LOGISTIC TASKS PERFORMED

A. SEA TRANSPORT

A.1. Chartered ice-strengthened ship MV THULELAND. owned by M/s BROSTROMS REDERI AB S—40330 Goteborg, Sweden, (BROSTROMS SINGAORE PTE LTD. 51 ANSON ROAD, HEX. 03-53 ANSUN CENTRE, SINGAPORE 0207).

Dimension & Particulars		
Length, overall	-	185.90 m
Breadth Moulded	-	26.50 m
Depth Moulded	-	15.50 m
Draught (SSW)	-	11.04 m
Freeboard	-	4.49 m
Displacement (Metric ton)	-	41.58
Dead weight (Metric ton)	-	31.90
Gross Tonnage	-	21,128.62
Net Tonnage	-	13,337.56
Cruising speed (Maximum)	-	16knots/hr

Main Engine

Turbocharged, solid injection diesel engine, 7 cylinders, maximum cont. rating 11-180 KW brake (15.20 BHP metric) at 139 RPM, cont. service rating KW brake (13.30 BHP Metric) at 130 RPM.

Auxiliary Engine

3 single and 1 twin or electro-hydraulic type and heavy duty type. SWL 20 tonnes. Maximum working

radius 26 m. Hoisting speed at full load 26m/min, electro-hydraulic provision cranes of 5 ton capacity each.

Bow Thruster:

1000 HP Thrust approximately 11,50 Kg.

Mooring equipment:

2 combined windlasses and mooring winches and 4 mooring winches of electro-hydraulic self tensioning type. Each 12 tonnes pull.

Navigation equipment:

2 radars with anti-collision system. Omega navigator. 2 LORAN receivers, DECCA navigator, 2 gyrocompasses, 2 echosounders with separate trans-receivers.

Ship's complement :

22 (10 officers + 12 crew)

Total days of cruising were 57 ± 3 and total distance to and fro covered was approximately 10,875 nautical miles or about 20,120 line kms.

B. AIR TRANSPORT

B.1. Indian Navy & Indian Air Force

B.1.a type and number of Helicopters used :

Chetak—Indian Navy	2
HIMA (MI-8)—Indian Air Force	2

Tasks—logistic & scientific

- Support in geological,' atmospheric and limnological programmes.

Total number of flying days available	44

B.1.b Performance

B.1.b.i Indian Navy

Number of days of flying	41
Total hours of flying	228.25
Total number of sorties	245
Number of days of flying	41
Total number of personsferried	665
Total cargo transported (kg)	17,8000

Breakdown of flying tasks by Chetaks is as follows:

1.	Wolthat-Petermen-Humpolt Gruper Massif	51.55	39
2.	Ice Reconnaissance	20.25	10
3.	Novolazarevskaya	16.50	17
4.	Aitkin Nuclei Measurement	6.55	5
5.	Cargo Sling	5.55	**5**
6.	Russian Bay Reconnaissance	5.05	**5**

7.	Check Flight	1.20	4
8.	Photo Recee/Personnel and cargo transfer to various camps.	120.00	150

B.1.b.ii Indian Air Force

Number of days of flying	41
Total hours of flying	138. 35
Total number of sorties	295
Total number of persons ferried	1,112
Total cargo transported (kg)	171.700

Breakdown of flying tasks by HIMA (MI-8) is as follows.

	Hours	Sorties
1. Dakshin Gangotri camp	50.00	154
2. Maitn*	55.45	102
3. Wolthat—Petermen	25.40	31
4. Humboldt	2.40	2
5. Gruper	1.30	2
6. Air tests	3.00	4

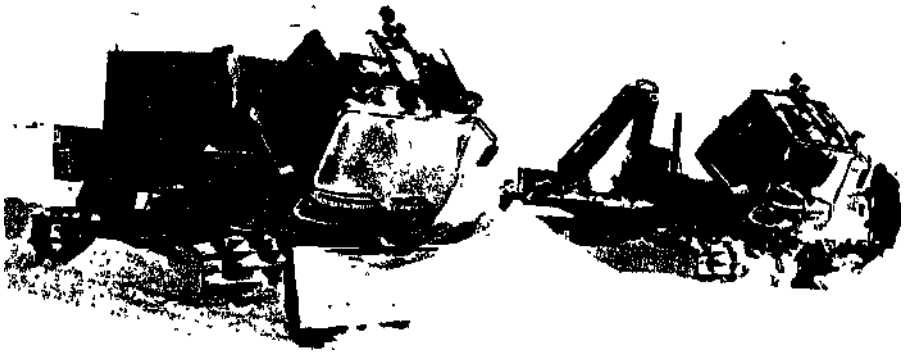
* (hours include flying to Russian airfield as also to First and second expedition camp sites)

C. SNOW VEHICLE TRANSPORT

C.1. Snow vehicles, mainly Piston Bulley and Snow Cats were used for transporting heavy and bulky stores from the seashelf to Dakshin Gangotri station campus. The details are as follows :

Date	Number of vehicles	Load (kg)
09.2.87	5 (3 Piston Bulley + 2 snow cats)	9000
10.2.87	4 (2 Piston Bultey + 2 snow cats)	14000'
11.2.87	3 Piston Bulley	24000
12.2.87	3 Piston Bulley	56000*
13.2.87	4 Piston Bulley	32000
14.2.87	4 Piston Bulley	26000

(* trips of Piston Bulley)



SNOW VEHICLES IN ACTION

1

D. INFRASTRUCTURE DEVELOPMENT & MAINTENANCE

D.1. Defence Research & Development Organisation

D.1.a Habitat

4 containerized accommodation units—3 at Petermen Range field camp sites and 1 at Maitri field camp site—brought as knock-down shelters, were erected, tested and made available as part of living quarters. They stood well the test of 80 km/hr wind speed and were found to be comfortable even at -18°C temperature.

D.1.b Prefabricated Sanitary Cubicles

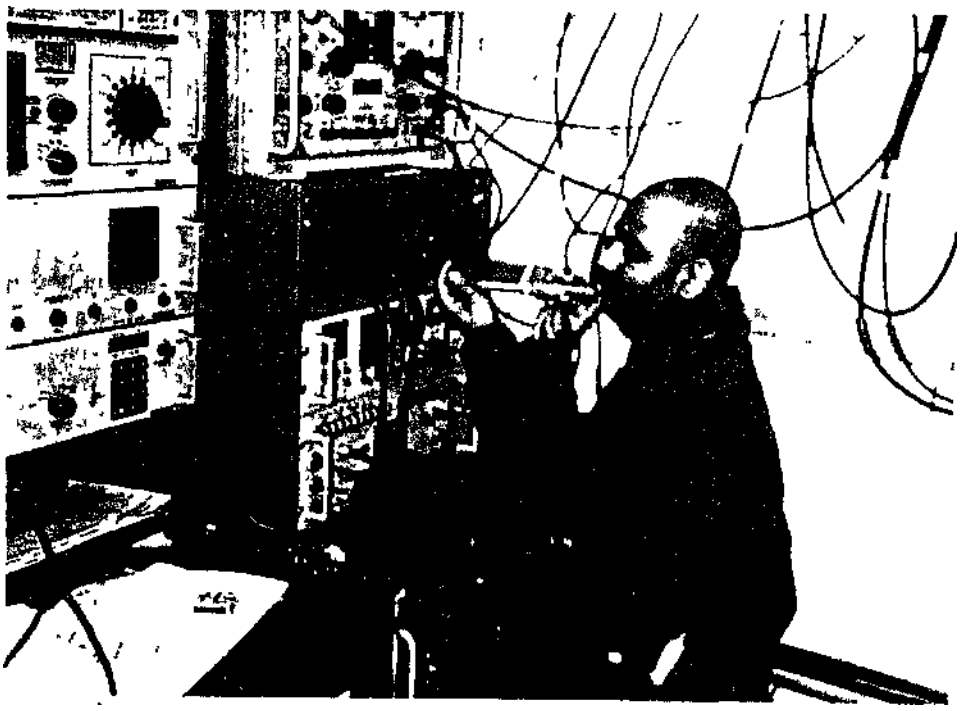
4 at Dakshin Gangotri station and 1 each at Maitri and Petermen Range field camp were erected, tested and made available for all season- use.

D.1.C SATCOM Cabin

Size 2.91m (L) X 2.59m (B) X 1.6m (H) consisting of marine plywood panels and hardware for joining was added as an extension to the existing SATCOM cabin at DG station.

D.1.d Dobson Hut consisting of following components:

- insulated and furnished container—20ft (L) X8ft (B) X 8 ft 6 in (H) complete with electrical fixtures.



TELECOMMUNICATION FROM DAKSHIN GANGOTRI STATION

- container frame of. size 20ft x 8ft x 8ft 6 in as a support system
- staircase unit
- timber grillage for foundation support
- SWR gyre rope assemblies for anchoring
- electric heaters and accessories

was erected at DG station campus. It is meant for facilitating the "Ozone Hole" scientific programme.

D.1.e Helipad at Maitri field camp site :

This was an unscheduled task. One helipad (10m x 10m) of aluminium alloy planks supported on wooden batons was fabricated, anchored and made operational by using stores left by earlier expeditions.

D.2 Army **Building & Engineering Personnel/Electrical & mechanical Engineers Corps.**

MOTHER ADELIE WITH AN EGG