



# MANAGEMENT SYSTEM MANUAL

## KNR 8.6 Loss of Steering Procedure

Originator:	Approved By:
Steve Walsh	Albert F. Suchy

### 1. Purpose

The following section outlines the Loss of Steering Procedure and instructions for the Stern Thruster's hydraulic steering.

### 2. Responsibility

It is the responsibility of the Chief Engineer to ensure that all engineering personnel respond to Loss of Steering emergencies in a timely manner and to have adequate instructions available to handle those emergencies. The Chief Mate is responsible for the bridge personnel.

### 3. References

Ross Hill Book 1, pages 2-5; Emergency Steering Instructions

### 4. Procedure

#### On Discovery of Failure

Notify the Engineer on Watch of failure. Engineers shall check the following:

- Steering pumps
- Hydraulic tank levels and temperature
- Steering motors and hydraulic piping.

#### Bridge switch to alternate modes of steering on bridge:

- Kongsberg joystick
- Masterpilot
- Manual
- Non Follow-up (NFU)

#### If Steering fails in Kongsberg system

- a) Check for communication port failure. Reset controller A serial lines.
- b) Reset SBC500 in bonded stores locker, in DPC-11 console.

#### If bridge modes fail

- a) Bridge notify Engineer on Watch
- b) Engine Control Console (ECC) takes control and verifies steering works
- c) Send steering control back to Bridge
- d) Bridge returns to desired steering mode
- e) If unable to regain bridge control, ECC maintains steering with local NFU "joysticks" from ECC controls



# MANAGEMENT SYSTEM MANUAL

## KNR 8.6 Loss of Steering Procedure

Originator:

Steve Walsh

Approved By:

Albert F. Suchy

### If Engine Control Console (ECC) mode fails

Man the thruster room emergency steering stations with 3 people with UHF radios.

### Other information

For a Loss of Steering Emergency, the Bridge shall notify the Engineer on Watch that there is a loss of steering. Use of the sound powered phone will sound alert engineers in the engine spaces. Notification may include the "Fire & Emergency Alarm" if the vessel is in restricted waters. The vessel shall come to a full stop if it is safe to do so. The Chief Engineer and/or First Assistant Engineer shall be notified immediately. The Bridge shall be notified as soon as the problem is found or fixed. If steering cannot be restored, reset the steering controls by taking them down to the ECC (see reference manual).

If there is still no steering control, at least three men will be stationed in the Stern Thruster Room, one for each thruster and one for communications. They shall follow the "Emergency Steering Instructions" posted in the Stern Thruster Room port and starboard. Those instructions are attached.

# Emergency Steering Instructions

This overview is intended for the use of instruction for the manual operation of the ship's steering units. See diagram on reverse side for further details of mentioned assemblies if necessary.

The hydraulic steering unit itself is composed of an Emergency Pump and Valve Arrangement (RED INDICATING MOTOR COLOR), AND A main Pump and Valve Arrangement (BLUE INDICATING MOTOR COLOR). The Emergency Pump is the smaller of the two, and is located in the upper portion of the steering unit. To determine which pump is in operation, feel the forward end of the motor and detect airflow from its fan. USE ONLY THE PORT STEERING UNIT IF THE VESSEL IS OPERATING ON EMERGENCY POWER.

## ➤ IF THE MAIN UNIT (BLUE INDICATING COLOR MOTOR) IS RUNNING ◀

1. locate the 2 blue colored solenoids on the aft end of the Steering Unit – approximately mid-point on the assembly. The small brass pins located on the aft ends of the solenoids are the manual control operators. See diagram on reverse side for further details.

PUSH THE PIN ON THE VALVE MARKED “L” TO TURN LEFT RUDDER

PUSH THE PIN ON THE VALVE MARKED “R” TO TURN RIGHT RUDDER

## ➤ IF THE EMERGENCY UNIT (RED INDICATING COLOR) IS RUNNING ◀

1. Locate the red cylinder on top of the steering unit. The “T-Bar” assembly facing aft from the cylinder is the manual control operator. To engage the emergency unit steering control – push the “T-Bar” in (forward), and rotate handle a full 180 degrees. You can tell that the “T-Bar” is engaged by feeling its resistance to motion in both directions

PULL OUT “T-BAR” TO TURN LEFT RUDDER

PUSH IN ON “T-BAR” TO TURN RIGHT RUDDER

2. Rotate “T-Bar” 180 degrees and pull out (aft) to disengage steering.

**FURTHER INFORMATION:** Thruster angle indicators are positioned outboard of each steering unit on the thruster shaft cages. The port unit also is equipped with a gyro repeater housed directly above the thruster shaft cage. Communication to the bridge during steering operations is made ready by a sound-powered phone located on the bulkhead at mid-ships.

