

Tele: 248306

सम्मिश्र जांच दल/ Composite Trials Team
द्वारा नैवी कार्यालय/ C/o Navy Office
मुख्यालय/ Headquarter
अन्डमान एवं निकोबार कमान/
Andaman & Nicobar Command
पोर्ट ब्लेयर/ Port Blair - 744 102

CTT/300/03/13/TECH

24 Feb 23

The Commander-in-Chief
{for CTO (ML) / CTO(Marine)}
Headquarters
Andaman & Nicobar Command
Port Blair - 744 102

ALTERNATOR BEARING ANALYSIS
OF DA NO 2 & 3 /N LCU L-55

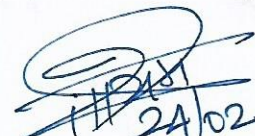
1. Refer to the following:-
 - (a) HQANC Fax ANC/42442/DR/9 dated 06 Feb 23.
 - (b) CTT (Pbr) letter CTT/300/03/12/TECH dated 30 Jan 23.
 - (c) GRSE fax PP&C/2096/03/28/G-752 dated 22 Mar 21(Not address to all).
 - (d) ETMU (Kol) Fax ETMU/318/2096/P dated 09 Mar 21(Not address to all).
2. **Background:-** During end refit trial of DA 2, the DE & NDE bearings on alternator were observed in yellow zone and the same was reported vide CTT letter at para 1(b). Further towards liquidation of DL on DA 3 bearing in yellow zone, the same was replaced by NSRY as part of refit package. Post replacement of bearing on DA 3 it was observed to be in yellow zone as well as bearing temperature increase upto 90 deg C at 50% load.
3. During SSC I on 18 Feb 23 it was decided to replace bearings on DA 2 & DA 3 and re-offer for trials. However, post replacement of bearings for the second time the issue pertaining to high bearing temperature and SPM in yellow zone continued to exist.
4. CTT reps embarked the ship towards analysing cause for high bearing temperature and condition persisting in Yellow zone. Towards the same attenuation, SPM and bearing enveloping of DA No. 2 (250 kW) and No 3 (350 kW) were carried out and detailed report is placed at **Enclosure**.
5. Post referring to the ships log book and D448 documents, it was evident that the ship's alternator bearing were being exploited in yellow zone since commissioning. ETMU (Kol) vide letter at para 1(d) had directed the ship to exploit the DA's with bearing in yellow zone and any degradation of bearing parameters be intimate.

6. Towards establishing cause for raise in bearing temperature the greasing points of DA3 were inspected and it was observed that over greasing at Alternator DE & NDE of DA No 2 & 3 has been carried out. The grease drain point was removed and the excess grease was removed, subsequently DA no.3 was started and run at no load for duration of 10 min for proper greasing and draining of residual / excess grease. The DA was then taken on load up to 60% using load bank and run for duration of 30 min. It was observed that the bearing temperatures settled between 67-70°C from initial value of 90°C deg.

7. Similar exercise was carried out on DA no 2 and was exploited using ship's load of 140KW (approx. 60%) for duration of 30 min. Bearing temperatures reduced from 84 °C to about 64-68 °C and settled in that range.

8. **Recommendations:-**

- (a) DA no 2 and 3 cleared for exploitation with bearing in yellow zone i.a.w ETMU (Kol) recommendation.
- (b) HQANC/SO (L) be directed to carry out following:-
 - (i) Examine similar trails regarding Alternator bearing in yellow zone on other LCU MK IV class ships and take up issues with GRSE as prolonged usage may lead to ceasing of bearing leading to damage to alternator rotor & other accessories.
 - (ii) Issue advisory / training on maintenance of equipment and usage of lubricants.


(एस सी विलियम/ S C William)
कमांडर/ Commander
प्रभारी अधिकारी/ Officer-in-Charge

Encl: - As above

Copy to: -

The Commodore Superintendent
{for DGM(Refit)}
Naval Ship Repair Yard
c/o Navy Office
Port Blair – 744 102

The Naval Component Commander
{for SSO(Tech)}
c/o Navy Office
Port Blair – 744 102

The Commanding Officer
/IN LCU L-55
C/o Navy Office
Port Blair- 744 102

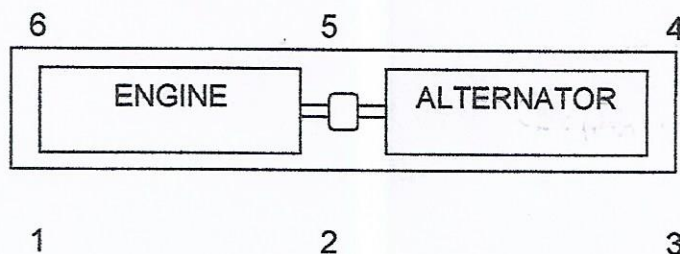
1. **DA No 2 (Vibration and SPM Readings).**

Ser	Description	150 kW (60% Load)				Remarks
		H	V	A	SPM	
(a)	Engine free end	6.8	2.8	3.9	SPM	
(b)	Engine drive end	6.2	5.2	3.3		
(c)	Alternator drive end	4.2	5.1	4.3	29/18	Yellow
(d)	Alternator free end	5.7	4.4	4.1	20/10	

2. **DA No 3 (Vibration and SPM Readings).**

Ser	Description	210 kW (60% Load)				Remarks
		H	V	A	SPM	
(a)	Engine free end	7.3	5.2	8.6	SPM	
(b)	Engine drive end	12.1	9.1	6.8		
(c)	Alternator drive end	11.3	8.1	3.6	25/14	Yellow
(d)	Alternator free end	4.5	6.8	4.1	18/10	

3. **Attenuation Checks.**



Positions	DA NO 2 at 60 % Load (150KW)					
	1	2	3	4	5	6
Top	7.9	5.3	7.2	2.9	4.8	8.0
Bottom	1.3	1.3	0.8	0.8	1.1	1.8
Atten. (70-90 %)	83	75	88	72	77	77
Remarks	SAT					

