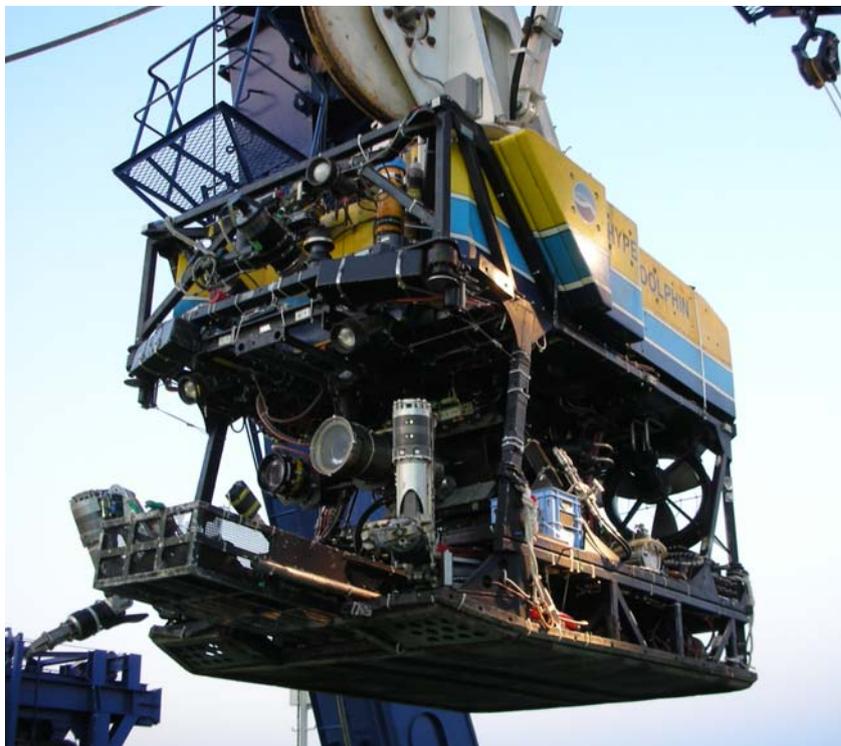


CRUISE REPORT

KY11-02 Leg4

“Hyper-Dolphin” & “Kaiyo”



February 2011

Earthquake and Tsunami Research Project
for Disaster Prevention

JAMSTEC

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1. Introduction

The present survey is carried out in order for promotion of more safety on the way of A-1 cable extension route by using ROV “Hyper-Dolphin”. On 29 December 2010 in KY10-15 cruise, “Hyper-Dolphin” was captured by something during the cable extension operation on the way of A-1 route (Figure 1). And we had to stop the cable extension operation for the first priority of safety. After finishing the KY10-15 cruise, we discussed how the route safety is confirmed to continue cable extension operation. As a result, we decided to carry out pre-survey by “Hyper-Dolphin” first. If nothing found during the pre-survey, we continue to do cable extension operation.

We planned to carry out survey on either 23 or 24 February from the location of cable drum deployment to the observatory A-1. After the dive, cable drum and deployed extension cable would be observed first, then “Hyper-Dolphin” proceeds toward the observatory A-1. If something would be found on the way or “Hyper-Dolphin” would be captured again, we would try to clear it.

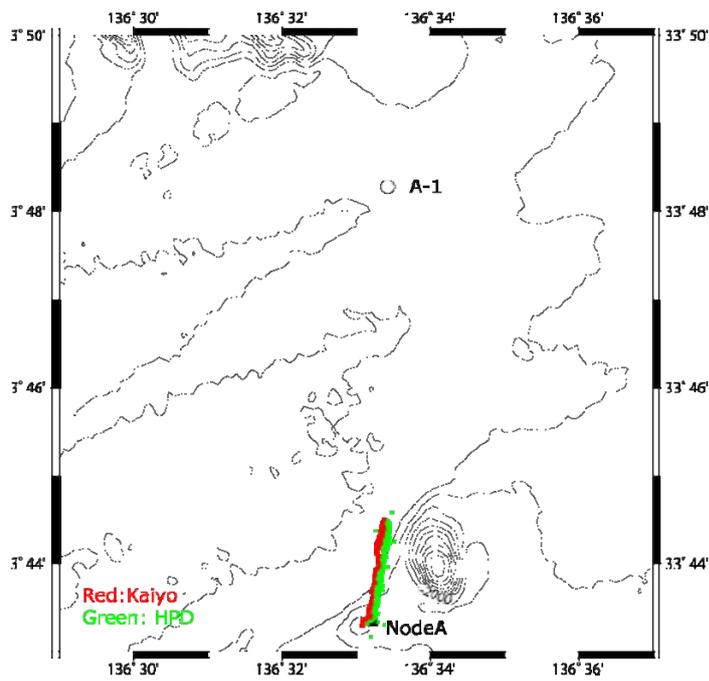


Figure 1 “Hyper-Dolphin” and “Kaiyo” tracks of A-1 route during the KY10-15 cruise

2. Schedule

Actual schedule of the KY11-02 Leg 4 cruise was listed in Table 1. Our cruise started from Okinawa to JAMSTEC via Kumano-nada and off Boso in order to carry out “Hyper-Dolphin” dive and optical cable’s free fall.

Table 1 Schedule of KY11-02 Leg4 cruise

Date	Area at noon	Operation	Remarks
20 February	Off Okinawa Is.	Departure	10:00 departed from 3-1 Berth Naha-Okinawa port
21 February	Nansei Is.	Shift to Kumano-nada	
22 February	Off Shikoku	Ditto	
23 February	Off Tanabe	Ditto	Evacuation due to bad weather , Seminar held
24 February	Off Shiono-misaki	Shift to Kumano-nada	7:00 departed
25 February	Kumano-nada A-1	“Hyper-Dolphin” dive	7:51 landing 15:18 taking off
26 February	Off Izu O-shima Is.	Shift to off Boso	Evacuation due to the bad weather during the day
27 February	Off Boso	Free Fall	Twice respectively till 4,500 meters and 3,000 meters
28 February		Arrive	9:30 arrived at JAMSTEC

3. "Hyper-Dolphin" Dive

Only one dive was carried out in the Kumano-nada area during the KY11-02 Leg4 cruise as scheduled. On 25 February, "Hyper-Dolphin" dive was carried out at A-1, DONET system. The purpose of the present dive was to confirm the current status of extension cable drum unexpected deployment during the KY10-15 cruise and safety on the way till the observatory A-1.

"Hyper-Dolphin" started to dive approximately 100 meters north from the location of the cable drum, and then approached to the drum. We observed the shaft and laid cable near the drum after landing nearby (Figure 2). We proceeded southward about 50 meters in order to observe the laid cable condition, and we confirmed that the cable was completely buried further 50 meters south from the drum.

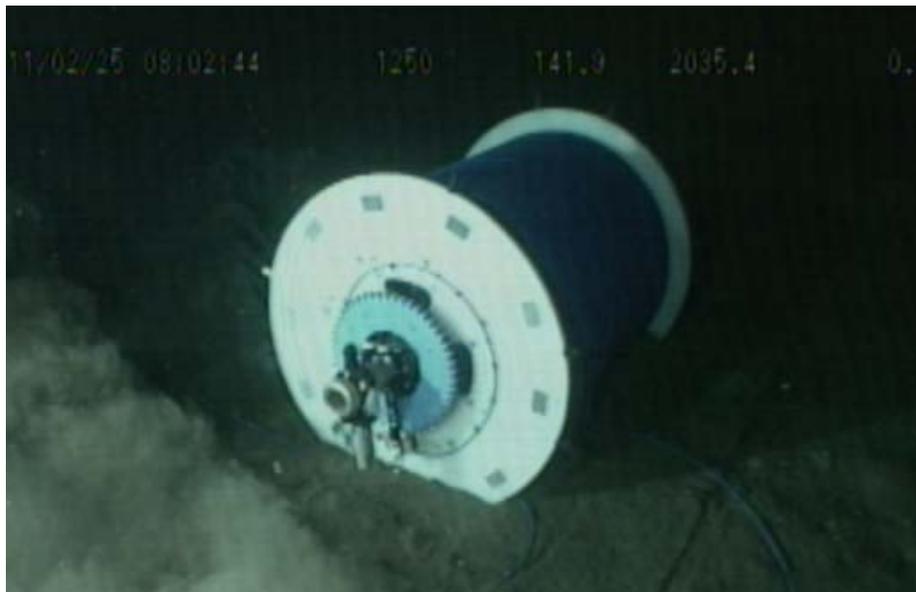


Figure 2 Cable drum deployed on the way A-1 extension route

Turning about 50 meters south from the drum, "Hyper-Dolphin" proceeded northward to the observatory A-1. On the way to the A-1 observatory, no obstacles and no happens to the ROV were detected. This is why route clearance was confirmed after the present dive.

After reaching the A-1 observatory, we observed the current status of the observatory in a few moments (Figure 3). We expect that it is possible to approach to the observatory because the ROV Homer (ID:10) shows good response and reflector sheet can be visible.

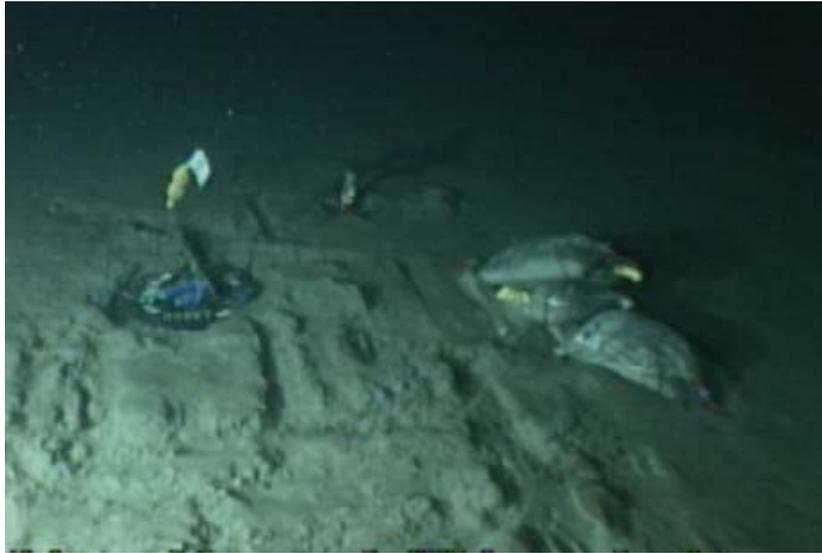


Figure 3 Current status of the A-1 observatory

4. Concluding Remarks

The present “Hyper-Dolphin” dive could confirm the safety on the way to the A-1 observatory. None of troubles or problems could be found during the present dive. Hence, we can continue to lay extension cable in the upcoming KY11-03 cruise again, though it would be a hard operation.

At the end of the cruise, we would like to express our best thanks to all crew of “Kaiyo” and also to all member of “Hyper-Dolphin” operation team.