

M-103

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: September 6, 1979

Forwarded to:  
Rear Admiral Bruce Keener III  
Commander, Military Sealift Command  
Department of the Navy  
Washington, D.C. 20390

SAFETY RECOMMENDATION(S)

M-79-98

On January 15, 1978, the U.S. motor tankship SEALIFT CHINA SEA rammed the Italian-registered cargo vessel LORENZO D'AMICO which was moored in Los Angeles harbor. The bow of the SEALIFT CHINA SEA penetrated about 15 feet into a cargo hold of the LORENZO D'AMICO. No deaths or injuries resulted from the accident; however, the LORENZO D'AMICO was damaged beyond economical repair and was declared a constructive total loss. The SEALIFT CHINA SEA was damaged slightly. 1/

The accident resulted when the pitch was applied in the wrong direction to the SEALIFT CHINA SEA's controllable-pitch propeller during a turning maneuver. The automated engine control system was inoperative and propeller pitch was being operated manually at the local control station. The pilot ordered half astern and full astern but the propeller was operated at half ahead and full ahead. The errors occurred through a misunderstanding of the hand signals used among three persons in the engineroom to transmit pitch orders to the local control station two levels below and about 50 feet aft of the engine control room.

Since the pitch percentage and direction indicators in the wheelhouse console and the pitch direction indicators on each bridge wing were integral features of the automated control system, they were inoperative. Therefore, an indication of the actual direction of thrust was not available on the bridge. Likewise, those indicators in the engineroom console were also inoperative. The actual direction of pitch and its percentage was displayed only on a mechanical scale of the pitch control rams at the local control station.

1/ For more detailed information, read "Marine Accident Report--U.S. Motor Tankship SEALIFT CHINA SEA Ramming of the Italian Motor Cargo Vessel LORENZO D'AMICO, Los Angeles Harbor, California, January 15, 1978" (NTSB-MAR-79-13).

The automated control systems on the SEALIFT CHINA SEA and the eight other ships of the class have failed many times. Those failures are significant in that the vessels have been operated in restricted waters on several occasions with no indication on the bridge regarding the actual direction of pitch. The Safety Board believes that to be an unacceptably risky situation, and that ships' bridges should be equipped with prominently displayed thrust indicators which operate regardless of the failure of the automated control systems.


The ship was designed for manual operation of the pitch in the event of automated system failure, but did not provide for a reliable method to relay thrust orders to the local control station. We believe that hand signals are an inadequate method, as demonstrated by this accident, and that appropriate equipment should be installed to preclude the use of hand signals. Furthermore, we believe that equipment should be installed so that persons in the wheelhouse, the engine control room and at the local control station can communicate reliably with each other.

The history of failures of the automated control system indicates that an adequate degree of maintainability had not been achieved. The investigation of this accident revealed that the technical manuals, spare parts, training of engineers, and shoreside support in combination have not been adequate. Therefore, the Safety Board believes these factors should be reanalyzed with a view toward identifying and eliminating the deficiencies, and to revising the equipment and manning requirements as necessary to achieve a satisfactory level of maintenance.

Therefore, the National Transportation Safety Board recommends that the U.S. Navy Military Sealift Command:

Collaborate with the U.S. Coast Guard to make a special evaluation to determine the deficiencies involved in maintaining the automated control system of the SEALIFT CHINA SEA and the other eight vessels of that class and make the changes in manning and equipment needed to achieve an adequate degree of maintainability onboard those vessels. (Class II, Priority Action) (M-79-98)

KING, Chairman, DRIVER, Vice Chairman, GOLDMAN and BURSLEY, Members, concurred in this recommendation. McADAMS, Member, did not participate.

  
By James B. King  
for Chairman