दूरभाष: २३०६/ Tele: 2306

सम्मिश्र जांच दल/ Composite Trials Team
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मुख्यालय/ Headquarter
अन्डमान एवं निकोबार कमान/
Andaman & Nicobar Command
पोर्ट ब्लेयर ७४४ १०२/ Port Blair 744 102

CTT/300/03/11/TECH

05 सितम्बर २३/ Sep 23

प्रधान सेनापति/ The Commander-in-Chief
{(कृते कमान तकनीकी अधिकारी (समुद्री)/ for CTO(Marine)}
मुख्यालय/ Headquarters
अन्डमान एवं निकोबार कमान/ Andaman and Nicobar Command
द्वारा नौसेना कार्यालय/ c/o Navy Office
पोर्ट ब्लेयर ७४४ १०२/ Port Blair 744 102

DEHMI OF MISSION DA (80 KW) - *IN* LCU L-53

1. Refer to *IN* LCU L-53 letter 300/3/6 dated 25 Jul 23.

2. **Background**. DEHMI including performance, vibration and attenuation checks of Mission DA of *IN* LCU L-53 was undertaken on 01 Aug 23. DA was loaded upto 100% (80 KW) on load bank and sustained for a duration of two hours.

3. **Performance Parameters**. A detailed report w.r.t engineering and performance trial is placed at **Enclosure I**. The salient parameters are as follows: -

Ser	Parameter	Range	Actual Values	Remarks
(a)	Lub Oil Pressure	1.2 - 5.0	3.9	Sat
(b)	Lub Oil Temperature	80 - 116	98	
(c)	Fresh Water Temperature	75 - 94	88	
(d)	Exhaust Temperature	575°C	540°C	

4. **Vibration Analysis**. Vibration trials of Mission DA was undertaken at 60% and 100% of rated load. Vibration were found to be within permissible limits.

5. **Observations**. Observations as per DEHMI performa placed at **Enclosure II**. Salient observations mentioned below:-

(a) One mount deterioted.

(b) Improper application of nicol laquer on all mounts.

(c) Lub oil leakage observed from LO filling line.

(d) Lub oil and Fresh water coolers last cleaned in Apr 18.

6. **Recommendations**. Following recommended:-

(a) Liquidation of defects/ observations mentioned at para 5.

(b) DA be cleared for exploitation upto 100% of rated load for independent operation.

05/09

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

Encl : - As above

Copy to : -

नौसेना खण्ड सेनापति/ The Naval Component Commander
{कृते वरिष्ठ कर्मचारी अधिकारी (यांत्रिकी)/ for SSO(Tech)}
मुख्यालय नौसेना खण्ड/ Headquarters Naval Component
द्वारा नौसेना कार्यालय/ c/o Navy Office
पोर्ट ब्लेयर ७४४१०२/ Port Blair 744 102

कमान अधिकारी/ The Commanding Officer
आई एन एल सी यू एल-५३/ *IN* LCU L-53
द्वारा नौसेना कार्यालय/ c/o Navy Office
पोर्ट ब्लेयर ७४४ १०२/ Port Blair 744 102

Enclosure I to CTT (PBR) letter
CTT/300/03/11 dated 05 Aug 23

DIESEL ENGINE HEALTH MONITORING INSPECTION (DEHMI)
MISSION DA (80 kW) - *IN* LCU L 53

1. Trial Inspector : (a) Pankaj S Rawat, ERA-III
   (b) Patro Ashok, ERA-IV

2. Date : 01 Aug 23

3. Equipment used for trials : (a) SPM T-30
   (b) Temperature Gun
   (c) Camera

4. Details of inspection are as follows:-

(a) **Safety Device Checks**.

Ser.	Description	Unit	Design Value	Mission DA
(i)	Low LO Pr Alarm	Kg/cm^2	2.0	1.9
(ii)	Low LO Pr Trip	Kg/cm^2	1.0	0.9
(iii)	High FW temp Alarm	°C	94	91
(iv)	High FW temp Trip	°C	98	96
(v)	High LO temp Alarm	°C	120	119
(vi)	High LO temp Trip	°C	130	128
(vii)	Over speed Trip	RPM	1650	1650
(viii)	Crash stop Local	-	Ops/ Non-ops	Ops
(ix)	Crash stop Remote	-	Ops/ Non-ops	Ops
(x)	Exhaust tempreture Alarm	°C	575	574

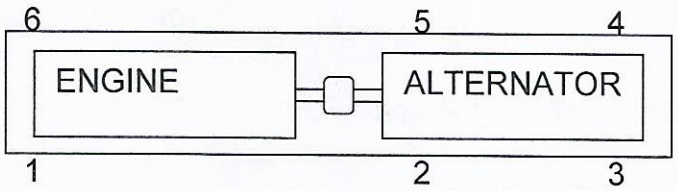
(b) **Performance Parameters at 60% and 100% Load**.

MISSION DA					
Ser.	Description	Unit	Design values	Parameters recorded at (60% and 100% rated load)	
				48 kW	80 kW
(i)	Max sustained Load	KW	80	48	80
(ii)	RPM	RPM	1500	1500	1500
(iii)	Lub oil Pressure	Kg/cm^2	2.5-6.0	5.0	4.8
(iv)	Sea water Pressure	Kg/cm^2	NA	NA	NA
(v)	Lub oil Temperature	°C	40 to 119	79	86
(vi)	Fresh water Temperature	°C	45 to 92	68	78
(vii)	Exhaust Temperature	°C	575	211	320

(c) **Vibration Trials**. Vibration trials of Mission DA was undertaken at load 48 kW (60% of rated load) and 80 kW (100% of rated load). Overall vibration readings of DA at monitoring points found within permissible limit and is SAT. The details of trials are as follows:-

Ser.	Description	80 KW MISSION DA						Remarks (Limit 16 mm/sec)
		At 60 % load (48 KW)			At 100% load (80 KW)			
		H	V	A	H	V	A	
(i)	Engine FE	3.9	6.8	8.2	4.5	7.1	8.8	SAT
(ii)	Engine DE	8.3	9.5	5.3	9.5	10.2	6.7	
(iii)	Alternator DE	6.8	5.6	4.5	7.1	6.6	5.9	
(iv)	Alternator FE	7.8	7.1	5.7	8.2	7.8	6.3	

(d) **Attenuation checks**.



Position	MISSION DA 48 kW (60 % load)					
	1	2	3	4	5	6
Top	4.7	6.5	6.9	5.9	6.2	4.9
Bottom	1.4	1.5	1.4	1.0	1.1	1.3
Atten.	71	76	79	83	83	73
Remarks	SAT					

Position	80 kW (100 % load)					
	1	2	3	4	5	6
Top	4.7	4.3	5.2	3.9	4.8	4.9
Bottom	0.6	0.5	0.9	0.6	0.7	0.6
Atten.	87	88	82	84	85	87
Remarks	SAT					

Note: Attenuation lesser than 70% indicates overloaded/over tightened mounts. All SV mounts to be loosened and torque tightened as per OEM specified values.

Enclosure II to CTT (PBR) letter
CTT/300/03/11 dated 05 Aug 23

DIESEL ENGINE HEALTH MONITORING INSPECTION (DEHMI)
MISSION DA (80 kW) - *IN* LCU L 53

1. **Status of Documents and Engine Data**.

Ser	Check	Mission DA	Remarks
(a)	Diesel Service Log Book	NA	
(b)	EMAPS/ Kalamazoo	✓	
(c)	Running Log Book	✓	
(d)	Engine Serial No.	F69599-1400002	
(e)	RH Since Installation	152.10	

2. **External State of Engine**.

Ser	Check	Mission DA	Remarks
(a)	Condition of durites/ compensators	SAT	
(b)	Condition of SV mounts & application of Necol Lacquer	SAT	Improper application of Necol Lacquer
(c)	System Pipelines well supported and free of leaks	SAT	
(d)	Filter Drains clear	SAT	
(e)	Status of bilge platform in the immediate of vicinity of engine	SAT	

3. **Status of Air Intake**.

Ser	Check	Mission DA	Remarks
(a)	Cleanliness of air intake filter	SAT	
(b)	Perforated sheet for corrosion and intactness of securing (where applicable)	SAT	
(c)	Cleanliness of air intake trunking	SAT	
(d)	Intake drain clear	SAT	
(e)	Air Intake restriction measuring instrument	Ops	
(f)	Status of Vacuum Indicators	NA	
(g)	Status of durites/ compensators	SAT	

4. **Status of Exhaust System**.

Ser	Check	Mission DA	Remarks
(a)	Securing of exhaust trunking supports and load hangers	SAT	
(b)	Intactness of hot tagging	SAT	
(c)	Status of corrosion on exhaust funnel/flap/ball valve	SAT	
(d)	Condition of Exhaust drain pipeline	NA	
(e)	Intactness of exhaust trunking	SAT	
(f)	Exhaust back pressure measuring point accessible	SAT	

5. **Starting Air System**.

Ser	Check	Mission DA	Remarks
(a)	Condition of durites/ braided hoses	SAT	
(b)	Status of air starting valve	SAT	
(c)	Working of auto/ manual drain valve of air compressor	SAT	

6. **Fuel System**.

Ser	Check	Mission DA	Remarks
(a)	Condition of fuel filters	SAT	
(b)	Status of fuel centrifuge	SAT	
(c)	Fuel leakages	SAT	
(d)	Condition of wire-braided hoses	SAT	

7. **Lub Oil System**.

Ser	Check	Mission DA	Remarks
(a)	Outcome of last lub oil analysis	-	
	Basic	SAT	
	Advanced	-	Report not held with SS
(b)	Status of lub oil Centrifuge	OPS	
(c)	Oil leakages	SAT	
(d)	Date of last cooler cleaning	Apr 2018	
(e)	Status of durites/ compensators	SAT	
(f)	Lub Oil Test Kit status	UNSAT	Landed for Callibration

8. **Coolant/ Fresh Water System**.

Ser	Check	Mission DA	Remarks
(a)	Outcome of last coolant analysis	SAT	
(b)	Condition of Gauge glass of expansion tank	SAT	
(c)	Status of Coolant system	SAT	
(d)	Date of last cooler cleaning	Apr 2018	Initial
(e)	Coolant Test Kit status	SAT	

9. **Sea Water System**.

Ser	Check	Mission DA	Remarks
(a)	Status of sea water system	SAT	
(b)	Condition of durites/ compensator	SAT	
(c)	Status of suction Strainer	SAT	
(d)	Status of Zinc plugs	SAT	

10. **Tappet Clearance Check**.

Ser	Check	Mission DA	Remarks
(a)	Intake Valve (limit :0.2)	0.40 mm	
(b)	Exhaust Valve (limit :0.5)	0.45 mm	

11. **Instrumentation & Control Check**.

Ser	Check	Mission DA	Remarks
(a)	Insulation of control system panels	SAT	
(b)	Status of calibration of all instrumentation	SAT	
(c)	Status of thermometer/ thermocouples/ pressure sensors	SAT	
(d)	Thermometer- Total Non-Ops	NA	
(e)	Thermocouples - Total Non-ops	NA	
(f)	Pressure gauge - Total Non-ops	NA	
(g)	Number of faulty Alarms/ Relays	NA	
(h)	Blowby measurement tool/ provision	NA	

12. **Ventilation System**.

Ser	Check	Mission DA	Remarks
(a)	Status of compartment Ventilation	SAT	
(b)	Average compartment Temperature at four corners/ Ambinent air temperature	31^{0}C	
(c)	Status of compartment/ bilge coolers	NA	
(d)	Date of last cooler cleaning		
	(i) Compartment cooler	NA	
	(ii) Bilge cooler	NA	

13. **Fire Fighting System**.

Check	Mission DA	Remarks
Status of machinery compartment firefighting system	OPS	

14. **Performance Trials Details**.

Ser	Check	Mission DA	Remarks
(a)	Max load achieved during CST	80 kW	
(b)	Date of last SDC	07 Jul 23	