

XXI Indian Antarctic Expedition—An Overview

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Leader & Station Commander Maitri, Antarctica

Indian Scientific Expedition to Antarctica is challenging, adventurous and a National commitment for the quest of science. India has long commitment of Antarctic Programme as a result of which National Centre for Antarctic and Ocean Research (NCAOR) was established to look after all the activities related to Polar Logistics & Sciences. Now more than 60 National Laboratories are involved in our Indian Antarctic Programme. The 21st Indian Scientific Expedition to Antarctica comprised 49 members drawn from 20 scientific institutions/organizations was set to achieve yet another goal of our National Antarctic Programme. The main task of the expedition was continuation of efforts for further advancement of multidisciplinary scientific fields. For the first time Dr. PC. Pandey, Centre Director, NCAOR, accompanied the expedition team to Antarctic for getting first hand information on different aspects of the expedition activities for future improvements in logistics and scientific activities and a state of art equipment, Gas Chromatograph was to be installed along with many other innovative projects.

His Excellency Shri Mohammad Fazal Governor of Goa launched XXI Indian Antarctic Expedition at National Centre for Antarctic & Ocean Research, Goa on 5th January 2002. Team consisting of 25 Winter Member and 24 Summer Member was flown from Goa to Mumbai on 6th January 2002 and then to Cape Town via Johannesburg. Team members boarded M. V. Magdalena on 7th Jan 2002. Dr. Harsh K. Gupta, Secretary, Department of Ocean Development (DOD), Government of India; Dr. P. C. Pandey, Centre Director, National Centre for Antarctic and Ocean Research (NCAOR) and Sri T.V.P. Bhaskar Rao, Director Logistics, NCAOR addressed team members on board ship on 8th January 2002 and team was given sendoff by them. Sri Hiranand Purkait, Deputy Secretary, DOD, Government of India, Dr. N. Khare, Programme Manager (Science), NCAOR and members of Indian High Commission Office were also present at the port on this occasion. Dr. S. L. Jain and Maj. R .K. Sharma

were appointed as Deputy Leaders with due permission from Secretary DOD. Ship sailed at 1746 Hrs UTC on 8th Jan 02 and crossed 40° S on 10th January 02 at 0450 UTC

Different committees were made to manage the distribution of polar clothing, Mess, Cargo Handling, and Academic activities. Polar clothing was distributed to team members and scientific presentations from members started on 11th Jan 02. Scientific observations by IMD, ZSI and GSI started from 9th Jan 02. Sailing was very smooth and first Iceberg was sighted at 47° 53' S 16° 21' E on 11th Jan 02. We crossed 60° S on 14th and Antarctic Circle on 15th Jan 02. Ship reached Polynya and fast ice 8 NM off India Bay on 16th Jan at 1500 Hrs UTC without much difficulty. This was shortest time taken by any Antarctic Expedition launched from Cape Town, South Africa.

Helicopters were taken out from hold on 17th Jan and first courtesy flight to Maitri landed at Maitri main helipad at 1520 UTC. Weather deteriorated after two hours and next flight from ship could take off only on 22nd Jan. Expedition Leader and Dr. P.C.Pandey went to NOVO on foot for courtesy visit on 20th Jan 02 and was taken to different station facility for visit. Dr. S L. Jain was appointed Camp Commander with Dr. A. V. K. Keshav Prasad as Deputy Camp Commander. On 22nd Jan 22 sorties were flown and 27 persons and their personal & scientific baggage, were shifted to Summer Camp at Maitri. Weather again deteriorated and next flying could be resumed only on 29th Jan.

Scientific and logistic activities continued at Summer Camp and ship during this period. SODAR & Bio-meter were installed at ship and INMARSAT-M terminal, CODAN HF set and Gas Chromatograph were installed and inaugurated by Dr. P. C. Pandey, Centre Director, NCAOR at Maitri. No flying was possible on 26th Jan the Republic Day; it was celebrated at Ship and Maitri simultaneously. On 29th Jan 8 sorties were flown and 11 persons and their personal & scientific baggage, were shifted to Summer Camp at Maitri. Windmill generator was installed for charging of repeater batteries. All summer demand items were shifted to Maitri and handed over to old wintering team. Dr. Pandey shifted to ship on same day and ship was moved for his visit to South African Antarctic Station, SANAE-IV.

We reached SANAE-IV base on 01 Feb 02 at 1600 UTC and were welcomed by Station Commander Mr. S. Oosthuizen and outgoing leader Dr. Foruck Parker. Dr Pandey were taken to all station facilities and explained scientific and logistics aspects of all South African National Antarctic Programme (SANAP). After shifting Dr. P. C. Pandey to South African Expedition ship S. A. Aghulas on 2nd Feb 02 our ship M. V. Magdalena was moved for India Bay and reached there on 4th Feb.

On 5th fuel dump was created at Maitri for field camp and field work of GSI started on the same day. GSI team decided to do survey work with Maitri as a base. They were flown to Muhlig Halfmannfjella on 6th & 7th Feb and area up to 720070 S 055840 E the farthest point reached by any Indian Antarctic Expedition was surveyed by using drop points by helicopters. Shifting of frozen provisions started on 16th Feb.

Station was taken over on 23rd February 2002. Sri M. J. D'Souza and his team members were shifted to ship on same day. All frozen items have been shifted to Maitri by 24th Feb 02. ATF fuel drums were airlifted to augment the shortage of fuel at the station. First batch of scientists of summer camp shifted to ship on same day. All other scientists were shifted to ship in a phased manner.

Convoy route recce was done on 25th Feb 02 and joint convoy started from Maitri on 27th Feb 02 at 0400 UTC. Convoy reached shelf same day at 1900 UTC. Team was shifted to ship by helicopter for rest. Weather deteriorated on 28th Feb 02 and further work on cargo handling stopped. It was reported from ship on 02 March 02 that a part of Ice Shelf broke with one white 10 KL oil tanker on it. Tank was lost into sea before recovery process could be started. Engine of one PB-270 was replaced at the shelf itself and vehicle was made operational.

On 4th March 02 all scientists were shifted to ship and summer camp was closed. Weather improved on 4th March 02 and ship came along side shelf and moored. Process of decanting ATF started at 1200 UTC on 04th March 02. Part of fuel and two containers were taken out and subsequent operation was suspended because of deterioration of weather.

Polar Bear was tested and minor repair was done and vehicle was driven at shelf for testing. Attempt was made to bring the vehicle to Maitri for major repair before making it operational. The vehicle broke-down 5 Km short of D.G. due to major trouble in pump assembly. First joint convoy started its return journey on same day and reached safely at Maitri on 5th March 2002 with 3 Fuel Tanks (42 KL ATF) and two containers.

Second convoy started from Maitri on 8th March at 0100 UTC and reached shelf at 1900 UTC same day but got stranded there due to blizzards of severe intensity. On 12th March Surya-1 generator seized due to over heating caused by breaking of fan belt. Weather improved on 13 March 02 and cargo handling operation resumed.

All members of old team stranded at Maitri due to bad weather were shifted to ship. All other team members of XXIIAE also has been shifted by first available flight. Nb/Sub Gurbachan Singh and HMT Prem Kumar Awasthi who were wintering team members were asked to return back due to medical reasons. They showed a lot of reluctance and refused to leave

Maitri base for return journey citing one or other excuses. After a lot of persuasion and with the intervention of Col. Bharat Sharma of AHQ they were shifted to ship with the help of logistic team members

Weather again deteriorated on 14th March 02. After completion of all assigned task to an optimum level except SANAE convoy route marking the ship was ready for return journey subject to weather conditions. Permission was obtained from National Centre for Antarctic & Ocean Research, Department of Ocean Development for return journey of expedition

Weather improved on 17th March 02. All convoy team members with communication equipment etc. were shifted to shelf. After completion of task helicopters were taken to hold and **M. V. Magdalena sailed on its return voyage on 17th March 2002 at 1900 Hrs UTC with 24 members of 18th WOT and 25 Summer Team members of XXI Indian Antarctic Expedition** on board ship.

The Wintering Begins

MARCH 2002

The winter was approaching fast and radiators used for heating the station were in bad condition. They needed immediate replacement. To our surprise the new radiators could not reach Maitri with annual supply due to some administrative reasons. Therefore, to augment our life support system all radiators were checked and cleaned thoroughly. This minimized the replacement of radiators to barest minimum at present and also improved their efficiency. Replacement of bent in boiler room even after welding of new piece was not very successful due to heavy corrosion of remaining part of it. The welding work was again done successfully with the help of NOVO technician and new pipe welded.

New water pipeline layout by earlier team was found blocked by ice. It was cleaned and pipeline was made operation for standby use. Leakage in old pipeline was repaired.

Convoy returned to Maitri on 18th March with two containers and three fuel tanks (42 KL ATF). Axle assembly of one PB-270 broke at the shelf and the vehicle had to be left at the shelf. The vehicle was repaired during third convoy and made operational. The planetary gear assembly of other PB-270 broke just 20 km short of Maitri. Vehicle was repaired after bringing spare from Maitri and included in convoy.

Third convoy of the month started on 25th March and team returned back on 28th March with 6 vehicles 2 containers and 3 fuel tanks (42 KL ATF) without any major trouble in route. Mess and fire fighting committee constituted and made functional. Reply of Rajya Sabha started question regarding medical services and facilities available at Maitri Station was prepared and submitted to Secretary DOD.

Environmental cleaning of summer camp completed and huts closed for next summer. All power connections were withdrawn from the closed huts. First Aurora of the season was seen on 23rd March.

Newly purchased containerized incinerator module was brought to Maitri during 2nd convoy and shifted to the designated space on 27th March 02. **The incinerator was formally commissioned** on the eve of **HOLI on 28th March 2002** and has been named as **HOLIKA**. All type of waste generated in kitchen and food store was incinerated successfully and henceforth all food waste, papers, wood etc. were incinerated on day to day basis even during gale force wind. Holi celebrated on 29th March.

APRIL 2002

Blizzard started on 2nd April and stopped on 4th April. Minor fire incident took place in workshop area. Hero Honda portable generator kept on 20 KL fuel tank caught fire but was brought under control immediately by Spr Surinder Singh and L/Nk M. Ramesh and a major fire accident could be averted due to their presence of mind.

On 5th April engine of one PB-330D was replaced at Maitri and vehicle was made operational. All vehicles were checked and repaired before undertaking convoy. Fourth convoy started from Maitri on 8th April with 3 fuel tanks, one container and 2 empty trailers. Three PB-330D and 4 PB-270s participated in fourth convoy in the onward journey. During onward journey axel assembly of one trailer broke down and it was dropped en-route along with its load, an empty fuel tank. At shelf one Pb-270 vehicle became unserviceable due leakage in radiator.

During this convoy Mantis Crane was recovered from hard ice and made operational. Five 24 KL fuel tanks and 2 Portable-cabins were recovered from hard ice and relocated. Fuel Tanks (13), Containers (04), Half bins (01), Trailers (03), Sledges (01), Skidoo (01), Mantis Crane (01), Old seized engine of PB-270 (01) and ATF fuel barrels (18) were sifted from India Bay to D. G. Base during fourth convoy to avoid any loss of assets due to breaking of ice self. One PB-270 vehicle broke down in return

journey due to planetary gear assembly failure. On 18th E-mail ID of station got hacked and receiving of E-mail was hampered till 22nd April.

On 26th radio contact established with convoy and we received information that Maj. R. K. Sharma was seriously ill. Exact nature of illness was not conveyed to station. He was brought to Maitri on 28th April with sever dehydration and in serious condition. Immediately treatment was given and he recovered within 24 hours. Convoy returned Maitri on 28th April in mild blizzard after 22 days and braved 3 blizzards without proper heating arrangements. One Container and 4 Fuel Tanks with 42 KL ATF was brought to Maitri successfully.

MAY 2002

Most severe blizzard of the year started on 6th May and highest wind speed of 70 knots gusting to 92 knots recorded. Urinal modules of summer camp got uprooted and HF antenna wire got snapped.

Fifth convoy started on 11th May 02 with 5 vehicles (3 PB-330 & 2 PB-270) and 8 persons. It carried back with it one container with garbage and 3 empty fuel tanks and one empty trailer. On 12th May fire incidence occurred in mobile accommodation Banjara due to spillage of LPG liquid from cylinder. The fire was extinguished immediately without any significant loss. During this convoy mobile generator complex Jeevan Jyoti was activated and made operational. One Old GPS was retrieved from garbage, repaired and successfully used in the convoy. Convoy retrieved one vehicle left en-route and excavated one fuel tank at D. G. base. 10 Fuel tanks were given to Novolazarevskya on loan for decanting of their excess fuel from ship. Convoy returned on 19th May with 6 Vehicles and five fuel tanks (with 50 KL ATF).

On 17th May one isolation door was fitted in B-block, which resulted in higher efficiency of heating system. Minor defects were also attended to prevent snow ingress in the station. Last Sun of the season was seen on 21 May and marked the beginning of polar night. Demand list preparation for 22nd IAE started and faxed to NCAOR in record time.

On 27th May we received a SOS message from NOVO for help. Their only available helicopter on board M. V. Magdalena got damaged and Russian Expedition Team got stranded at NOVO. For the help of our Russian friends one special convoy with two PB-330 vehicle and 4 persons along with Banjara and one fuel tank started on 29th May and dropped Russian team at Russian Bay at very crucial time. Substitute members for army team HMT V.V. Gangadharan and Hav. P. Chettiannan joined the team. They arrived to station through Russian along with Russian

Expedition. Convoy team returned back on 2nd June with 2 vehicles and 15 fuel tanks (15 KL ATF) without any major trouble in route.

JUNE 2002

In the month of June the cylinder head of one of 62.5 KVA Generator (Aditya-2) was damaged due to poor quality of belt which broke down during night time resulting minor fire in engine. The cylinder head was replaced and engine was made operational.

In the month of June fire broke down in the duct line trace heating on 17th and 19th of the month. The complete duct line was opened and damaged trace heating cable was replaced. The inflammable insulating material (FU FOAM) was completely removed and junction boxes were put at all junction points of trace heating and power cables. Only one water line could be restored after continuous work of three days.

Mid Winter Day celebrated on 21 June. Greeting message received from Sri Atal Bihari Vajpayee, Prime Minister of India; Prof. Murli Manohar Joshi, Minister of Science and Technology & Ocean Development, Government of India; Secretary, DOD; Center Director, NCAOR and neighboring stations of countries South Africa, Russia, Japan Korea and Germany boosted our morale.

JULY 2002

Debriefing of XXI IAE completed on 3rd July at New Delhi in presence of high dignitaries and Antarctic achievement awards given to some of ex-expedition members. Selection process of next expedition started.

E-mail system got infected with unknown virus on 11th July and became unserviceable. Norton-2002 software got corrupted along with other system files. The system hard disk was formatted to remove the virus and thus a lot of operational information was lost. The E-mail operation was suspended for few days.

On 20th July fire broke down in Aditya -2 Generator due to puncture in FIP pipeline. The fire was immediately controlled. On same day alternator of another generator also became unserviceable due to damage-in ball bearing.

Sun disc became visible on 22nd July marking the end of polar night.

In the month of July the engine of one of the 62.5KVA Generators had ceased due to sudden failure of Idler Pulley Bearing. Major repairs of the engine, was carried out involving replacement of cylinder heads, pistons, inlet and outlet valves, cylinder liners and FIR The Generator has been completely overhauled.

AUGUST 2002

In the month of August the engine of one of the 75 KVA Generators and alternator was completely overhauled. An old 5 KVA Generator discarded by the earlier teams was repaired and made functional.

56th Independence Day celebrated on 15th August in presence of guests from NOVO. Need of e-mail policy for the station felt necessary and accordingly draft suggestion sent to NCAOR for consideration.

Maintenance of vehicles, trailers and living accommodation for the forthcoming convoys was done. New engine assembly was fitted in PB-330 vehicle and vehicle made functional. With this fitment of all the three new engines has been completed by this team. Seven vehicles became in working condition.

MANTIS Cranes at Maitri has become unserviceable due to crack in Hydraulic Fluid pipe and need repair / replacement. Required spare pipe was not available at the station.' This crane & one of the Cranes at DG requires extensive maintenance.

SEPTEMBER 2002

On 7th September very high ozone value recorded. Total ozone value recorded in Dobson Unit by Brewer Spectrophotometer indicates that this year total ozone value was higher in comparison to previous years during this period of year. This year an abrupt rise in Total ozone value (Exceptionally high) was noticed on 7th September 02 followed by rapid depletion by 13th September 02.

Crane facility provided to NOVO for repairing of their mobile accommodation. Blizzard started on 9th September. On 10th September Ganesh Chaturthi was celebrated with full Marathi fever. Blizzard continued with almost zero visibility, high snow accumulation with wind speed reaching 85 knots.

Seventh convoy started on 21st September 02 with seven vehicle, four empty fuel tanks and two containers for back loading. On 22nd convoy team reached barrel number 50 and repaired one trailer left there in 4th convoy and further preceded for DG. The convoy returned back to Maitri

safely on 28th September 2002 at about 1800 UTC with all vehicles and five fuel tanks and one half bin. Convoy team could not retrieve Polar Bear Vehicle from its location in this convoy. While taking out Jeevan Jyoti the generator module from hard ice Winch Rope of Crane broke down and Pulley Block fall down. Persons guiding from below were narrowly saved from major accident. The rope was repaired and generator was taken out except its sledge. Attempt was made to tow it back to Maitri but failed due to heavy load.

OCTOBER 2002

Jeevan Jyoti was retrieved from D. G. Base and brought to Maitri during 8th Convoy. Overhauling of Jeevan Jyoti mobile generating complex was completed. Bhaskara Generators could not be used during the polar nights because the coolant pipeline was frozen. Clearing of blockade was not possible because a section of pipeline was passing from below the container housing the generator. The team experimented with new combination of coolant and water circulation modification was completed. There after Bhaskara generator brought into use and station power supply was maintained on this single generator for fuel economy.

Snow petrel arrived on 6th October signaling the arrival of summer. The 8th and last convoy started on 9th October 02 with seven vehicle, four empty fuel tanks and two containers for back loading. While towing the load door of one container opened and two engines being back loaded dropped on the ground further damaging them. Convoy moved leaving them at same place. Convoy relocated tanks and containers etc at D.G Base, retrieved Polar Bear vehicle and Jeevan Jyoti from hard ice, left three vehicles there for use during next expedition and reached back at Maitri on 18th October.

The Polar Bear vehicle was brought to Maitri in last convoy by loading it on sledge. It was quite unbalance load for towing vehicle. However convoy team has shown a great deal of skill and brought it to Maitri safely on 18th October 2002. At Maitri it was inspected thoroughly and defects were repaired successfully on 21 October 2002. Now vehicle is in operational condition. Its trailer was also retrieved from Sankalp Point with help of same vehicle and brought to Maitri. Thereafter the vehicle was used for local shifting of materials containers etc.

MANTIS Crane at Maitri had become unserviceable due to crack in Hydraulic Fluid pipe and need repair / replacement. The pipe was improvised for essential work. This crane & one of the Cranes at DG

requires extensive maintenance. With the help of Russian station all three dozers were repaired successfully and brought in operational condition.

The newly brought Fire Alarm system was installed and made operational with local efforts and co-operation. It is under observation at present. Old fire alarm system is also working satisfactorily and has been left operational as a standby system.

Environmental cleaning of station started with shifting of half bins and containers around the station to container complex. All empty barrels etc were collected and shifted to alternate fuel dump near Jwala incinerator. New fuel dump was created in the rear of station by shifting of all 10 & 20 KL Fuel Tanks from earlier water logging pone area. This action was essential because international inspection team has objected the location of fuel tanks in water logged area. The pipeline was laid down from this fuel tank to generating station and connected with boiler room fuel line. A fire fighting water line was also extended to this point.

NOVEMBER 2002

Two penguins visited station on 1st November. Cargo containers, fuel tanks, empty barrels, scrap and the rubbish scattered all over the area were collected and placed systematically in the Container Complex. Melting of lake started from periphery by 19th November.

Complete overhaul of 30 KVA generator involving replacement of Cylinder Sleeves, Pistons, Piston Rings, Main and Big end bearings, inlet and outlet valves and blower assembly of the engine portion and replacement of exciter unit of generator portion was carried out. Bhaskara generator was brought into use. Complete station was supply was run on this single generator for fuel economy.

All the twenty Shock Absorber Springs and two axle assemblies of two trailers have been replaced. So far a total of 35 Shock Absorber Springs have been replaced in five trailers. 30 Groser Bar Supporting Plates of one of the trailer tracks have also been replaced. These trailers were handed over to this team with broken Shock Absorber Springs and damaged Groser Bar Supporting Plates. Track of one of PB-330 was repaired.

30 KL of ATF was recovered from buried barrels at the Dozer Point.

DECEMBER 2002

First IL-76 flight operated by ALCI landed on 3rd December at NOVO airfield with scientists from different countries. The flight brought

some fresh provisions for our expedition. On request of Russian Expedition Leader, limited transportation facility was provided to NOVO for shifting of passengers and cargo. Some space provided in our walk-in-type deep freezer to NOVO for keeping their frozen items.

On 27th December Russian Expedition Leader along with **Prof. S Rasuka., Director , Department of Antarctic Biology, Polish academy of Sciences** visited our station.

Cleaning and fitting of required infrastructure in summer camp huts was completed. Summer camp cleaned and made ready for occupation by XXIII AE team members.

JANUARY 2003

We completed all our assigned task in a dignified manner and were waiting for the arrival of new team which was supposed to reach here by 18th December 2002 but could not reach due to non-availability of chartered ship in time.

On 1st January 2003 members of XXII IAE started arriving at NCAOR Goa for briefing and launching ceremony. The expedition reached Cape Town on 6th January and could start its maiden journey for Antarctica only on 14th January 2003 at 0600 UTC. Ship crossed 40° S on 16th January 2003 at 0500 UTC. The team reached Antarctic coast on 23rd January 2003 but flying operation could not resumed due to bad weather.

54th Republic Day celebrated on 26th January 2003. Some members of NOVO and two members from Finnish Antarctic Expedition attended the function.

First courtesy helicopter flight from M.V Magdalena carrying Dr. Arun Hanchinal and DOD Observer Sri Arun Chaturvedi landed at Maitri helipad on 27th January 2003 at 1354 UTC. **Dr. Valery Lukin, Deputy Director, Arctic & Antarctic Research Institute, Russia** was present on the occasion. He was taken around the station and all station facility was shown to him. He appreciated our concern about ecological balance and was very much impressed with environmental cleanliness of the station. On very first day about 25 personnel with bag and baggage landed at Maitri and summer camp has been activated on same day.

The handing over of station facility and training on operation started from the next day itself. Summer Camp at DG started and all logistic support provided for searching of DG Hanger with the help of GPR. The hanger was searched and way to entry hatch was dug out for assess and taking out the Ice cores deposited there.

FEBRUARY 2003

The beginning of February started with visit of renowned scientists from different countries. **Dr Maxim Yu. Moskalevsky, Principal Research Associate Glaciology, Russian Academy of Sciences** and member of **SCAR** visited station on 5th February on courtesy visit. He was very much impressed with station facilities and environmental cleanliness.

On 8th February GSI test drilling site established. 09th February was marked with visit of **Prof. Yoshiyuki Fujii, Head of Arctic Environmental Research Center/ National Institute of Polar Research Japan**. He was shown all logistic and scientific facilities available here. On 10th February First man from XIX WOT Sri SVRR Rao shifted to ship thus marking the beginning of end of wintering.

On 12th February one of the summer camp toilet module caught fire. It was controlled immediately without any major damage to the structure and other infrastructure nearby. On 13th **Ms Izabella Eli Base Commander, Neumayer** the German station and **Dr Frank Wilhelms, Chief Scientist and Drilling Project In-Charge EPICA**, visited the station along with returning EPICA team. They were shown all station facility.

On 14th February 2003 **Swedish Antarctic Expedition team** (Wasa, 7303 S / 1325 W and SVEA 7435 S / 1113 W) with their leader Mr. Sven Lidstrom and **Finnish Antarctic Research Program** team (Aboa, 7303 S / 1325 W) with their leader Mr. Mika Kalakoski visited station and were shown the station facilities.

All station facility was handed over to new team and all necessary training has been imparted to respective charge holders. The station was ready for handing over to new team. Interim winter report and Station handing over note documents were sent to NCAOR by e-mail on 18th Feb 03 for information and review. Due to bad weather flying operation could not be resumed. Weather cleared on 20thFeb 03 and maximum number of wintering team members were shifted to ship.

The charge of station was handed over to Dr. Aran Hanchinal on 25th February 2003 in formal ceremony. The remaining team members also shifted to ship. The ship could not berthed at new site because of heavy pack ice although India Bay was clear. Closing of summer camp started from 26th Feb 03. First joint convoy started from Maitri on 28th Feb 03. Hav L. R. Joshi developed facial paralysis and necessary medication provided.

MARCH 2003

Ship was moved to India Bay on 4th March 2003 and decanting of fuel started. Only 60 KL of fuel could be decanted till next morning and then weather deteriorated and Blizzard started. Blizzard stopped on 8th and decanting of fuel and discharge of cargo resumed. Summer camp closed on 12th March 2003 and most of the members reached ship. On 15th March 2003 all cargo operation completed. Same day ship Captain informed that the sea is freezing and he will soon move the out side the pack ice area. In view of this the scientific task was hurriedly completed. Ice Core shifted from DG Hanger site to ship deep freezer and all team members and return cargo reached to ship by 17th March 2003.

Return Voyage

After winding of summer task the permission was obtained from NCAOR for return voyage and ship started return voyage in early hours of 18th March 2003. Ship crossed Antarctic Circle on 19th March and encounter rough weather with heavy rolling and pitching. On 20th March 2003 night about 4 meters of water reported in lower deck Hatch No. 3 of the ship and emergency sounded. Water pumped out and all expedition material found safe.

On 24th March 2003 at about 43.7 S / 16.7 E ship captain informed that as per ship owners instruction ship will be stopped outside the territorial waters of South Africa till further instruction because of non payment of dues by charter (Department of Ocean Development, Government of India). The NCAOR and DOD was informed about the situation. The ship crossed 40 degree south latitude on 25th March at 0700 Hrs UTC. As informed earlier Master of the ship stopped the ship engine same day at 38.4 S / 17.6 E at 1500 Hrs UTC and refused to move further till orders from ship owners. The matter was reported to DOD and NCAOR immediately.

The unrest among expedition members started rising. A meeting of all expedition members was called and situation explained. A complaint was lodged with the Master of ship about violation of Ship Carter Party agreement and Human Rights. The matter was reported to all concern in India. After negotiation, an agreement was reached between GOI and ship owners and ship started it voyage on 26th evening. Ship reached Pilot Point at Cape Town Port on 27th March after noon. In the after noon when all members were ready to disembark the ship the Master of ship informed that he has been instructed not to berth at Cape Town till all dues are

cleared but he offered assistance in shifting the team members and their luggage to smaller boats if they are arranged by team.

An emergency meeting of expedition members was called and situation explained. The tamper of expedition members was rising and was going beyond control. The situation was discussed with Sh. Bhaskar Rao and he arranged three boats for shifting of members. With the assistance of ship crew all members were shifted to boats along with their baggage with the help of rope ladders and crane bucket. Team arrived in the Hotel Rosebank at Cape Town at midnight and flown to Johannesburg on 29th March early morning. After a night halt at Johannesburg the team flew by flight SA-276, 30th March 2003 for Mumbai and arrived there by midnight. Thereafter team members dispersed to their respective place of postings.

Acknowledgements

I am thankful to Government of India and Department of Ocean Development, for giving me an opportunity to lead a prestigious expedition and represent my country in the continent of uncertainty that is Antarctica. We are thankful to Prof. Murli Manohar Joshi, Minister of Science and Technology & Ocean Development, Government of India and Dr Harsh K. Gupta, Secretary, DOD for their constant encouragement. We are thankful to Dr P. C. Pandey, Centre Director, Sri T. V. P. Bhasakar Rao, Director Logistics, Dr N. Khare Programme Manager (Science) and all other staff members of NCAOR who took care of our personal problems at office and home front and kept our morale always high to give best of us in achieving our targets.

Help rendered by Captain H.Gerbode, Master of M.V.Magdalena and his officers and crew for efficiently assisting us in cargo handling, helicopter operation and in scientific programme is greatly acknowledged. We record our sincere appreciation to Pilots and Engineers from Helicopters (NZ) Limited, New Zealand for displaying great skill, courage and patience in flying out men and material and also helping in cargo handling and rendering all help when ever needed.

I record my appreciation to all my scientific and logistic colleagues, who have rendered helping hand in loading/unloading operations in their spare time. I record my personal appreciation for the outstanding contribution from my Deputy Leaders and Summer Camp Commanders who made my task easy to setup summer camp and successfully completing the summer programmes.

Since the time of departing from Goa we have been receiving messages and greetings from well-wishers, families and friends. These messages were always a source of inspiration and kept our morale high to perform our task efficiently and we have no words to express our gratitude's. My sincere thanks to all the family members for their courage, fortitude and patience shown in handling the domestic problems which was the main criteria to keep the morale of the expedition members always high. I am grateful and special thanks are due to those who took care of our personal problems at office and home front without that our stay here could have been miserable.

The highly motivated and self-disciplined XXIIAE team was a fine example of coordination, cohesion and teamwork of high standard. Dedication, devotion, zeal, sincerity, relentless and feeling of responsibility by each and every member of the expedition team for performing their work was the secret of success of our expedition. I am thankful to all of them and I owe them full credit for achieving all success in completion of assigned tasks and coming out with flying colors despite of serious constrains.

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