



Australian Government
Department of Defence

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Smith/2012/MA12-002933
Initiated
Ref: CEODMO/OUT/2012/ ~~178~~
CN/OUT/2012/601

MINISTERIAL SUBMISSION

Priority

Date Dept Approved:	Date Rec in Office:	Date Due:
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For Action: Minister for Defence

Through: CDF

For Info: Mr Clare


Copies to: Secretary, CDF, FASMECC

Subject: Repair of HMAS Choules

Purpose:

To inform you of plans to repair HMAS *Choules*, which will take approximately six months.

Key Points:

1. As you are aware, on 14 Jun 2012, HMAS *Choules* suffered a failure in one of the transformers on her starboard propulsion train. This reduced the ship's maximum speed to 6 knots and forced the ship to return to Sydney.
2. With the support of the manufacturer Siemens and DSTO, Navy and DMO have examined options to repair the failed transformer in *Choules*. The primary repair method will be to replace the transformer unit with a new item. A second method of rebuilding of the damaged unit is uncertain, but will continue to be examined. Images of the transformer unit are attached in background information.
3.  Given the design has two units operating in parallel to feed one propulsion motor, DMO is ordering two units in case the other unit in the pair needs replacing or as a spare. Removal and replacement of the unit requires an access panel to be cut in the ship, not an unusual occurrence for major repairs. Production work to install, trial and certify the new unit is estimated to be eight weeks. In total, the repair will take about six months, making the ship serviceable again in December 2012.
4. There is a chance the current unit can be rebuilt, but the likelihood of being able to do this successfully is about 50:50. Further tests are being done on the damaged unit and it will be a few weeks before the next decision point. There would be several decision points in a repair process, for example after removal and dismantling it may be determined the unit is unrepairable. This option has the potential to save about four weeks.
5. In terms of the engineering root cause analysis underway, there is no finding yet about the cause of the failure, either in terms of crew actions, manufacturing defect or other cause. From their bore scope inspection of the internal windings, DSTO's observations were the damage was consistent with an inter-winding insulation failure.
6. In theory, *Choules* could be redesigned to provide power to both propulsion motors from the serviceable, port side set of transformers. Doing this would take considerable time to design, manufacture, install, test and certify a power cross connect system and associated modifications to the ship's integrated platform management system. The task would involve many organisations including the original Design Authority IMTECH, various suppliers and Lloyds Register (the class certification authority). This would be a lengthy process, propulsion power would still be 50%,

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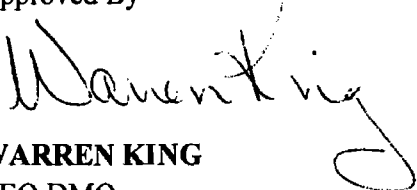
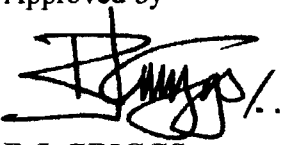
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and is not considered practical.

7. HMAS *Tobruk* is currently at sea conducting contractor sea trials. I (CN) will advise you when *Tobruk* has concluded these trials and is deemed operationally available for HADR activities. I expect this to be achieved in the next 48 hours.

Recommendation:

That you note that repair of HMAS *Choules* will take approximately six months.

<p>Approved By</p>  <p>WARREN KING CEO DMO</p> <p>22 June 2012</p>	<p>Approved by</p>  <p>R.J. GRIGGS VADM, RAN CN</p> <p>21 June 2012</p>
<p>Contact Officer: Andrew Cawley</p>	<p>Phone: [REDACTED]</p>
<p>Primary Addressee</p> <p style="text-align: right;">Stephen Smith / /</p>	
<p>Information Addressee</p> <p style="text-align: center;">Noted / Please Discuss</p> <p style="text-align: right;">Jason Clare / /</p>	

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Resources:

8. Repair costs will be funded from within Navy's sustainment budget.

Consultation:

9. Commander Australian Fleet (RADM T. Barrett), Program Manager ADAS (Mr P. Fitzpatrick) and Head Propulsion and Energy Systems DSTO (Dr M Newman).

Conflict of Interest:

10. N/A.

Attachments:

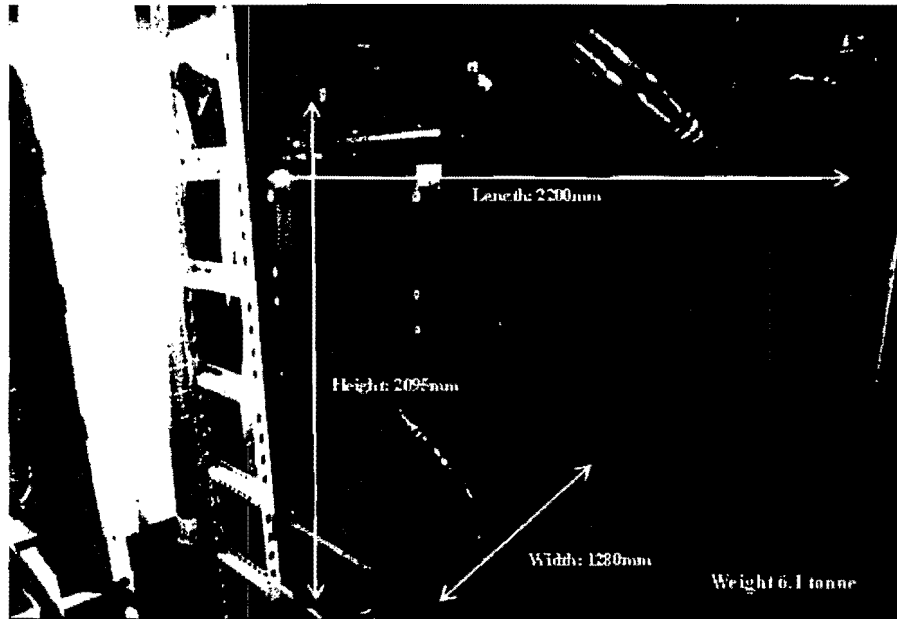
- A. Background Information – HMAS *Choules* Main Propulsion Transformers

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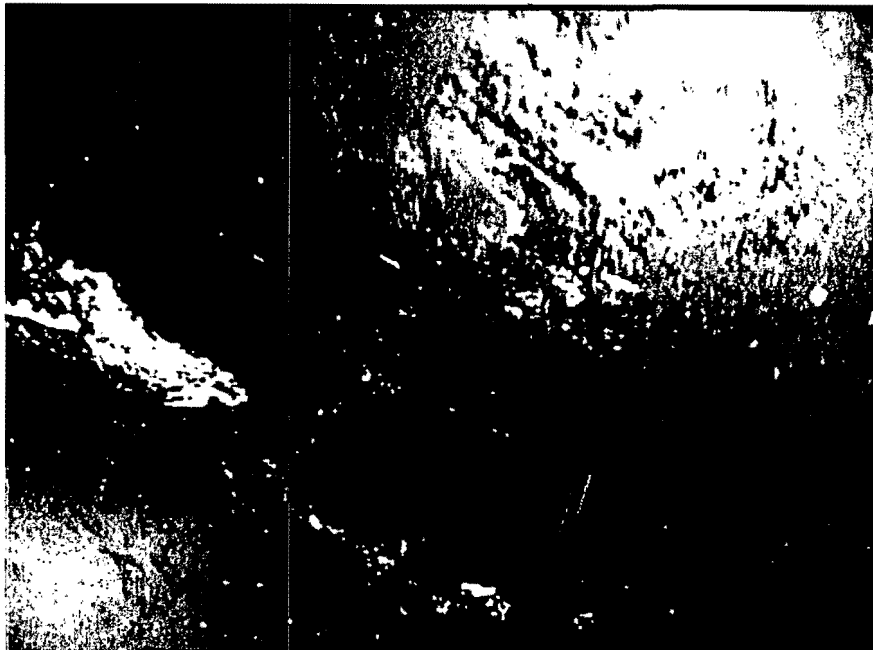
Attachment A

BACKGROUND INFORMATION—HMAS CHOULES MAIN PROPULSION TRANSFORMERS

The failed transformer



Internal Damage (Bore scope images)



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Attachment A

