

Consultation and discussions will be necessitated for obtaining an agreement between the countries in our NAVAREA XI, and the Hydrographic Department of Japan will request these countries concerned for their kind cooperation and support.

ELECTRONIC CHART IN JAPAN

(Extracted from JHD Pub. No. 981 Hydrographic Bulletin (Jan. 1984))

In recent years manufacturers of electronic equipment in Japan have been developing certain navigational aid systems in which chart information such as coastlines, aids to navigation, etc., and ship's position data obtained from Loran C, NNSS, etc., and tracks are combinedly displayed on a CRT. The chart information is digitized and stored on the cassette tape and is fed to the system.

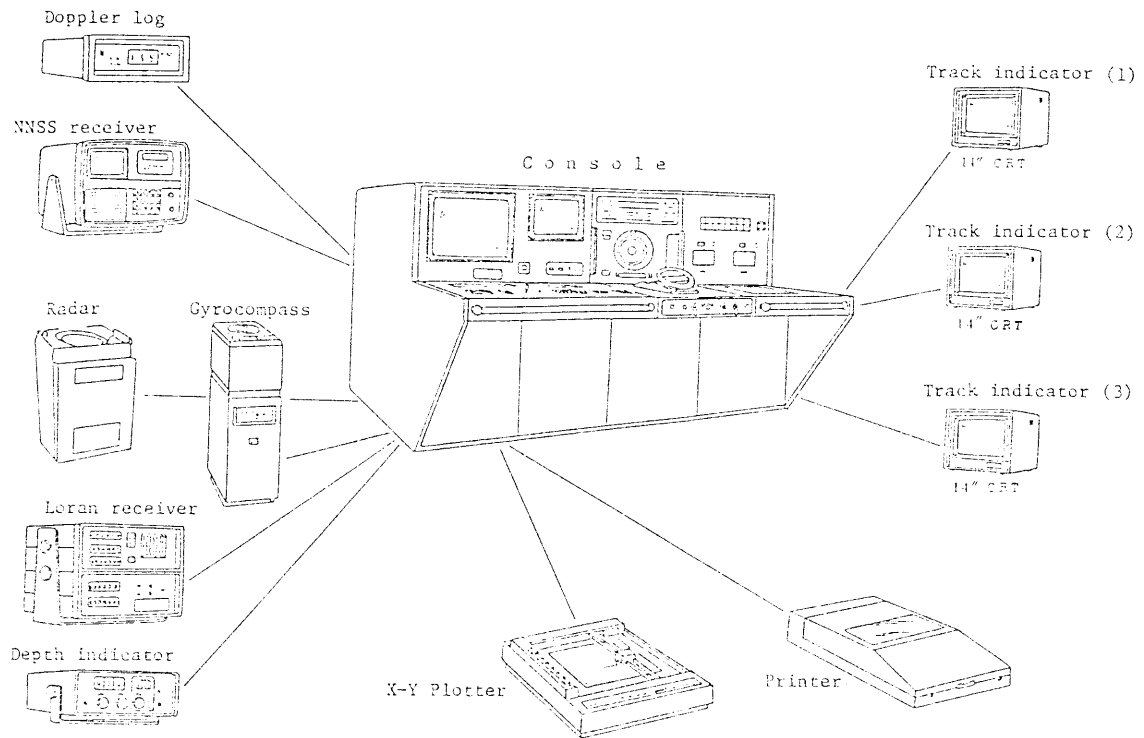
Although development of such a system, so called "**electronic chart**", is still in its initial stages, and cannot yet supersede the conventional nautical charts currently used, it is expected that a considerable advancement will be made in the near future.

Among these systems already employed on various vessels, an **Automatic Navigation Control and Display System (ANCDS)** has recently been developed and installed on board MSA Patrol Vessels for the purpose of automatic navigation and searching operation especially in keeping watch and searching ships in distress in offshore areas.

The ANCDS has the following distinctive features:

1. Automated calculation of ship's positions

The ship's positions in higher accuracy are calculated automatically based on the positioning data obtained by a hybrid positioning system using signals of NNSS and Loran C and applying the Kalman filtering techniques.



2. Automatic steering

The ship's steering can be made automatically along the planned courses programmed and stored on the MT (cassette tape) as series of short straight lines.

3. Radar video

Radar information is processed for digitization and is mixed and displayed with computer generated charts on the CRT.

4. Display of chart information digitized and stored

Chart information is digitized and stored on the MT. It includes such information as coastlines, 20m depth contours, positions and characteristics of lights, lattices of lat/long and their values, and part of maritime limits. Such information has been adopted from 61 different sheets of nautical charts mainly those covering coastal waters of Japan at a scale of 1:200,000.