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Naval Trials and Acceptance Authority
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NATAA/300/ ASG

As per E-Sign

Director/ OsI/C – ETMA, MTU(Vzg), MTU(Mbi), HITU(Vzg), HITU(Mbi), ETMU(Vzg), ETT(Koc), ETMU(Kol), CTT(Pbr), HITU(Koc), HITU(Pbr),

## TRIALS PROTOCOL FOR SHAFT GROUNDING SYSTEMS

1. Refer to IHQ MoD (N)/ ACOM (D&R) letter EG/ Policy/ TSC/ 02/ 22 dated 06 Jun 22 regarding Policy on Maintenance and Monitoring of Shaft Grounding System.

2. A detailed policy with respect to procurement, maintenance and monitoring of Shaft Grounding Systems (ASG/PSG) has been promulgated by IHQ MoD (N) vide letter ibid. The policy letter elucidates roles and responsibilities of various departments towards upkeep and maintenance of Shaft Grounding System on-board naval platforms. Further, coordinated and integrated trials by MTUs/ CTT, ETMA/ETMUs and HITUs are envisaged for holistic performance assessment of Shaft Grounding Systems during Pre/End of Refit trials and Commissioning trials.

3. Approved copy of the comprehensive Trials Protocol for Shaft Grounding Systems (ASG/PSG) is enclosed for necessary action by all concerned. MTUs/ CTT are requested to undertake trials of Shaft Grounding Systems as Lead Trial Agency and seek assistance of ETMA/ ETMUs/ HITUs as required. The Trial Reports are to be shared with respective HITUs for scrutiny and records.

**Electronically Signed by:**
**CDR RK PILLAI, 42208A**
**JDI**

**On 07-09-2022 16:41:25**
**Using login ID authentication through FMMS**

**Enclosure**: - 1 - Trials Protocol of Passive Shaft Grounding System
2 - Trials Protocol of Active Shaft Grounding System

**Copy to**: -

The Flag Officer Commanding-in-Chief
{for CEO/CLO/CCONO}
Headquarters, Western Naval Command
Mumbai 400001

The Commander-in-Chief
{for CTO(Marine)}
Headquarters, A&N Command
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The Flag Officer Commanding-in-Chief
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The Flag Officer Commanding-in-Chief
{for CEO/ CLO/ CCONO}
Headquarters, Southern Naval Command
Kochi 682004

**Internal**: - SO/ ACOM (D&R) *DG* NATAA

**Enclosure 1 to NATAA fax**
**NATAA/300/ASG dated 07 Sep 22**

# TRIALS PROTOCOL - PASSIVE SHAFT GROUNDING SYSTEM

*Note: The Shaft Ground System checks shall be undertaken in two phases namely Harbour (Installation Checks) and Sea (Functional Checks)*

| | |
|---|---|
| ***MAKE OF SHAFT GROUNDING SYSTEM/ OEM*** | |
| ***YEAR OF INSTALLATION*** | |

1. **INSTALLATION CHECKS**.

| Sl.No | Component | Description/ Checks | TRIAL BY | SAT/ UNSAT | Observations/ Remarks |
|---|---|---|---|---|---|
| (a) | Brushes | Check for wearing and corrosion. | MTU/ CTT | | |
| | | Contact with shaft (check any clearance using a feeler gauge). | | | |
| | | Check size of carbon brushes as per TDOI. | | | |
| (b) | Ring Assembly | Check for corrosion or visual damage. | MTU/ CTT | | |
| | | Check passive ring is properly shorted with hull. | | | |
| | | Check for coating on the slip ring assembly as per technical manual (the coating material will depend on design and make). | | | |
| (c) | Voltmeter / Multi-meter | Check calibration certificate. | MTU/ CTT | | |
| | | Check for any fault indication. | SS | | |

2. **FUNCTIONAL CHECKS**. (By MTUs/CTT)

| **Sea Sortie** | **Date** | **Time** | **Port Shaft** | **Stbd Shaft** |
|---|---|---|---|---|
| | | | **Voltage Reading** | **Voltage Reading** |
| Sortie 1 | | | | |
| | | | | |
| | | | | |
| Sortie 2 | | | | |
| | | | | |
| | | | | |

*Notes:*

- *The functional checks of the system is to be undertaken by MTUs/ CTT (Pbr) during sea trials and a minimum of five readings are to be recorded at 30 – 60 mins intervals during two consecutive sailings and the recordings are to be corroborated with the design / previous recordings prior clearing the system.*

**Enclosure 2 to NATAA fax**
**NATAA/300/ASG dated 07 Sep 22**

## TRIALS PROTOCOL - ACTIVE SHAFT GROUNDING SYSTEM

*Note: The Shaft Ground System checks shall be undertaken in two phases namely Harbour (Installation Checks) and Sea (Functional Checks)*

| | |
|---|---|
| ***MAKE OF SHAFT GROUNDING SYSTEM/ OEM*** | |
| ***YEAR OF INSTALLATION*** | |

1. **INSTALLATION CHECKS**.

| Sl.No | Component | Description / Checks | TRIAL BY | SAT / UNSAT | Observations / Remarks |
|---|---|---|---|---|---|
| (a) | Brushes | Check for wearing and corrosion. | MTU/ CTT | | |
| | | Contact with shaft (check any clearance using a feeler gauge). | | | |
| | | Check size of carbon brushes as per TDOI. | | | |
| (b) | Ring Assembly | Check for corrosion or visual damage. | MTU/ CTT | | |
| | | Check sensor ring is not shorted with hull. | | | |
| | | Check passive ring is properly shorted with hull. | | | |
| | | Check power ring connectivity to power drive | | | |
| (c) | Power Unit | Check insulation of all cables. | SS<br>ETMA/ETMU | | |
| | | Check power supply (input output wrt technical manual). | | | |
| | | Check calibration of indication panel as per technical manual. | | | |
| | | Check correct cable polarity of power ring cable and power ground. | | | |

| | | | | | |
|---|---|---|---|---|---|
| (d) | Multi-meter | Check calibration of fitted multi-meter. | SS/MTU/ CTT | | |
| (e) | Local & Remote Indications | Check correctness of indication. | SS/MTU/ CTT | | |
| | | Check for fault indications. | | | |

2. **FUNCTIONAL CHECKS**. (By MTUs/CTT)

| **Sea Sortie** | **Date** | **Time** | **Port Shaft** | | | | **Stbd Shaft** | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | **DC Shaft Voltage** | **AC Shaft Voltage** | **Output DC voltage** | **Output current** | **DC Shaft Voltage** | **AC Shaft Voltage** | **Output DC voltage** | **Output current** |
| Sortie 1 | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Sortie 2 | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

*Notes:*

- ***The functional checks of the system are to be undertaken by MTUs/ CTT during sea trials and a minimum of five readings are to be recorded at 30 – 60 mins intervals during two consecutive sailings and the recordings are to be corroborated with the design / previous recordings prior clearing the system.***