

4-2152

**You have 6 containers of ship stores each measuring 8'L by 4'B by 6'H and weighing 0.5 ton each. Each container is stowed on deck. What is the maximum VCG permitted of the remaining cargo if you are carrying rig water and load to maximum capacity? (See illustration D037DG, stability letter for M.V. Surveyor)**

A. 1.06 feet

Incorrect.

B. 1.32 feet

Incorrect.

C. 1.65 feet

Incorrect.

D. 1.90 feet

Correct: See Solution

**From M/V Surveyor's Stability Letter**

1) Paragraph 4. states that if you carry rig water, which according to the question you are, then the maximum weight of cargo without other below deck cargo or ballast is **35 tons.**

2) Paragraph 3. states that the height above the main deck of the center of gravity of deck cargo shall not exceed **2.0 feet.**

Therefore, according to paragraphs 3 and 4 the moment for maximum deck cargo load with a vessel carrying rig water is **70 foot-tons (35 tons x 2.0 feet).**

The moment for the containers is **3.0 tons x 3.0' = 9 foot-tons.**

**3.0 tons = 6 containers x 0.5 tons each**

**3.0 feet = the height of each container is 6 feet. The vertical center of gravity of each container is 3.0 feet.**

Remaining Cargo = Max Load - Containers

	<u>Tons</u>	<u>Height</u>	<u>Moment</u>
Max Load	35	2.0	70
Containers	3	3.0	9
Remaining Cargo	32	?	61

VCG = Moment/Tons

VCG = 61 foot-tons/ 32 tons

**VCG = 1.9**



16710  
13 May 87

Master, M/V SURVEYOR, O.N. 678678

Subj: M/V SURVEYOR  
Stability

Dear Sir:

A stability test, supervised by the U.S. Coast Guard, was conducted on the M/V SURVEYOR at New Orleans, Louisiana, on 7 May 1987. On the basis of this test, stability calculations have been performed. Results indicate that the stability of the M/V SURVEYOR, as presently outfitted and equipped, is satisfactory for operation in Ocean Service as indicated on the Certificate of Inspection, provided the following restrictions are strictly observed:

1. A maximum of 78 persons may be carried. In no case shall the number of persons exceed that allowed on the Certificate of Inspection.
2. The drafts as read on the draft marks shall not exceed 6 feet 3 inches forward or 7 feet 1 inch aft. Trim should be minimized. A loadline is not authorized.
3. The height above the main deck of the center of gravity of deck cargo shall not exceed 2.0 feet. Such cargo must be positively secured before leaving protected waters.
4. A maximum of 50 long tons of deck cargo may be carried when no other below deck ballast or cargo is carried. When rig water is carried, a maximum of 35 long tons of deck cargo may be carried, and no other below deck cargo or ballast is permitted.
5. No permanent ballast or other such weights shall be added, removed, altered, and/or relocated without the authorization and supervision of the cognizant Officer in Charge, Marine Inspection.
6. No watertight bulkheads shall be removed or altered without the authorization and supervision of the cognizant Officer in Charge, Marine Inspection.
7. The watertight door in the bulkhead at frame 18 shall be closed and properly dogged at all times when underway except when actually used for transit under safe conditions.

D037DG

8. Cross-connections between all tank sets shall be kept closed at all times when underway.
9. Bilges shall be kept pumped to minimum content at all times.
10. Jet fuel may be carried on deck in eight DOT tanks. The total weight of the fuel and tanks shall not exceed 23.16 long tons and the vertical center of gravity shall not exceed 3 feet 6 inches above the deck. Such tanks must be positively secured against shifting in a seaway prior to leaving protected waters. Neither passengers nor other deck cargo shall be carried when such tanks are aboard the vessel.
11. The Master should make every effort to determine the cause of any list of the vessel before taking corrective action.

It shall be the Master's responsibility to maintain the vessel in a satisfactory stability condition at all times.

This temporary stability letter shall be posted under suitable transparent material in the pilothouse of the vessel so that all pages are visible. It supersedes any stability information previously furnished the vessel.

Sincerely,



W. T. DOOR  
Lieutenant Commander  
U.S. Coast Guard

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Cont.