

ORV SAGAR KANYA

CRUISE REPORT

SK 323

Submitted to
NATIONAL CENTRE FOR ANTARCTIC & OCEAN RESEARCH,
HEAD LAND SADA, MORMUGAO, GOA,
As per ORV Sagar Kanya Annual Maintenance Contract
With
Ministry of Earth Science, New Delhi

By

NORINCO PRIVATE LIMITED
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Vessel : ORV. Sagar Kanya.
Cruise No : SK 323.
Chief Scientist : Mr. Ashok Kumar.
Objective : BUOY Operation.
Institution : INCOIS.
Embarkation : Goa, India.
Disembarkation : Goa, India.
Period : 19.08.2015 to 15.09.2015.
Participants : G.Mahadevan
G.K. Tharanitharan
R.Vinothkumar
M.Ramesh
R.Prakash

Acknowledgement.

We, the Norinco engineers onboard, thank the Chief Scientist and the scientific team for their support and extending their knowledge during the course of our servicing activities onboard.

We thank the Captain, ship staff and crew for their active support and care during the voyage.

The co-ordination and support of Director, NCAOR and his colleagues are gratefully acknowledged.

-Norinco Engineers Team.

Introduction

This report forms part of the Annual Maintenance Contract awarded to Norinco Private Limited for maintenance of scientific equipment onboard ORV. Sagar Kanya.

Regular servicing and Maintenance of equipment during cruise was carried out as per maintenance schedule.

This report describes the breakdown service carried out on those equipments that were found defective during routine maintenance, equipment used and required breakdown maintenance and performance of those equipment used in the cruise.

The report also includes a list of spares consumed, their source and requirement of spare for future use onboard.

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| A. Chemical / Analytical Instruments |
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| A02. | Oxygen Titration Unit | Maintenance Schedule: Date & Service: 14.09.2015: QS. |
| Service carried out and Remarks: 14.09.2015: Quarterly service carried out as per the maintenance schedule and it is operational. | | |

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| A04. | Water Purifying System | Maintenance Schedule: Date & Service: 24.08.2015: QS. |
| Service carried out and Remarks: 24.08.2015: Quarterly service carried out as per the maintenance schedule and it is operational. | | |

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| A06. | pH Meter | Maintenance Schedule: Date & Service: 21.08.2015: WS. 28.08.2015: WS. 04.09.2015: WS. 11.09.2015: WS. |
| Service carried out and Remarks: 21.08.2015 } 28.08.2015 } 04.09.2015 } 11.09.2015: Weekly service carried out as per the maintenance schedule and it is operational. | | |

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| A08. | UV Chamber, UV Lamp | Maintenance Schedule: Date & Service: 25.08.2015: MS. |
| Service carried out and Remarks: 25.08.2015: Monthly service carried out as per the maintenance schedule and it is operational. | | |

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| B. Geological / Geological Instruments |
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| B01. | Gravity Corer | Maintenance Schedule: Date & Service: 06.09.2015: YS. |
| Service carried out and Remarks: 06.09.2015: Yearly service carried out as per the maintenance schedule and it is operational. | | |

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| B02. | Hydraulic Piston Corer | Maintenance Schedule: Date & Service: 08.09.2015: QS. |
| Service carried out and Remarks: 08.09.2015: Quarterly service carried out as per the maintenance schedule and it is operational. | | |

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| B03. | Rock Saw | Maintenance Schedule: Date & Service: 04.09.2015: YS. |
| Service carried out and Remarks: 04.09.2015: Yearly service carried out as per the maintenance schedule and it is operational. | | |
| B04. | Liner Saw Unit | Maintenance Schedule: Date & Service: 04.09.2015: YS. |
| Service carried out and Remarks: 04.09.2015: Yearly service carried out as per the maintenance schedule and the Liner Saw is operational. | | |
| B 05. | Rock Mill | Maintenance Schedule: Date & Service: 10.09.2015: MS. |
| Service carried out and Remarks: 10.09.2015: Monthly service carried out as per the maintenance schedule and the Rock Mill is operational. | | |
| B06. | Bottom Grab (Small) | Maintenance Schedule: Date & Service: 11.09.2015: YS. |
| Service carried out and Remarks: 11.09.2015: Yearly service carried out as per the maintenance schedule and all the grabs are operational. | | |
| B07. | Bottom Grab (Large) | Maintenance Schedule: Date & Service: 11.09.2015: YS. |
| Service carried out and Remarks: 11.09.2015: Yearly service carried out as per the maintenance schedule and all the grabs are operational. | | |
| B08. | Pipe Dredge | Maintenance Schedule: Date & Service: 12.09.2015: QS. |
| Service carried out and Remarks: 12.09.2015: Quarterly service carried out as per the maintenance schedule and equipment is operational. | | |
| B09. | Gravity Square Box Corer | Maintenance Schedule: Date & Service: 13.09.2015: QS. |
| Service carried out and Remarks: 13.09.2015: Quarterly service carried out as per the maintenance schedule and equipment is operational. | | |
| B10. | Side Scan Sonar + Tow Fish | Maintenance Schedule: Date & Service: 15.09.2015: QS. |

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| <p>Service carried out and Remarks: 15.09.2015: Quarterly service carried out as per the maintenance schedule and equipment is operational.</p> |
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| B13. | Deep Sea Echo sounder + Repeaters | Maintenance Schedule: Date & Service: 07.09.2015: QS. |
| <p>Service carried out and Remarks: Deep sea echosounder was used throughout the cruise and data was recorded. On completion of the cruise the recorded data was copied to CD.</p> <p>07.09.2015: Quarterly service carried out as per the maintenance schedule and the Echo Sounder is operational.</p> | | |

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| B14. | Shallow Water Echosounder + 4 Repeaters | Maintenance Schedule: Date & Service: 07.09.2015: QS. |
| <p>Service carried out and Remarks: SWES was used in shallow water regions during the cruise.</p> <p>07.09.2015: Quarterly service carried out as per the maintenance schedule and the system is operational only with the forward transducer.</p> | | |

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| B 15. | MBES | Maintenance Schedule: Date & Service: |
| <p>Service carried out and Remarks: MBES was used during the cruise for verifying depths.</p> <p>On 07.09.2015 MBES was used for surveying the deployment area of INCOIS ADCP Buoy and data was recorded.</p> | | |

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| B16. | SBP | Maintenance Schedule: Date & Service: 09.09.2015: QS |
| <p>Service carried out and Remarks: SBP was used throughout the cruise and data was recorded. On completion of the cruise the recorded data was copied to CD.</p> <p>09.09.2015: Quarterly service carried out as per the maintenance schedule and the equipment is operational.</p> | | |

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| B21. | Tension Meter for Deep Sea Winch | Maintenance Schedule: Date& Service: 20.08.2015: MS |
| <p>Service carried out and Remarks: 20.08.2015: Monthly service carried out as per the maintenance schedule and the equipment is operational.</p> | | |

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| B22. | Sieve Shaker | Maintenance Schedule: Date& Service: 21.08.2015: MS |
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| <p>Service carried out and Remarks: 21.08.2015: Monthly service carried out as per the maintenance schedule and the equipment is operational.</p> |
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| C. Oceanography / Meteorology / Biology Equipment |
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| C01. | Automatic Plankton Sampler | <p>Maintenance Schedule: Date& Service: 22.08.2015: MS</p> |
| <p>Service carried out and Remarks: 22.08.2015: Monthly service carried out as per the maintenance schedule and the equipment is operational.</p> | | |

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| C03. | XBT System | <p>Maintenance Schedule: Date& Service: 22.08.2015: QS</p> |
| <p>Service carried out and Remarks: 22.08.2015: Quarterly service carried out as per the maintenance schedule and the equipment is operational.</p> | | |

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| C04. | CTD Profiling System (Idronaut). | <p>Maintenance Schedule: Date& Service: 14.09.2015: MS</p> |
| <p>Service carried out and Remarks: 14.09.2015: Monthly service carried out as per the maintenance schedule and the equipment is operational.</p> | | |

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| C17. | Thermosalinograph | <p>Maintenance Schedule: Date& Service:</p> |
| <p>Service carried out and Remarks: Thermosalinograph was used throughout the cruise; the data was recorded and copied on CD.</p> <p>On 12.09.2015 Early morning, Pure sea water pump motor got problem. It was informed to Engine control room. They checked the sea water pump motor and found that suction is not working. TSG data recording was stopped.</p> <p>Pure sea water pump has been rectified on 14.09.2015 and TSG data recording was started and made operational.</p> | | |

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| C20. | Rotary Shaker | <p>Maintenance Schedule: Date& Service: 22.08.2015: MS</p> |
| <p>Service carried out and Remarks: 22.08.2015: Monthly service carried out as per the maintenance schedule and the equipment is operational.</p> | | |

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| D. Auxiliary / General Equipment |
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| D01. | GPS + Power Supply | Maintenance Schedule: Date & Service: Operational |
| Service carried out and Remarks: GPS was used throughout the cruise and it is operational. | | |

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| D02. | CCTV | Maintenance Schedule: Date & Service: 06.09.2015: YS |
| Service carried out and Remarks: CCTV was used during CTD & Buoy operations to monitor the winch movements and deck activities. 06.09.2015: Yearly service carried out as per the maintenance schedule and the equipment is operational. | | |

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| D03. | Refrigerators | Maintenance Schedule: Date & Service: 21.08.2015: WS. 28.08.2015: WS. 04.09.2015: WS. 11.09.2015: WS. |
| Service carried out and Remarks: 21.08.2015 } 28.08.2015 } 04.09.2015 } 11.09.2015: Weekly service carried out to all the three refrigerators as per the maintenance schedule and all of them are operational. | | |

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| D05. | Deep Freezer | Maintenance Schedule: Date & Service: 23.08.2015: QS. |
| Service carried out and Remarks: 23.08.2015: Quarterly service carried out as per the maintenance schedule and all of them are operational. | | |

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| D 07 | Personal Computer / Server & Peripherals (12 CPUs, 15 monitors) | Maintenance Schedule: Date & Service: 28.08.2015: MS |
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| Service carried out and Remarks: The following onboard computers are included in AMC and their status are as follows: | | | |
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| Sl. No | PC | Loc: / Dedicated to | Status / Remarks |
| 01 | Computer: 01 Make: Lenovo Think Centre. M/N: 8811-FRA. S/N: L9AM500. Monitor: 01 Lenovo Think Vision | Chief scientist Cabin | Used / Operational. |
| 02 | Computer: 02 Make: Lenovo Think Centre P/N: MT-M 8811-FR8 S/N: L9AM507 Monitor: 02 Make: HPLE1851W. P/N: NK033A. S/N: CNC102QH7B | Met Lab / AWS | Used / Operational. |
| 03 | Computer: 03 Make: HP Compaq 8100. P/N: XT767PA#ACJ. S/N: INA109VJRJ. Monitor: 03 Make: HP LE1851w. P/N: NK033A. S/N: CNC102QH85. | Met Lab / General Purpose | Used / Operational. |
| 04 | Computer: 04 Make: HP Compaq 8100 P/N: XT767PA#ACJ S/N: INA109VJYS Monitor: 04 Make: HP LE1851w. P/N: NK033A. S/N: CNC102QHX1. | Dry-Lab Port / Thermosalinograph | Used / Operational. |
| 05 | Computer: 05 Make: HP Compaq 8100 P/N: XT767PA#ACJ S/N: INA109VJRR Monitor: 07 Make: HP LE1851w. P/N: NK033A. S/N: CNC102QHM3. | Dry-Lab Port / CTD | Used / Operational. |
| 06 | Computer: 06 Make: Lenovo Think Centre. M/N: 8811-FRA. S/N: L9AM534. Monitor: 06 Make :AOC Model No. TFT185W80PS S/N:AOCWSM5NA1802098 | Dry-Lab Port/ ADCP | Used / Operational. |

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| 07 | <p>Computer: 07 Make: HP Compaq 8100. P/N: XT 767PA#ACJ S/N: INA109VJWD. Monitor: #08 Make: HP LE1851w. P/N: NK033A. S/N: CNC102QH7K.</p> | Dry-Lab Port / Magnetometer | Used / Operational. |
| 08 | <p>Computer: 08 Make: Lenovo Think Centre. M/N: 8811-FRA. S/N: L9AM499. Monitor: 05 Make : Acer Model : V193HQL Version : V193HQL H6 P/N : VM.XV3SS.HO1 S/N : MMLKESS0063010C9938507</p> | Dry Lab Stbd / Echo sounder | Offloaded for repairs. |
| 09 | <p>Computer: 09 Make: HP Compaq 8100. P/N: XT767PA#ACJ. S/N: INA109VJKN. Monitor: 09 Make: HP LE1851w. P/N: NK033A. S/N: CNC102QFYF.</p> | Conference room | Used / Operational. |
| 10 | <p>Computer: 10 Make: HP Compaq 8100. P/N: XT767PA#ACJ. S/N: INA109VJYM.</p> | Photo Lab | Operational. |
| 11 | <p>Computer: 11 Make: Lenovo Think Centre M/N: 8811-FRA. S/N: L9AM498 Monitor: 11 Make: Lenovo Model: 9227-AD1 Serial Number: VIA2955</p> | Photo Lab | Operational. |
| 12 | <p>Computer: 12 Make: Zebronics. Model: Elegance.</p> | Photo Lab | Operational. |
| 13 | <p>Computer: 13 Make: XTECH.</p> | Photo Lab | Operational. |
| Monitors | | | |
| 14 | <p>Monitor:12 Make: Lenovo Think Vision Model: 9227 AD1. S/N: V1A2976.</p> | Wheel House | Used/Operational. This is connected with wheel house as deep sea echo sounder repeater. |

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| 15 | Monitor:13 Make : AOC S/N: AOCWSM5NA1801905 | Dry Lab Stbd / SWES | Used/Operational. This is connected with SWES. |
| 16 | Monitor: 10 AOC. 18.5' Wide LED P/N. e950Sw Model No.185LM00013 S/N: AOCAR96C3052436 | Photo Lab | Operational. |
| 17 | Monitor: HP Server Make: HP LE1902x. P/N: A9B99A. S/N: CNT149Q0KP. | Multibeam Lab / Multibeam Post- processing | Operational. |
| 28.08.2015: Monthly service carried out as per the maintenance schedule and all of them are operational. | | | |

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| D08. | Local Area Network (LAN) | Maintenance Schedule: Date & Service: 29.08.2015: MS. |
| Service carried out and Remarks : 29.08.2015: Monthly service carried out as per the schedule and it is operational. | | |

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| D09. | Printers | Maintenance Schedule: Date & Service: 30.08.2015: MS | |
| Service carried out and Remarks: The following printers are included with AMC and their status are as follows: | | | |
| No | Make of the printer | Location | Status / Remarks |
| 1 | HP LaserJet P 2015dn | CS Cabin | Used, Operational |
| 2 | HP LaserJet P 1007 | Met Lab | Used ,Operational |
| 3 | HP LaserJet P 1007 | Photo Lab | Operational |
| 4 | HP LaserJet P 1007 | Photo Lab | Operational |
| 5 | HP LaserJet CP 1525n | Conference Room | Operational |
| 6 | HP LaserJet P 2015dn | CTD Lab | Used, Operational |
| 7 | HP LaserJet 1150 | Photo Lab | Operational |
| 8 | HP LaserJet 1150 | Tape Store | Operational, Cover broken |
| 9 | HP LaserJet 1150 | Tape Store | Operational |
| 30.08.2015: Monthly service carried out as per the maintenance schedule and all of them are operational. | | | |

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| D10. | External CD Writer | Maintenance Schedule: Date & Service: 01.09.2015: MS. |
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| Service carried out and Remarks : 01.09.2015: Monthly service carried out as per the schedule and the external CD writer is operational. |
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| D11. | Scanner | Maintenance Schedule: Date & Service: 01.09.2015: MS. |
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| Service carried out and Remarks : 01.09.2015: Monthly service carried out as per the schedule and it is operational. |
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| D12. | Plotter HP DesignJet 1050C Plus. | Maintenance Schedule: Date & Service: |
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| Service carried out and Remarks : The system is offloaded from the ship as it was non operational and repairing of the system is in progress through OEM service team. |
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| D13. | Autoclave | Maintenance Schedule: Date & Service: 21.08.2015: MS. |
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| Service carried out and Remarks : 21.08.2015: Monthly service carried out as per the schedule and it is operational. |
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| D15. | Over Head Projector | Maintenance Schedule: Date & Service: 26.08.2015: QS. |
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| Service carried out and Remarks : 26.08.2015: Quarterly service carried out as per the schedule and it is operational. |
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| D16. | Slide Projector | Maintenance Schedule: Date & Service: 26.08.2015: QS. |
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| Service carried out and Remarks : 26.08.2015: Quarterly service carried out as per the schedule and it is operational. |
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| D17. | LCD Projector | Maintenance Schedule: Date & Service: 26.08.2015: QS. |
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| Service carried out and Remarks : 26.08.2015: Quarterly service carried out as per the schedule and it is operational. |
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| D 18. | Dynamic Positioning System & All sub - Units | Maintenance Schedule: Date & Service: 27.08.2015: MS. |
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| Service carried out and Remarks : The DP was used during the cruise during operation of Buoy and CTD stations. Though the system was operational, the following sub units are non-functional and need replacement: |
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1. Portside Wind sensor.
2. Forward OS console Monitor.

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| The subscription for newly supplied C-NAV3050 DGPS (S/N: 22972) was received and activated on 09 th September 2015. The subscription is valid up to 08th October 2015. |
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27.08.2015: Monthly service carried out as per the schedule and it is operational.

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| D19. | Hi-PAP System | Maintenance Schedule: Date & Service: 27.08.2015: MS. |
| Service carried out and Remarks : 27.08.2015: Monthly service carried out as per the schedule and it is operational. | | |

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| D20. | Deck Crane | Maintenance Schedule: Date & Service: |
| Service carried out and Remarks : The Deck crane was used during the cruise for retrieval and deployment of INCOIS BUOY. The equipment is operational. | | |

ADDITIONAL WORKS CARRIED OUT.

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| | Seabird CTD | Maintenance Schedule: Date & Service: |
| Service carried out and Remarks: CTD was deployed at 07 stations and the data was recorded. Water Samples has been collected at all locations in various depths. On completion of each operation, the underwater unit was washed with fresh water and secured on main deck. The collected CTD Data was processed and the data set is included in the CD. | | |

For Norinco Private Limited,

Chief Scientist

G.Mahadevan.

Mr. Ashok Kumar,
INCOIS, Hyderabad.