



## Marine Safety Center Technical Note

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Date: 10 May 1994

SSIC: 16703/171.080

MTN: 04-94

Subj: DAMAGE STABILITY CONSIDERATIONS REGARDING THE EXTENT AND CHARACTER OF DAMAGE FOR VESSELS NOT SUBJECT TO SOLAS WHICH OPERATE ONLY ON INLAND WATERS OR FERRY VESSELS; 46 CFR TABLE 171.080(a), FOOTNOTE 3

Ref: (a) 46 CFR Table 171.080(a), Extent and Character of Damage  
(b) CCGD12(mmt) ltr 5940/P.F. Spaulding 7111 dtd 23 Feb 72 w/sketch

1. PURPOSE: This memorandum promulgates MSC policy for performing the damage stability transverse penetration calculations for vessels not subject to SOLAS which operate only on inland waters or ferry vessels.

### 2. DISCUSSION:

a. Reference (a) specifies the dimensions of penetrations and character of damage to be used in the design calculations of vessels with Type I or Type II subdivision. Footnote 3 of reference (a) defines B as the beam of the vessel measured at or below the deepest subdivision load line as defined in 171.010(b) except that, when doing calculations for a vessel that operates only on inland waters or a ferry vessel, B may be taken as the mean of the maximum beam on the bulkhead deck and the maximum beam at the deepest subdivision load line. This averaging of B is intended to give some "credit" for overhanging structure/fender systems that are prevalent on these types of vessels. Although calculating the mean beam is straightforward, the point of application on the hull of the vessel, in light of footnote 4 of reference (a), is unclear and has led to considerable confusion and inconsistent application.

b. Reference (b) outlined a simple procedure to provide an accurate location of the transverse extent of damage at any point along the vessel's length based on the information in footnote 3 of reference (a). The procedure is consistent with the intent of footnote 3 and eliminates any confusion regarding the point of application on the vessel's hull.

c. SOLAS regulations have no such provisions for averaging the extent of damage. Accordingly, this allowance in footnote 3 of reference (a) can not be applied to vessels subject to SOLAS (without a SOLAS exemption).

d. Note that regulation 171.010(a), as currently cited in footnote 3 of reference (a), is in error and should read 171.010(b).

3. ACTION: The guidance in enclosure (1) is based on reference (b), and is to be used to calculate the transverse extent of damage for vessels not subject to SOLAS that operate only on inland waters or ferry vessels as indicated in footnote 3 of reference (a).

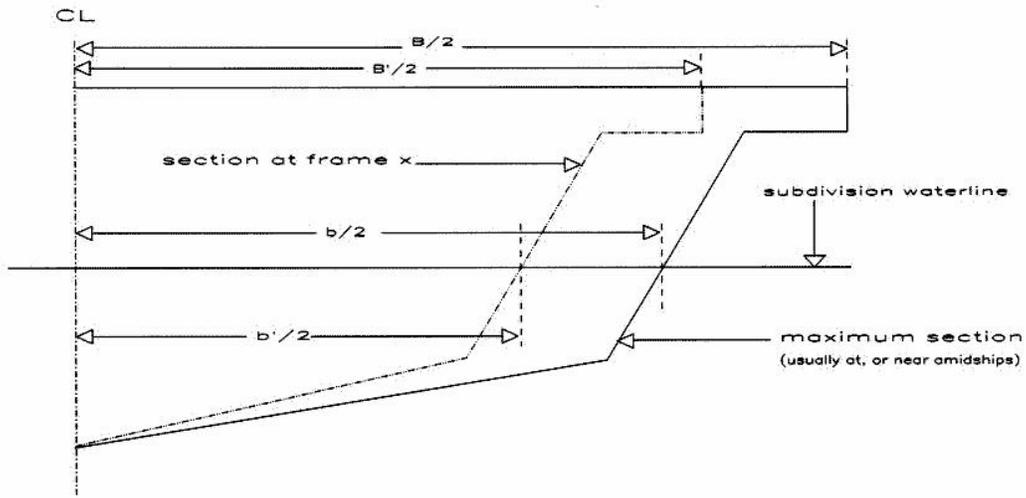
A handwritten signature in black ink, appearing to read 'T. H. Walsh', with a stylized, cursive script.

T. H. WALSH

Encl: (1) Procedure For Averaging the Location of the Transverse Damage Penetration  
(B/5) For Vessels Not Subject to SOLAS which Operate Only on Inland Waters  
or Ferry Vessels

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PROCEDURE FOR AVERAGING THE LOCATION OF THE TRANSVERSE  
DAMAGE PENETRATION (B/5) FOR VESSELS NOT SUBJECT TO SOLAS  
WHICH OPERATE ONLY ON INLAND WATERS OR FERRY VESSELS



- B = Maximum molded beam on the bulkhead deck
- b = Maximum beam at the subdivision load line
- B' = Molded beam on the bulkhead deck for a specific point on the vessel's length (i.e. a specific frame)
- b' = Molded beam at the subdivision load line for a specific frame

For any point on the vessel's length:  
 $B'/2 - B/5 = D$      $b'/2 - b/5 = d$

Therefore:  
 $D/2 + d/2 =$  Location from the vessel's centerline (CL) of assumed transverse extent of damage