

Report on Oceanographic Cruise of O. R. V. Sagar Kanya

CRUISE No. 95

1st to 25th September, 1994



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REPORT ON
95TH OCEANOGRAPHIC CRUISE OF
C.R.V. SAGAR KANYA

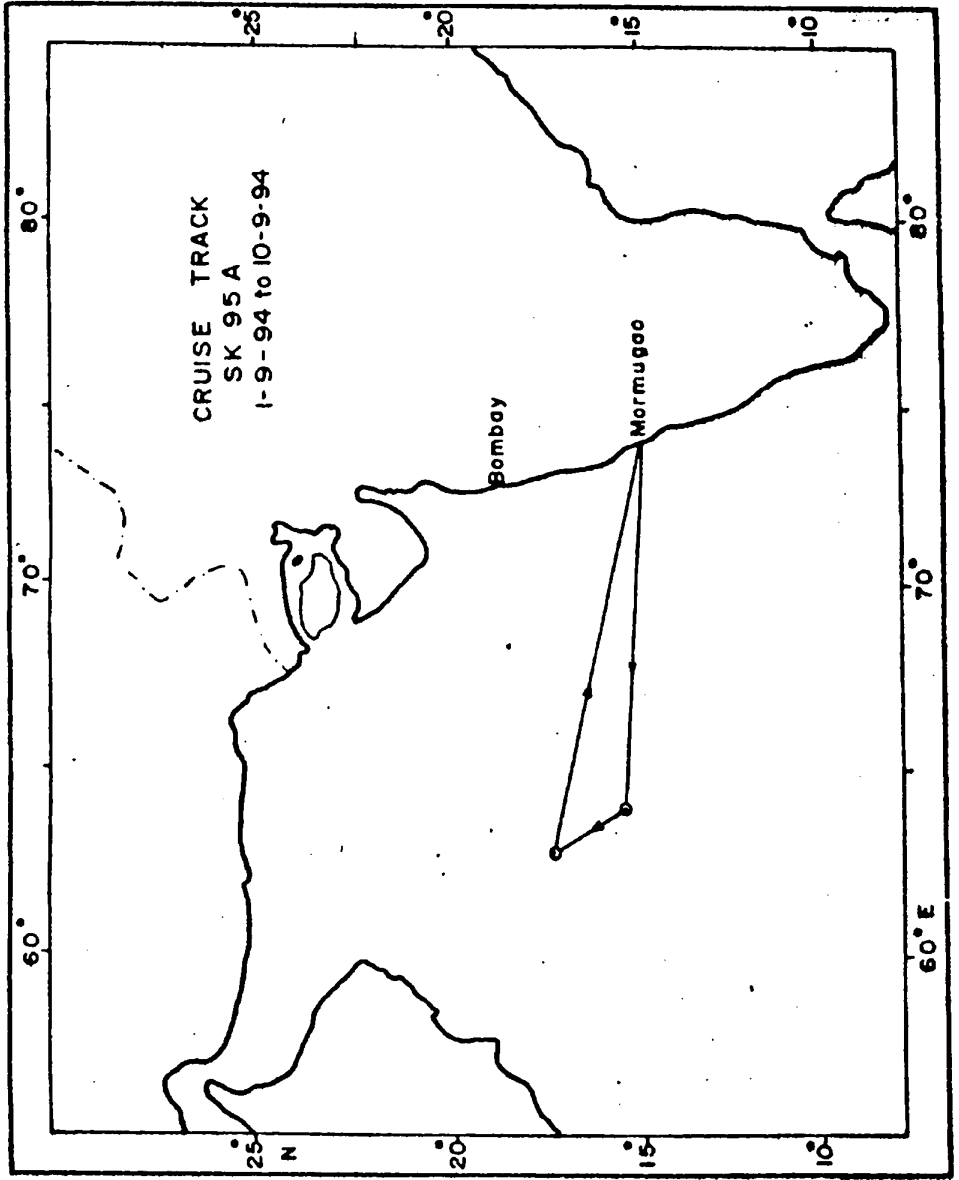
(1st to 25th September, 1994)

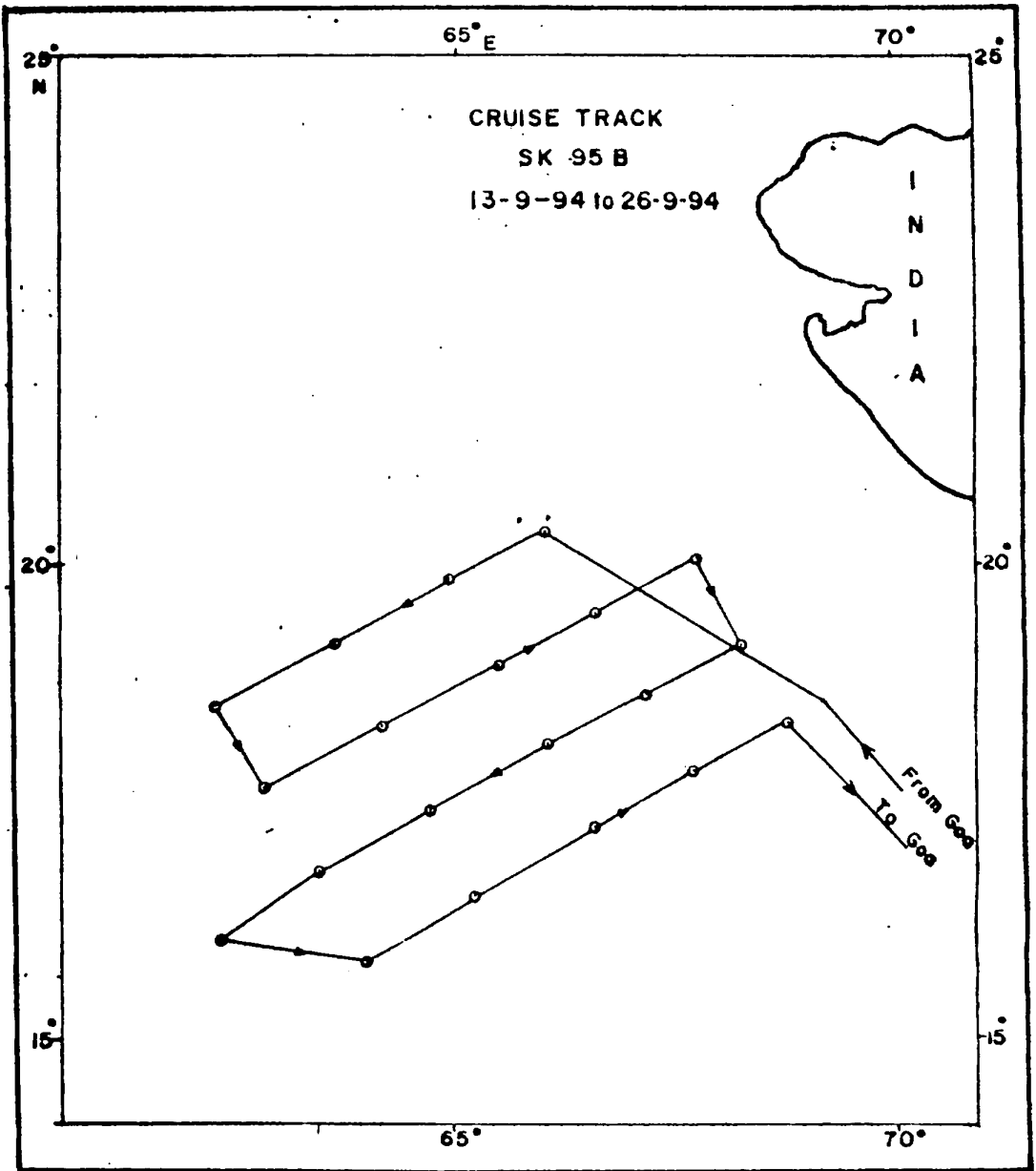
REPORT ON THE 95TH OCEANOGRAPHIC CRUISE OF

O.R.V. SAGAR KANYA

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2. CRUISE SUMMARY

This cruise was organised to collect the sea truth required for validation of satellite data under the National Ocean Remote Sensing Programme and to collect the data required for studying the Persian Gulf and other high salinity water masses in the Arabian Sea.

The first phase of the cruise commenced on 1.9.94 from Mormugao Harbour with participants from NIO and the Indian Navy. A total of 31 observations were carried out in the Central Arabian Sea and the ship covered a distance of 1371 nm. The cruise ended on 10.9.94 at Mormugao Harbour.

The second phase of the cruise started from Mormugao Harbour on 13.9.94 with 5 participants from NIO and ended at the same port on 25.9.94. During the cruise, a total of 36 observations were made and a distance of 2425 nm were covered in the northern Arabian Sea.

3. INTRODUCTION

The cruise was organized to collect the seatruth required for validation of satellite data under the National Ocean Remote Sensing Programme and to collect the data required for studying the Persian Gulf and other high salinity water masses in the Arabian Sea. The seatruth included sea surface temperature, surface meteorological parameters, data from drifting buoys and atmospheric parameters from radiosonde data. Seatruth collection being a national programme, invitations were sent to all participating agencies including NRSA (Hyderabad), ORSAC (Bhubaneswar), SAC (Ahmedabad), DNOM (New Delhi), IITM (Pune), IMD (New Delhi) and IOM (Madras) to depute their participants for the cruise. Only DNOM and IMD responded by nominating their teams for the cruise.

There was a query from Naval Headquarters through Ministry of External Affairs about the cruise tracks. This unfortunately led to a delay in obtaining passports of the scientists from IMD, and the cruise had to be divided into two phases to give IMD participants more time for this formality. Phase 1 consisted of components from NIC and Indian Navy, while phase 2 was expected to include the team from IMD. During phase 1 of the cruise which started on 1-9-1994, seatruth collection on surface meteorological parameters and deployment of drifting buoys was

carried out. It was completed on 10th September, 1994 and the ship returned to Mormugao to begin the second phase. Since the problems of the cruise tracks took longer than expected, the IMD participants were still without requisite documents, and it was finally decided to continue phase 2 without their participation.

4. PARTICIPANTS

a) Scientific Component :

Phase - 1

P.V. Sathe)	- Chief Scientist
G. Nampoothiri)	
B. Subramanyam)	National Institute of
H. Harikrishnan)	Oceanography, Goa.
M.M. Subramaniam)	
U.B. Pramod Kumar)	Shipboard trainees
Lt. A.K. Paluskar)	
L.C. Gurjar)	Indian Navy

Phase - 2

P.V. Sathe)	- Chief Scientist
P.M. Muraleedharan)	
G. Nampoothiri)	National Institute of
R. Vaithianathan)	Oceanography, Goa.
M.M. Subramaniam)	Shipboard trainee

b) Ship's Complement :

Phase - 1

Captain C. Pal	- Master
A.P. Majumdar	- Chief Officer
C.P. Girilal	- Addl. Chief Officer
V.G. Topale	- Second Officer
K.K. Datta	- Chief Engineer
S.K. Pal	- Second Engineer
T.J. Tojan	- Radio Officer
Dr. D.K. Tyagi	- Medical Officer
C.C. Pinto	- Purser
V.A. Fernandes	- Catering Officer

Phase - 2

Captain C. Pal	- Master
C.P. Girilal	- Chief Officer
V.G. Topale	- Second Officer
K.K. Datta	- Chief Engineer
S.K. Pal	- Second Engineer
T.J. Tojan	- Radio Officer
Dr. D.K. Tyagi	- Medical Officer
C.C. Pinto	- Purser
V.A. Fernandes	- Catering Officer

5. CRUISE DETAILS

Phase-1

The ship sailed from Mormugao on 1st September, 1994 with 8 participants from NIO and Indian Navy. The seatruth collection on surface meteorological parameters were carried out 4 times a day at 05.30, 11.30, 17.30 and 23.30 hrs. A total of 31 observations were made during the cruise. Seatruth collection included observations on SST, wind speed, wind direction, air temperature (dry-bulb and wet-bulb), atmospheric pressure and other navigational details such as ship speed and ship heading. The weather was rough during the cruise with sea state of 4 and above. This affected the speed of the ship specially during the onward track with winds blowing from opposite direction.

The ship arrived at the first location on 5th September in the central Arabian Sea where Metocean (MOCE) drifting buoy No.15702 was successfully deployed (at latitude 15:29.08 deg.N and longitude 63:59:59 deg. E). It was manually released on the starboard side of the ship. The buoy had already started communication through ARGOS network before its deployment. This was confirmed through radio message received from NIO earlier during this cruise. The weather continued to be rough with observed wind speed varying between 20 and 30 knots.

Second drifting buoy (Metocean TOGZ standard) No.11356 was deployed on 6th September at 16.45 hrs. at latitude 17:30.23 deg.N

and longitude 61:59.787 deg. E with the help of a crane on the starboard side of the ship. It established communication with NIO immediately on deployment. Portable CTD operation was not possible because of heavy swells reaching upto the working platform. The use of regular CTD would, however, have been possible. A total distance of 1371 nautical miles was covered during the cruise.

The cruise ended on 10th September, 1994 when the ship entered Mormugao Harbour at 7.30 a.m.

Phase - 2

The second phase of SAGAR KANYA cruise 95 started from Mormugao Port on 13.9.94, with 5 participants from NIO. Seatruth collection including surface meteorological parameters was carried out 4 times a day. A total of 36 observations were made during the cruise.

Hydrographic stations started on 16-9-1994 where portable CTD, XBT and wave recorder were operated. The instruments worked satisfactorily. A total of 19 hydrographic stations were covered during the cruise.

CTD winch was tested for 1000 metres on 18-9-1994. It was found that the brakes were not holding the drum firmly after releasing 500 metres of cable and cable continued to slip down due to its own weight even after stopping the winch.

A WOCE drifting buoy No. 15705 was successfully deployed during the cruise at 16 deg. (N) and 62.31 deg. (E) on 21-9-1994 at 2045 (IST) hrs. manually from the starboard side of the ship. The signals transmitted by the buoy were received at NIO through ARGOS network both before and after deployment.

The sea was generally calm during the cruise. The cruise ended at Mormugao harbour on 25-9-1994 after covering a distance of 2425 nautical miles.

6. PERFORMANCE OF ONBOARD EQUIPMENTS

The seatruth equipments performed well during the cruise. One of the HCL 386 PCs in the port lab. which is normally used with CTD operations hanged from time to time during use. It was not possible to reboot the PC every time during the hangups. The PC needs urgent repairs. The CTD winch was unusable.

7. LOSS REPORT

No equipment was lost during the cruise.

8. ACKNOWLEDGEMENTS

The participants are thankful to the Department of Ocean Development, New Delhi, for sponsoring the seatruth collection programme and the Master, O.R.V. SAGAR KANYA and his officers for cooperation extended during the cruise.

**Annex-1
SK-95 A**

Station locations and schedule for seatruth collection
including surface met parameters

Sr No	Date (1994)	Time IST	Lat(N) (degrees)	Lon(E)
1	2/9	1730	15.26	71.18
2	2/9	2030	15.26	71.01
3	3/9	0545	15.29	70.02
4	3/9	0900	15.30	69.45
5	3/9	1150	15.29	69.28
6	3/9	1730	15.30	68.51
7	3/9	2055	15.30	68.33
8	3/9	2230	15.30	68.20
9	4/9	0530	15.30	67.45
10	4/9	1130	15.30	67.09
11	4/9	1730	15.30	66.34
12	4/9	2300	15.30	66.10
13	5/9	0530	15.30	65.39
14	5/9	1130	15.29	64.48
15	5/9	1730	15.29	64.10
16	5/9	2330	15.50	63.40
17	6/9	0530	16.24	63.05
18	6/9	1130	16.57	62.30
19	6/9	1730	17.29	62.07
20	6/9	2330	17.18	62.58
21	7/9	0530	17.07	64.70
22	7/9	1130	16.56	65.01
23	7/9	1730	16.44	66.00
24	7/9	2330	16.34	66.51
25	8/9	0530	16.27	67.29
26	8/9	1130	16.19	68.11
27	8/9	1730	16.12	68.53
28	8/9	2330	16.02	69.44
29	9/9	0530	15.49	70.50
30	9/9	1130	15.38	71.49
31	9/9	1730	15.27	72.50

**Annex-2
SK-95 A**

Buoy deployment schedule

Buoy make	Buoy type	no	Date (1994)	Time (IST)	Latitude deg north	Longitude deg east
METOCEAN	WOCE	15702	5/9	1930	15:29	64:00
METOCEAN	TOGA	11356	6/9	1645	17:30	62:00

Annex-3

SK-95 B

Station locations and schedule for seatruth collection
including surface met parameters

Sr No	Date (1994)	Time IST	Lat(N) (degrees)	Lon(E)
1	14/9	1800	17.02	71.28
2	14/9	2315	17.31	70.48
3	15/9	0600	18.12	69.50
4	15/9	1200	18.37	69.01
5	15/9	1800	19.11	68.20
6	15/9	2315	19.39	67.40
7	16/9	0615	20.15	66.40
8	16/9	1210	20.25	66.02
9	16/9	1800	20.00	65.12
10	16/9	2315	19.34	64.32
11	17/9	0535	19.07	65.37
12	17/9	1200	18.38	62.49
13	17/9	1800	18.09	62.26
14	17/9	2300	17.23	62.47
15	18/9	0610	17.52	63.48
16	18/9	1205	18.17	64.37
17	18/9	1800	18.50	65.25
18	18/9	2300	19.03	65.56
19	19/9	0415	19.30	66.44
20	19/9	1200	20.06	67.51
21	19/9	2000	19.24	68.40
22	19/9	2330	19.13	68.18
23	20/9	0600	18.41	67.23
24	20/9	1200	18.21	66.34
25	20/9	1550	18.01	66.06
26	20/9	2315	17.30	65.10
27	21/9	0545	17.04	64.21
28	21/9	1225	16.36	63.27
29	21/9	1800	16.16	62.49
30	21/9	2320	15.49	62.12
31	22/9	0600	15.36	64.01
32	22/9	1200	16.00	65.53
33	22/9	1800	16.22	65.34
34	22/9	2315	16.48	66.21
35	23/9	1230	17.46	68.14
36	23/9	1800	18.13	69.01

**Annex-4
SK-95 B**

Station locations and schedule for hydrographic stations

Sr No	Date (1994)	Time IST	Lat(N) (degrees)	Lon(E)	Instruments operated
1	16/9	0930	20.30	66.13	CTD XBT WR
2	16/9	1955	19.46	64.56	CTD XBT WR
3	17/9	0535	19.07	63.37	CTD XBT WR
4	17/9	1545	18.25	62.18	CTD XBT WR
5	17/9	2300	17.23	62.47	CTD XBT WR
6	18/9	0830	18.05	64.09	CTD XBT WR
7	18/9	1800	18.50	65.25	CTD XBT WR
8	19/9	0415	19.30	66.44	CTD WR
9	19/9	1310	19.00	66.13	CTD WR
10	19/9	2005	19.24	68.40	CTD WR
11	20/9	0605	18.41	67.23	CTD WR
12	20/9	1550	18.01	66.06	CTD WR
13	21/9	0210	17.18	64.48	CTD WR
14	21/9	1225	16.36	63.27	CTD WR
15	22/9	0600	15.36	64.01	CTD WR
16	22/9	1520	16.17	65.23	CTD WR
17	23/9	0125	16.59	66.40	CTD WR
18	23/9	1055	17.42	68.02	CTD WR
19	23/9	2000	18.24	69.18	CTD WR

CTD means portable CTD and WR means wave recorder

**Annex-5
SK-95 B**

Buoy deployment schedule

Buoy make	Buoy type	no	Date (1994)	Time (IST)	Latitude deg north	Longitude deg east
METOCEAN	WOCE	15705	21/9	2045	16:00	62:31