to one of the meteorological centres ashore, where the reports from this and other vessels are collected together, analysed and used to compile weather reports and forecast

Charts and Publications



Artemis carries some 2000 Navigational Charts. These, together with the other nautical publications used on the bridge, are corrected weekly so that we can always have the most up to date information at hand. The corrections are received by e-mail to enable immediate application as required. Further publications include Notices to Mariners, Admiralty Sailing Directions, Light Lists, Radio Signals and Tide Tables. Collectively, these provide the mariner with the most current information regarding Ports, Shipping areas, Navigational Marks, Reporting

Requirements and Contacts, General Navigational concerns and Ocean state.

Stabiliser Control Panel

We have 2 stabilizer fins that may be extended either independently or together, or at any time at sea, in order to reduce the rolling of the ship by up to 85%. Each fins is 17 feet long by 5.5 feet in width and they are located at either side of the vessel at approximately mid length below the water line. The system is operated by two Gyroscopes, controlled by a computer, and as such is an intelligent system that activates the motion of the fins according to the sea state.