

**INDONESIAN THROUGHFLOW MONITORING
RECOVERY OF MAKASSAR MOORING
July 30 – August 4, 2011**

Cruise Report

by

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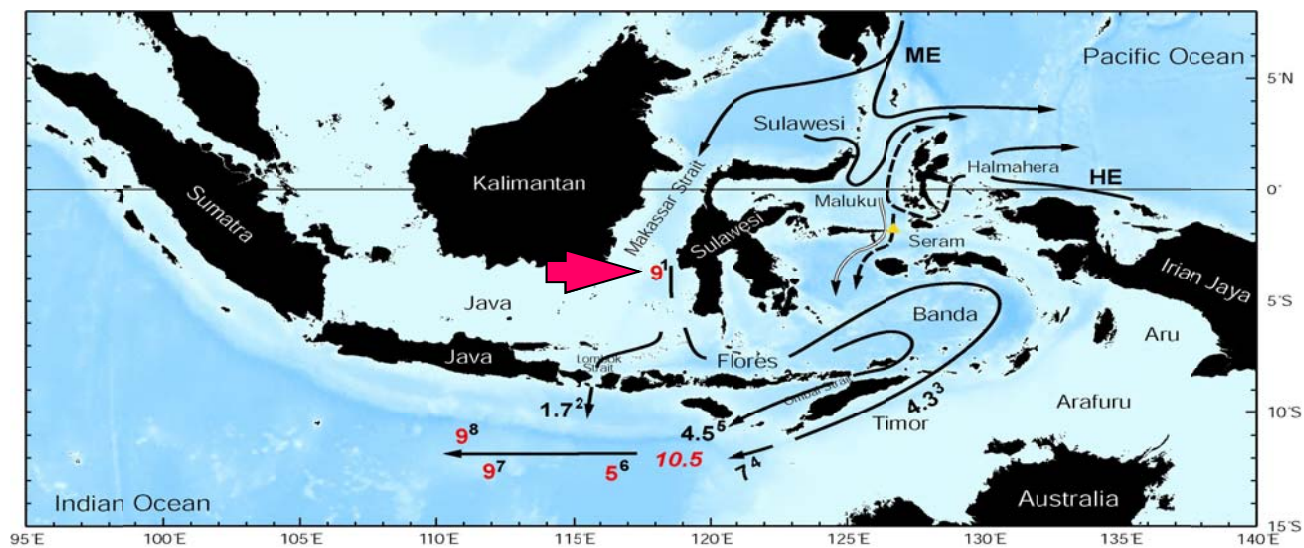


Figure 1. Indonesian throughflow-monitoring mooring at Makassar Strait.

1. INTRODUCTION

It is well known that Indonesian Throughflow (ITF) plays an important role in global ocean circulation and climate. Indonesian seas provide the only connection between tropical/subtropical Pacific into Indian Ocean, which Makassar Strait the main pathway of the ITF. Single mooring has been deployed in the Makassar Strait since November 2006 as continuation of the INSTANT program and turned around recovery and redeployment in July 2009. We plan to recover and redeploy it again for the next two year and beyond.

Scientific Objective: The Makassar ITF monitoring objective is to directly measure the ITF volume transport and its variability in the Makassar Strait, the main entrance of ITF from the Pacific Ocean. The Makassar ITF monitoring program is a joint collaborative effort between Lamont Doherty Earth Observatory of Columbia University, sponsored by NOAA-OCO, and the Agency for Marine and Fisheries Research (BRKP), Department of Marine Affairs and Fisheries of Government of Indonesia.

Cruise Objective: The cruise objective is to recover the Makassar ITF mooring using R/V Baruna Jaya VIII to recover the data, refurbish and redeploy it for the next two years. To have a bathymetric, CTD and underway ADCP survey in the vicinity of the mooring site, an east-west section of the Makassar Strait The voyage starts from Makassar Port and in the Makassar Port.

R/V Baruna Jaya VIII was built at Norway shipyard in 1990. The ship is managed by Indonesian Science Institute (LIPI) .

2. DETAILED ACTIVITY

Tuesday July 26, 2011

Bruce Huber arrives at Jakarta airport at 13:30pm and picks up by Daulat (BRKP). Both of them directly travel to Makassar using Garuda Airline.

Wednesday July 27 to Friday 29, 2011

Daulat applies the Dasuskim (special temporary stay) for Bruce Huber. It seems he has problem but finally on Friday afternoon the immigration authority issue Dasuskim for Bruce until August 7, 2011.

Saturday July 30, 2011

All members of team from BRKP and security officer as well as myself travel from Jakarta to Makassar. All on board R/V Baruna Jaya VIII in July 30, 2011 evening. Rameyo Adi (head of the BRKP foreign relation), Troyono and Dicky (logistic) also arrive in Makassar who plan to launch the cruise on July 31, 2011 morning. We got bad latest news: our cargo has not arrived in Makassar. At 11pm, Rameyo and I decided to have a meeting on the ship at 7am tomorrow with LIPI to discuss latest news. Bruce and Daulat stay in the Hotel.

Sunday July 31, 2011

At 7am we have a limited meeting (Rameyo Adi, Dwi Susanto, Dicky, Triyono, Indra/Captain BJ 8 and Irham Danil /former Captain) to discuss about the latest news on cargo and its impacts

on cruise schedule. The constraints are: Baruna Jaya VII limit, Bruce immigration, and funding resources. Our contract limit is August 3 evening. Bruce has to leave Makassar no later than on August 6 late afternoon and leave Jakarta on August 7 morning.

Rameyo, Dicky and Triyono leave the ship at 09:00am because BJ VIII has to leave the port and wait outside the port. Conflicting information from the agent in term of when the cargo ship will arrive in Makassar. We received a copy a letter from the agent that the cargo ship will arrive on July 31 midnight. Hence, we will wait. A general meeting at BJ VIII and I give presentation on the objective as well as cruise plan. After dinner Bruce gives talk on the mooring configuration and design.

Monday, August 1, 2011

Ramadhan/Fasting month start. No news on the cargo ship. We use AIS (Automatic Identification System) at R/V BJ VIII to find any ship nearby Makassar port. No luck on our cargo ship 'Alexa' position. Press to Erika (our shipment agent) to get information on the cargo ship. I got information from loading agent of Alexa ship, it will arrive on August 3 at 8am. I ask Erika to get confirmation from Jakarta agent who handle the cargo ship and request/demand a formal letter guarantee the exact date and time of arrival or cargo which is on Alexa's ship, so we could make a decision whether we should wait or start the cruise today without the cargo. After consult with Rameyo and Bruce as well as security officer, I decided to start the cruise without the cargo. Ship starts to move at 20:00pm to Mak mooring. The speed could reach 11knots, however, after reach the open ocean only 7.7knots with northward winds up to 11.2 m/s and southward current 1.2m/s.

Tuesday, August 2, 2011

High northward winds generate high seas with strong southward current at southern Labani Channel. About halfway of the channel, the winds die down but the southward current even stronger so the ship speed could only reach 7.5knots. Arrive on mooring site at 14:30pm, and start drifting test for 10 minutes follow by release attempt at 14:55pm. The top ADCP pop-up 5 minutes later follow by second ADCP a minute later. At 15:05 benthos shows up and BJ VIII send rubber boat to the top ADCP with rope and able to attach it at 15:16. Recovery process on the deck starts at 15:30pm and end it at 16:50pm.

CTD#1 station at the current position with some water sample for nutrient and sediment contents. CTD#2 station at the western most channel and start underway ADCP cross section with CTD#3 and CTD#4. CTD#5 has been abandon due to time constraint.

Wednesday, August 3, 2011

I am interacting with Arnold from 23:45pm to 01:00am. I informed about our successful recovery and a possibility to have quick redeployment with some additional funding but we still have an uncertainty on the cargo.

At 01:00am we finish the ADCP across the strait and CTD#4 and the ship heading to the Makassar Port. At 3:45am I interact with Arnold, Danil and Rameyo Adi whether we should have a quick redeployment. Because uncertainty on the cargo ship (originally the cargo will arrive on August 3rd at 8am, then 15:00pm with no guarantee of port position and how long to unload the cargo), we decided to finish the cruise on August 4, 2011.

Remove all batteries from the long-ranger ADCPs and acoustic releases and keep all our mooring instruments on board Baruna Jaya VIII to Jakarta.

R/V Baruna Jaya VIII arrive at the Makassar port, waiting for permission to enter the port. We enter Hatta container port at 20:30pm.

Thursday, August 4, 2011

All cruise team members disembark from the R/V Baruna Jaya at 06:00am for the airport to return to Jakarta.

Table #1: CTD Stations

Station	Latitude	Longitude	Water Depth	Max-CTD
CTD#1	2 54.196' S	118 27.362	2141m	2100m
CTD#2	2 52.098' S	118 20.070	802m	700m
CTD#3	2 52.089' S	118 36.161	1797m	1000m
CTD#4	2 52.039' S	118 44.327	1023m	900m

Note: pH sensor limited to 1000m, therefore CTD #3 only 1000m to have pH parameter.

Table#2: Personnel

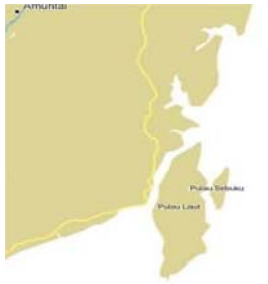
1	Dr. Dwi Susanto	Chief-Scientist/LDEO-USA
2	Bruce Huber	Chief technician/LDEO-USA
3	Selvienty Makarim	Co-chief BRKP
4	Lestrai Cendikia Dewi	Scientist BRKP
5	Fajar Yudi Prabowo	Scientist BRKP
6	Farid Hidayat	Scientist BRKP
7	Teja Arief Wibawa	Sceintist BRKP
8	August Daulat	Technician BRKP
9	Riswan Hadan	Technician BRKP
10	Wahyu Hidayat	Technician BRKP
11	Irham Danil	P2O-LIPI
12	Priyadi DS	P2O-LIPI
13	Muhadjirin	P2O-LIPI
14	M. Hasanuddin	P2O-LIPI
15	Edi Kusmanto	P2O-LIPI
16	Praditya Avianto	P2O-LIPI
17	Edy Endro Tjahyo	P2O-LIPI

Security Officer: Mayor Laut (P) Didik Sucahyono

R/V Baruna Jaya VIII Crew:

1. Indra AS	N a k h o d a
2. Mega Prasastya Amijaya	Mualim I
3. Bangun Aritonang	Mualim II
4. M Afandi Juluhun	Mualim III
5. Narto, Amd.	K e r a n i
6. Dhani Setyawan, S.T.	Perwira Instrumentasi
7. Deni Purnomo, A.Md.	Kepala Kamar Mesin
8. Sudirman, A.Md.	Masinis I
9. Mudi Setiabudi	Masinis II
10. Pariury Jonathan	Masinis III
11. Reiza Dyan F S A.md	Electrciant
12. Jefri Juliansyah	S e r a n g
13. Soegiman	Juru Mudi I
14. Heru Priyambodo	Juru Mudi II
15. Haendy Busman	Juru Mudi III
16. Fadil	Mandor Kamar Mesin
17. Hari Pratomo, A.Md.	Juru Minyak I
18. Rendra Hadi Wibawa, ST	Juru Minyak II
19. Donny Priyo Utomo	Juru Minyak III
20. Maulana Yusuf	Chief Cook
21. Saefudin	Juru Masak I
22. Andang Mulyansah	Juru Masak II
23. Zaenuddin	Pramu Kapal I
24. Supardi	Pramu Kapal II

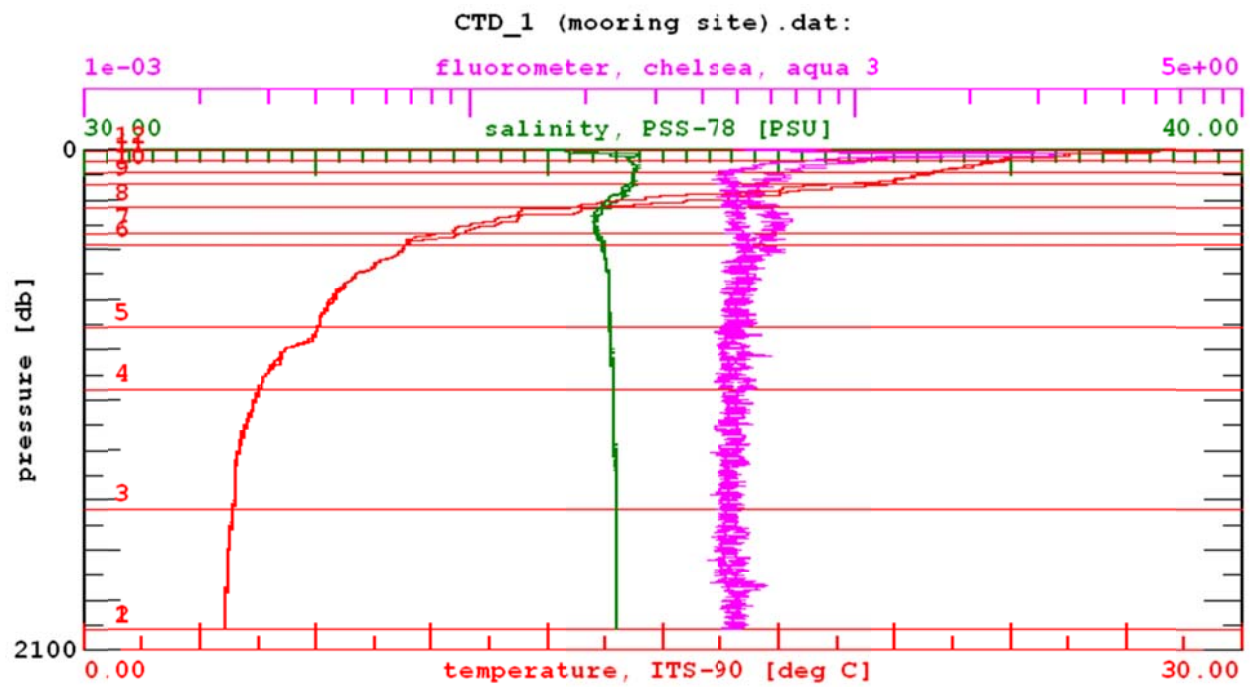
Appendices:**1. Cruise Track**



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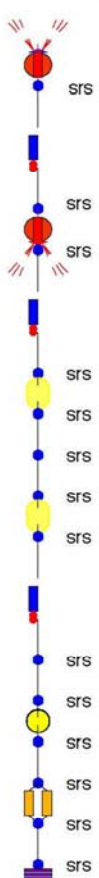


2. CTD Stations



3. Mooring Configuration

Makassar Monitoring Deployed 1 June 2009

depth	component	S/N		distance	length of shot	Time in
498 m	WHLR in 45" buoy	3770				15:16
510 m	Aquadopp	0976		10 m	1/4" wire 20 m shot	15:31
520 m	WH300 in 32" buoy	3483		10 m		15:33
763 m	Aquadopp	0973		240 m	1/4" wire 250 m shot	15:46
774 m	Benthos (6)			10 m		
				250 m	1/4" wire 250 m shot	
1530 m	Benthos (6)			500 m	1/4" wire 500 m shot	
1553 m	Aquadopp	1005		20 m	1/4" wire 85 m shot	16:29
				65 m		
2122 m	Benthos (4)			500 m	1/4" wire 500 m shot	
2127 m	8242 release(2)	31585 31586		6 m	strop	
2137 m	anchor 3 wheels 2600 lbs dry			2 x 6 m	strop	17:17

Target Position: 02 51.883'S 118 27.776'E

Target Depth: 2137 m

Date: 1 June 2009

Anchor Drop:

Time (L) 17:18

Time (Z) 09:18

Lat: 02 51.887'S

Lon: 118 27.773 (Garmin) Depth: 2147 m

02 51.890'S

118 27.776 (Ship dgps)

Top Float Down: Time (L) 17:25

Triangulated position:

02 52.034' S 118 27.854' E Depth 2133 m

4. Snapshots

