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Title **REPORT OF NEW LONGLINE SYSTEM IN THE EXPLORATORY FISHERIES FOR *DISSOSTICHUS* SPP. IN 2005/06**

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ABSTRACT

This document reports that how new bottom long line system instead of Spanish long line system was applied to exploratory long line fisheries for *Dissostichus spp.* in 2005/06 season, indicating distinctive points on fishing gear, line setting and line hauling process, and explaining the reason why there was no seabirds caught at line setting and line hauling either.

SUMMARY OF FINDINGS AS RELATED TO NOMINATED AGENDA ITEMS

<i>Agenda Item</i>	<i>Findings</i>
5.1.1	As line sink speed and pull up speed in this new long line system is faster than in Spanish long line system, this system is quite effective to minimize the incidental mortality of seabirds.

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Shinsei Maru bottom line system

1. Vessel Details

Vessel name	Shinsei Maruno.3	Call sign	JAAL
Port of registration	Yaizu,Japan	Flag state	Japan
Owner	Taiyo A&F .ltd.	Charterer	Taiyo A&F Co.ltd.
Vessel type	Bottom longliner	Fishing gear	Polyethylene
Size(GRT)	735 ton	Length (LOA)	47.20m
Blast freezer Capacity	8 ton	Hold Capacity	228 ton
On-board acoustic equipment		JRC JFV-250 echo sounder,Furuno SU weather satellite receiver	
Position fixing equipment		Furuno GP-500 MK2	
Vessel monitoring system(present/absent) Present		VMS unit and transmitter equipment Type	
Radar		Furuno FR1510 MK 3/FR2120 MK 2	
Communications equipment		HF Icom IC M710,VHF JRC 2000,JRC JLR6000,Furuno GP-70 MK2,JRC JAX 836 Fax	
Plotters		Furuno GD-280 / Maxsea	

2. Cruise Itinerary

Port of Departure	Durban
Date of departure	30/12/05
Arrival on fishing Grounds	05/01/06
Start fishing	05/01/06
End fishing	30/03/06
Depart fishing Grounds	30/03/06

Port of return	Cape Town
Date of return	03/04/06

3. Structure of fishing gear

As Figure 1 shows (from left to right),

- 1) at the point of 120 m apart from anchor rope, a 22- m length connect line is connected to main line. At the bottom end of this connect line, 2 weights are set, each of which weight is 10.5 kgs.
- 2) Total 151 connect lines are connected to main line successively at intervals of 60 m , and to each connect line a drop line is attached .
- 3) To each drop line are set 5 snaps vertically, each of which consists of 5 hooks. (It means each drop line has 25 hooks.)
- 4) To each bottom end of drop line, a weight of which weight is 10.5 kgs is set, and to each upper end of drop line a float is set, adjusting depth of the sea.
- 5) After setting 151 drop lines , another drop line with 2 weights is set on main line at the point of 60 m apart from 151th drop line, and at the point of 120 m from that point an anchor is attached.

4. Line setting

- 1) Keeping a steady speed, the vessel sailed on carefully settled course ,setting lines at the stern.
- 2) In this cruise, line setting was carried out 184 times at setting speed 6 to 8.5 knots, on average 7.6 knots.
- 3) These lines were set at a depth of 600 to 2000 m, on average 1,282 m.
- 4) Time required for setting these lines was between 46 minutes to 60 minutes, on average 52 minutes.
- 5) 151 drop lines were thrown into the sea one after another at intervals of less than 15 seconds , and an anchor was thrown down, and finally one buoy was thrown in.

5. Line hauling

- 1) Line hauler at the head of the vessel hauled lines.
- 2) One connect line with drop line which was connected to main line at intervals of 60 m, was rolled up at around every 2 minutes,
- 3) Connect lines, rolled up until half length, were removed from line hauler, and later drawn up by hands..(When fishes are caught, connect lines, drop lines and fishes were drawn up together into the vessel ,using gaffs with bamboo handles.)
- 4) Fishes are transferred to vessel factory, and drop lines on deck were taken off from connect lines, and hooks were taken off from drop lines.
- 5) Main line, connected with connect lines, was pulled by the reel machine toward the stern and put away into line storage.
- 6) Time required for line hauling was between 5 hours 19 minutes and 7 hours 50 minutes, on average 6 hours 10 minutes.

6. Influence to seabirds

- 1) In this cruise, there was no seabirds hooked either in line setting or in line hauling
(In the last cruise, 2 MAI(Southern Giant-Petrel) intending to take the baits from hooks were caught, which were released by scientific observer on board immediately.)
- 2) Though many seabirds approached to hauling line in this cruise also, hooks and baits set in drop lines were drawn up into the vessel within so short time such as several seconds that any seabirds did not afford to even touch the baits.
- 3) Bottle tests were implemented 107 times in this cruise, and average time was 14,6 seconds (=0.68 m / sec).This average time is shorter than time of last cruise by 2.56 seconds.

7. Comparative study

We would like to compare Shinsei Maru Bottom Line System (in this cruise) and Spanish Double Line System (in last cruise) on several main points hereunder

	Shinsei Maru Bottom Line	Spanish Double Line
Length of one line	9,000 m	9,000 m
Number of hooks	3,775 pcs	6,000 pcs
Weights	10.5 kgs x 155	6.5 kgs x 501
Bottle tests	14.6 seconds	17.16 seconds
CPUE kg/1000hooks	186.6	67.1
Loss of hooks/line	5 pcs	365 pcs
Loss of weights/line	2 pcs	10 pcs
By-catch of GRV/line	32.7 kgs	64.1 kgs

Notes:

- 1) By adjusting position of baits on drop line to higher place, by-catch quantity of GRV(Grenaiders nei) ,which took feed near the bottom of the sea, decreased.
- 2) As sink speed and pull up speed of drop lines came faster, influence to seabirds was mitigated.
- 3) Loss of fishing gears decreased in quantity

Attached : Figure 1 (Gear description)
Photo No.1 (Hauling main line and drop line)
Photo No.2 (Hauling drop line and fish)

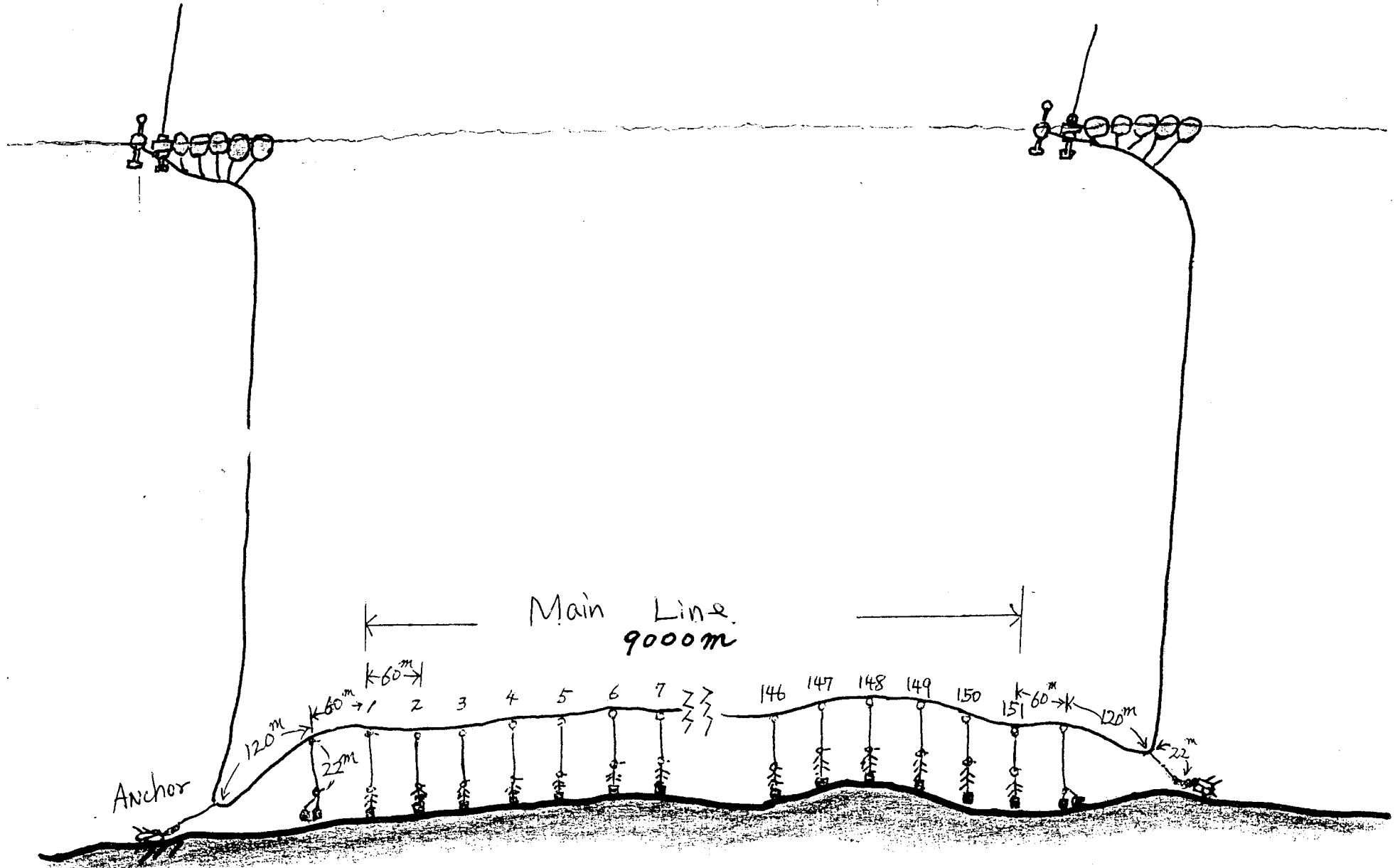


fig1. Gear Description