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Ser 2703 P411D

5 Aug 1953

From: Commander, Military Sea Transportation Service, Pacific Area  
To: Commander, Military Sea Transportation Service

Subj: USNS GEN JOHN POPE (TAP110); Stability

Ref: (a) Twelfth U.S. Coast Guard ltr S3/V-24 195 of 13 July 1953  
(POPE Stability letter)  
(b) Twelfth U.S. Coast Guard letter S3/V-24 195 of 15 July 1953  
(Transmittal letter)  
(c) COMSTSPACAREA ltr Ser 2597P413 of 21 July 1953  
(d) U.S. Coast Guard Stability Test Data Booklet - USNS GEN POPE  
(TAP110) of 24 May 1953

1. Copies of references (a), (b) and (d) were forwarded to Commander, Military Sea Transportation Service by reference (c).

2. Meeting the minimum draft requirements of references (a) and (d) requires the use of water ballast almost immediately after departure, as may be noted by inspection of page 33 of reference (d), especially in condition "C" (VIII TO IX), which is nearest to the usual loading condition of subject ship. A 90% burned-out arrival would require the use of 3614.5 tons of water ballast, and a 45% burned-out arrival, 1554.3 tons. The use of water ballast in this amount and frequency invariably causes trouble in the forms of fouled tanks and in-port ballast disposal problems.

3. There are four methods by which the use of inordinate amounts of water ballast might be reduced:

a. As will be noted by inspection of page 33 of reference (d), the presently governing GM requirement is that of the minimum required damaged stability curve with Numbers 5 and 6 Holds flooded. If the rather extensive structural alterations necessary to re-subdivide this 2-compartment space into three (3) compartments were accomplished, the governing requirement would probably become that of the Aft Machinery Space and Number 5 Hold curve, which in itself would be reduced somewhat by the reduction in size of Number 5 Hold. This would decrease the minimum draft requirements by a figure equivalent to approximately 1,000 tons displacement, but would involve rather extensive alterations to structure, arrangement, piping, access and ventilation features.

b. The installation of 1,000 tons of fixed ballast at a VCG of 7.0 ft. shifts Condition VIII to a draft of 24.13 ft. with a GM of 5.35 ft., and Condition IX to a draft of 19.54 ft. with a GM of 2.43 ft. The minimum permissible draft between these two conditions would be 22.32 ft. The difference between this minimum draft displacement and

departure displacement is 1586 tons, while the same difference at present is only 506 tons. In other words, at present water ballasting must now begin after 506 tons of bunkers and stores have been consumed from departure condition. The aforementioned fixed ballast would increase this margin by some 1080 tons. It should be noted that in order to carry this ballast at a VCG of 7.0', it would be necessary to stow it on top of the present ballast in #2 Hold, on the tank top in the storerooms in #3 Hold, within the deep wing-tanks aft of the Engine Rooms, and possibly in the form of pig-iron in the shaft alleys. COMSTSPACAREA recommends this method.

c. The damaged stability calculations used in the preparation of reference (d) were made by the original designer in 1943, and could possibly be somewhat out of line with present conditions. A recalculation of damaged stability requirements just might possibly result in some decrease in required stability.

d. Reference (b) states that the preparation of a Trim and Stability Booklet directing specific tank ballasting procedures might allow a reduction in the minimum draft requirements.

4. Since there will be three other ships in the same or possibly worse condition in regard to water-ballast requirements, it is requested that this problem be given consideration and that Commander, Military Sea Transportation Service, Pacific Area be advised as to any decisions made and specific measures to be taken.

H. L. COLLINS

E.S. Carmick  
By direction

Copy to:  
Master, USNS GEN. JOHN POPE (TAP 110)  
Commander, Twelfth U.S. Coast Guard Dist., OCMF