



UK MARINE TRAINING CENTRE (UMTC)

SAI POOJA BUILDING, SHOP NO. 4, PLOT NO. 36, SECTOR - 34. KAMOTHE, NAVI
MUMBAI - 410 209 MAHARASHTRA, INDIA.

EMAIL : umtcindia1234@gmail.com | PH : +91 9673855053, +91 7021406134

March 2017

Ship Construction Drawing – DRG - 003

Section B

Question 7.

On inspection in the dry dock, two sections of damage were found on the ship's hull, which has been identified on the shell expansion plan.

The first was an indentation approximately 75mm deep extending approximately 700mm long x 700mm wide. Identified on the drawing as 'A'.

The second was an indentation approximately 200mm deep extending approximately 1400mm long x 1400mm wide. Identified on the drawing as 'B'.

- (a) Using drawing references identify the location of both areas of damage.
- (b) State, with reasons, the sections requiring repair, describing all-steel involved in the repair, including any specifications, along with any complications.

Answer :

(a) Using drawing references, identify the location of both areas of damage. (4 Marks)

- For **Damage section A**
 - Damage Area lies between Fr.118 to Fr. 120 & Longitudinals L15 to L17
- For **Damage section B**
 - Damage Area lies between Fr. 117 to Fr. 118 & Logitudinals L10 to L11

**Reference Drawing shown below.

Prepared By: Arun Trimukhe

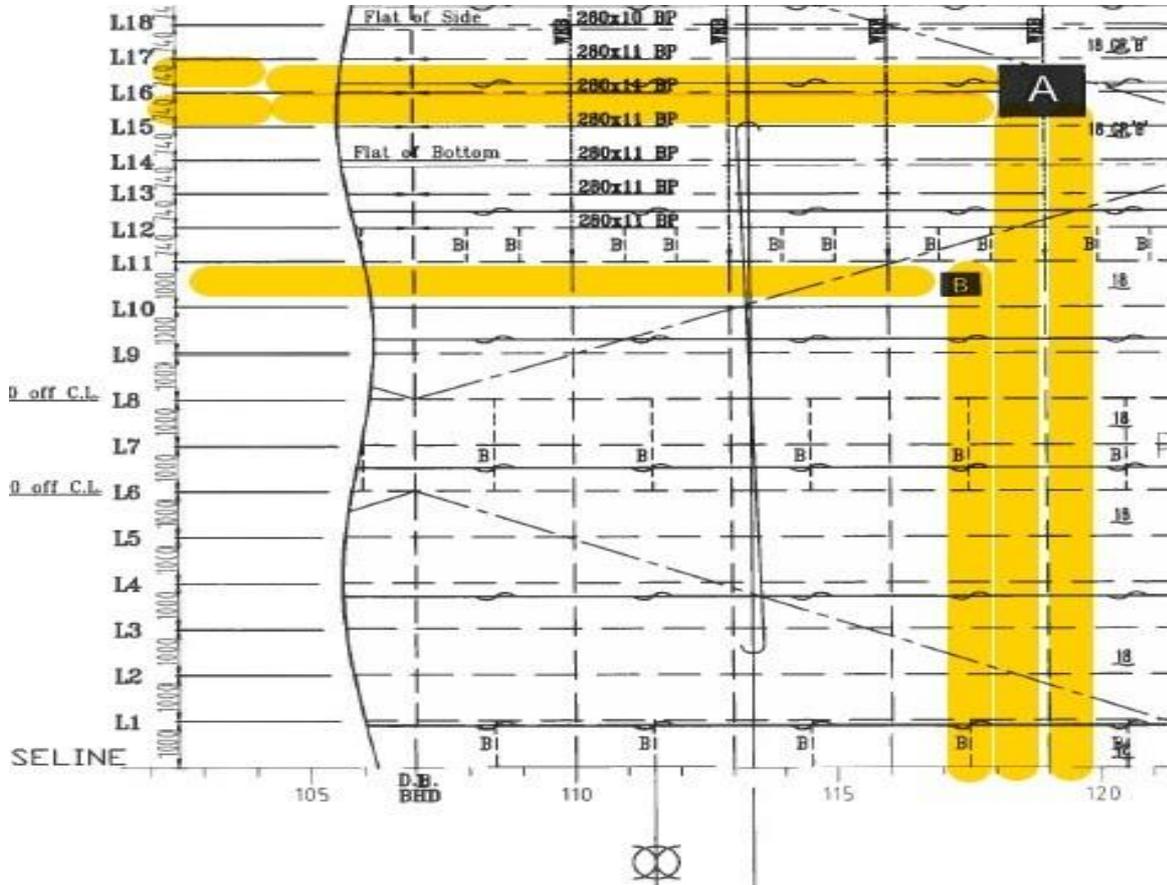


UK MARINE TRAINING CENTER (UMTC)

UK MARINE TRAINING CENTRE (UMTC)

SAI POOJA BUILDING, SHOP NO. 4, PLOT NO. 36, SECTOR - 34. KAMOTHE, NAVI
MUMBAI - 410 209 MAHARASHTRA, INDIA.

EMAIL : umtcindia1234@gmail.com | PH : +91 9673855053, +91 7021406134



Prepared By: Arun Trimukhe



UK MARINE TRAINING CENTRE (UMTC)

SAI POOJA BUILDING, SHOP NO. 4, PLOT NO. 36, SECTOR - 34. KAMOTHE, NAVI
MUMBAI - 410 209 MAHARASHTRA, INDIA.

EMAIL : umtcindia1234@gmail.com | PH : +91 9673855053, +91 7021406134

B) State, with reasons,

1. The sections requiring repair
2. Describing all-steel involved in the repair, including any specifications,
3. Along with any complications.

For Damage A

1. The sections requiring repair

I) The first indentation is approximately 75mm deep extending approximately 700mm long x 700mm wide. Using drawing reference, **We notice that Damage section A lies exactly on the weld seam Hence, we conclude that, two plate sections are involved in the damage and there is a need for repair.**

II) **Location:** First plate section lies **between Fr. 113 to Fr. 128 & Longitudinal L12 to L17**

The second plate section lies **between Fr. 113 to Fr. 128 & Longitudinal L16 to L19**

III) **Dimension:** Approximate dimensions of both plate section are 12000 x 2800 x 18(Thickness) mm & 12000 x 1695 x 18 (Thickness) mm

2. Describing all-steel involved in the repair, including any specifications

I) Two plate sections involved in repair, with a **specification of 18mm Grade B.**

II) Using drawing reference, **we identity there are 4 Nos. Web Frames involved in repairs, Located at Fr. No. 116, 119, 122 & 125. With Approx length of 4495mm.**

III) Also, **Longitudinals Nos. 6 involved in the repair. Ranging from L13, 14,15,16,17 to L18. With specification BP(Bulb Plate) as 260 x 10 mm & 280 x 11 mm.**

IV) Approx Length of **Longitudinals BP involved in repair, ranging from Fr. No. 113 to Fr. 128. With Approx length of 12000mm.**

V) As the indentation is **75 mm deep**, the entire plate section is replaced, along with the damaged steel structure attached/welded to the plate section near the indented area.

Prepared By: Arun Trimukhe



UK MARINE TRAINING CENTRE (UMTC)

SAI POOJA BUILDING, SHOP NO. 4, PLOT NO. 36, SECTOR - 34. KAMOTHE, NAVI
MUMBAI - 410 209 MAHARASHTRA, INDIA.

EMAIL : umtcindia1234@gmail.com | PH : +91 9673855053, +91 7021406134

3. Complication involved in the Repair.

I) **Damage portion lies between flat of side and flat of the bottom**, bilge which is bilge radius region, hence curved plate is damaged. During the repair, the plate is **curved (prefabricated)** to maintain the ship's hull form and align to maintain the ship's curve.

II) As **damage is located on the ship's side block arrangement** is to be relocated accordingly to repair work.

III) **Damage lies on D.B. tank No.3**, Hence the tank is to be empty and gas-free before inspection and during work, as, internal Welding is to be carried out.

IV) **Damage (Indentation) exactly lies on the welding seam**, hence two plates are to be welded together to maintain hull form while Aligning plates is the complication.

V) **Welding in the bilge area is complicated** (Internal and external) as additional lighting and staging are to be provided while maintaining all drydocks safety standards.

Damage B (Continued on next page)