

	HEALTH, SAFETY, ENVIRONMENT AND QUALITY MANAGEMENT SYSTEM 86.0 Transmitting Magnetic Compass (TMC) <i>ON THE JOB TRAINING</i>	OJT : 077 Page 1 of 2 Date : 21-Sep-26 Rev : 10.0 Appr : DPA
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VESSEL : _____

DATE : _____

Details of training: Transmitting Magnetic Compass (TMC)

A transmitting magnetic compass (TMC) on a ship is a navigation system that reads the magnetic compass heading and converts it into digital data.

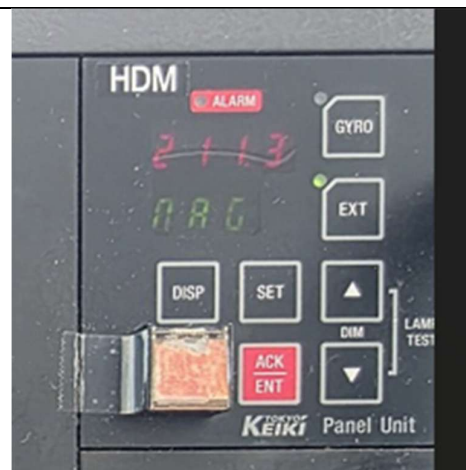
- A sensor is attached to the magnetic compass to track the movement of the compass card.
- It converts the physical heading into digital.
- It transmits real-time heading info to remote display at autopilot panel.

Benefit

- A backup upon failure of gyro compass to steer the vessel on auto pilot.
When gyro compass fails, the automatic steering by magnetic compass can be attained as an emergency measure by selecting "Magnetic compass" on the system for the interim period until gyro is repaired.



Ship's magnetic heading on compass card, sensor converts the magnetic compass heading to electrical signal



Converted Digital reading, Heading Monitor Panel built in the auto steering system. Magnetic compass heading is selected by pressing EXT button and ACK/ENT button simultaneously (refer maker's instruction)

General Procedure to Switch over to TMC (Magnetic compass heading) on Auto Mode

1. Switch over to hand steering to steer magnetic compass course
2. Ack the Gyro Failure and Heading Deviation alarms as applicable
3. Confirm that the magnetic compass heading is reading correctly on the digital display panel.
4. Once vessel is steady on magnetic course, change the heading source from Gyro to Magnetic by selecting the 'EXT' button. The display reading will change from gyro to magnetic. (Refer maker's instructions on Heading Monitor System)
5. Align the Autopilot heading (course setting knob) until the digital autopilot course pointer matches with the Magnetic Compass heading.
6. Switch over from Hand to Auto Mode.
7. Monitor the rudder responses to ensure that auto pilot is keeping the ship steady on magnetic compass heading, refer GPS course over ground (COG)
8. Check local variation and deviation for Compass Heading for next course
True Course (TC) +/- Variation = Magnetic Course (West – Add, East – Subtract)

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Magnetic Course (MC) +/- Deviation (Dev) = Compass Heading (West – Add, East – Subtract)

9. Set off-course alarm

Tokyo Keiki - Heading Monitor (HDM-110), Auto Pilot PR-600

1. Switch over from Auto mode to Manual steering
2. Confirm that the difference between magnetic compass heading of HDM operating panel and reading of compass card is less than +/-1.
3. Turn Off the switch of each repeater
4. Select the magnetic compass on HDM panel
5. Synchronize the repeater connected to the auto pilot
6. Turn "ON" the repeater switch.

Following from the maker's manual.

3.3.3 System Selection

 CAUTION
● System selection (switching) may cause large change of the true bearing. During the automatic steering, it may cause a large course change. In order to prevent this, once turn the steering mode of the automatic steering system to "MANUAL", and after confirming surrounding safety of own ship, turn to "AUTO" steering again.

Usually, it is used, choosing a gyro-compass.

(1) Turn "OFF" the switch of each repeater connected to this system.

(2) To select the gyro-compass, push the system selection switch **GYRO** ⑥ with pressing **ACK / ENT** switch④.

To select the magnetic compass, push the system selection switch **MAG / EXT** ⑦ with pressing **ACK / ENT** switch④.

When completed the system change, it buzzes shortly three times.

(3) Synchronize the repeater indication connected to this system with the selected system's true bearing. (*1)

(4) Turn "ON" the repeater switch.

7. Align the Autopilot heading (course setting knob) until the digital autopilot course pointer matches with the Magnetic Compass heading.
8. Switch over from Hand to Auto Mode.

Deck officers to familiarize with the maker's instructions for using TMC on Auto mode

Above has been read and understood.

C/O

2/O

3/O

D/C

Verified by: Master _____

Please file in OneDrive/ 3.2.3 Training folder