

HMAS MANOORA TPA Frame

Structural Design Verification

Date: February 2006

Client: Australian Navy

Project Summary: Assess the suitability of a transport skid as constructed previously for the purpose of supporting a Tank and Pump Assembly (TPA) unit on HMAS MANOORA

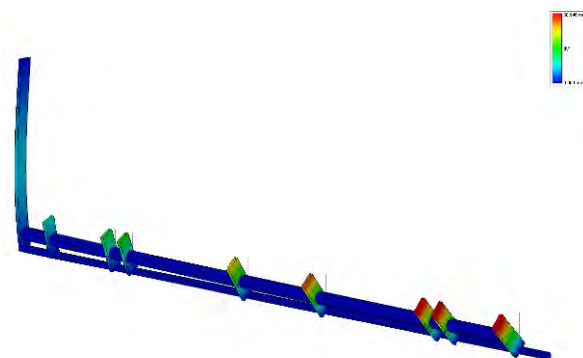
HMAS MANOORA was required to carry unleaded petrol in a TPA onboard to supply small RHIBs for security service during the 2006 Commonwealth Games in Melbourne. As unleaded petrol (ULP) is not normally carried on board a frame was used to support the tank on the deck whilst allowing the tank to be jettisoned overboard using a quick release mechanism from the Bridge.

An existing aluminium support frame was analysed by SOFRACO and modifications were designed to withstand the design loads whilst at sea. This included some computer modeling of the frame using Multiframe software.

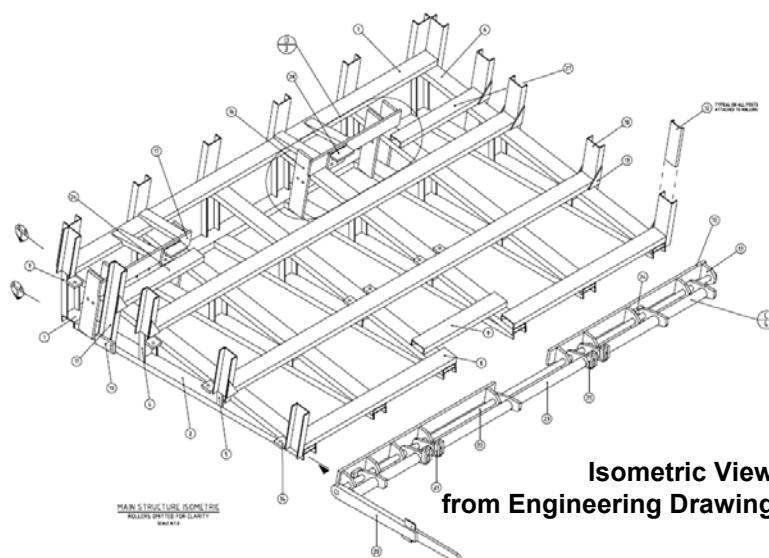
As the job had a tight deadline the design verification was being carried out in parallel with the design and construction by Babard Engineering. The existing frame did not have an integrated quick release mechanism so the project also involved assessing the design for this aspect as it was being developed.

Using this engineering verification process for this project enabled the design to be fully checked and the risk of carrying ULP on board the ship was fully known and minimised.

In addition to the engineering work a full set of drawings for the frame and release mechanism were produced by SOFRACO.



Multiframe Model of Release Shaft



**Isometric View
from Engineering Drawing**



TPA Frame on HMAS MANOORA