

REPORT ON

"THE POTENTIAL OF DANISH SEINING AS AN ALTERNATIVE FISHERY FOR LOBSTER BOATS" 24/84 FIRTA. N.C. MATSSON.

EXPLORATION OF WATERS ON THE WEST COAST OF SOUTH AUSTRALIA, WORKING FROM COFFIN BAY, WAS UNDERTAKEN TO ESTABLISH THE VIABILITY, OR OTHERWISE, OF DANISH SEINING AS AN ALTERNATIVE OFF SEASON FISHERY FOR LOBSTER BOATS TO THE PRESENT OVERSTRESSED SHARK AND INSHORE SCALE FISHERY. THE BOAT USED WAS 13.86M X 4.18M X 1.8 DRIVEN BY 137HP ROLLS ROYCE WITH 2-1 REDUCTION GEAR BOX, 2 TONNE FREEZER ROOM, 5 TONNE CIRCULATING TANK, SIMRAD 28KHZ PAPER SOUNDER, A.W.A. 200KHZ MEMO COLOUR SOUNDER, ANRITSU RADAR, AND FITTED WITH 2 ROPE WELLS.

THE WINCH IS DIFFERENTIAL WITH NIGGERHEADS FITTED TO AXLES, DRIVEN THROUGH GEAR BOX AND HYDRAULIC MOTOR, HYDRAULIC PUMP BEING DIRECT DRIVE FROM FRONT OF THE MAIN MOTOR AND MATHED WITH MOTOR TO ATTAIN MATCHED REVS OF MAIN ENGINE, HYDRAULIC PUMP AND WINCH MOTOR.

A NET REEL WAS USED TO RETREIVE NET AND TO STORE THE NET OUT OF THE WAY OF THE LOBSTER GEAR. A STERN ROLLER WAS FITTED TO THE TRANSOM TO ASSIST IN NET RECOVERY, AND SEINE ROPE ROLLERS WERE FITTED ONTO THE TRANSOM. TO LIFT THE COD END ON BOARD, AN EXTRA LANYARD WAS REQUIRED FROM THE WINCH OVER THE TOP OF THE NET REEL FRAME TO THE COD END. HAND RAILS ACCROSS THE STERN WERE MADE REMOUABLE, I.E. TO BE ABLE TO BE SWUNG UP TO ENABLE CLEAR ACCESS TO THE AFT DECK WHEN SEINING, LEAVING SIDE HAND RAILS INTACT.

SEINE ROPE WAS STANDARD 20MM, USED WITH A STANDARD NET, AS USED AT LAKES ENTRANCE, FITTED WITH A 4 $\frac{1}{2}$ " COD END, AND A LARGER OPENING FLYING TYPE.

THE GROUND TO BE WORKED HAD NEVER BEEN TRAWLED, OR WHAT WORK HAD BEEN DONE WAS NOT RECORDED, SO WHAT WAS THOUGHT TO BE FLAT BOTTOM ON THE PAPER SOUNDER, HAD TO BE CHECKED FOR OUTCROPS OF ROCK, ETC, BEFORE SHOOTING. THIS PROVED TO BE DIFFICULT AS ALLS AREAS SHOWED SOME HARD BOTTOM.

SEINING WAS CONDUCTED DURING DAYLIGHT HOURS, ON GROUND THOUGHT TO BE FLAT AND SUITABLE FOR SEINING. THE REQUIREMENT OF FISHING 3 MILE OFF SHORE AND BEYOND WAS COMPLIED WITH, AS THE CONCERN OF THE SOUTH

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AUSTRALIAN FISHERIES WAS TO BE UPHOLD.

SETTING OF THE GEAR CONSISTS OF BOUYING AND SHOOTING OF THE ROPE ON ONE SIDE, THEN SETTING THE NET, AND THE OTHER SIDE OF THE ROPE, IN A RECTANGULAR OR PEAR CONFIGURATION, RETREIVING THE FIRST END OF ROPE WHILE RETAINING THE LAST END SHOT, THEN IDLEING FORWARDS AND WINCHING AT THE SAME TIME, THUS BRINGING THE ROPES TOGETHER WHILE MOVING FORWARD AT INCREASING SPEED, HAULING THE COD END ON BOARD AND SORTING THE FISH FROM THE RUBBISH.

THE AREA FISHED WAS NORTH AND WEST OF POINT SIR ISACCS IN BOTTOM 30 - 50 FATHOMS AND WHAT APPEARED TO BE SAND WITH SMALL SAND STONE OUTCROPS. IT WAS NOT KNOWN IF WHEN SHOOTING THE GEAR W~~H~~ETHER THE BOTTOM WAS SOFT, HARD, OR CONTAINED FLAT SLABS OF SAND STONE THAT WOULD FILL THE NET AND MAKE IT UNRETRIEVABLE OR FOUL THE ROPES OR NET AND PERHAPS LOSE THE COMPLETE GEAR IN OUR FIRST ATTEMPT. NEEDLESS TO SAY, CALM WEATHER WITH NO TIDE OR SWELL WAS SELECTED FOR ALL ATTEMPTS. FLAT ROCKS IN THE COD END ARE A HAZARD AND THE SOUNDINGS ON THE PAPER ECHO SOUNDER DO NOT INDICATE THESE, THOUGH WITH EXPERIENCE THE COLOUR ECHO SOUNDER WOULD INDICATE THEM. THE OCCURANCE OF THESE FLAT ROCKS MAKES IT DIFFICULT TO FIND CLEAR SHOTS EVEN ON THE FLATTEST OF BOTTOM. IT IS NOT THAT THE NET ACTUALLY FOULS ON THESE, BUT IT WAS PICKING UP A FEW IN EVERY SHOT.

THE SEINE NET WAS NOT ABLE TO BE SUCESSFULLY WORKED IN CONSONG TION WITH LOBSTER POTS, AS THE COMBINATION OF GEAR MAKES THE VESSEL HARD TO WORK, AND RESTRICTS THE ORIGINAL DECK AREA USED FOR THE LOBSTER POTS AND BOUYLINES.

THE CATCH RATES HAVE BEEN VERY LOW, TAKING SMALL QUANTITIES OF THE FOLLOWING FISH SPECIES — OCEAN JACKETS, TRAWL FLATHEAD, GURNARD, GUMMY SHARK, STING RAYS, LATCHET, SAW SHARK, SARGEANT BAKER (BAREFACED WEAVER) PETER FISH, SPOR DOGS, K.6. WHITING, BOAR FISH, JOHN DORY, SAND FLATHEAD, RED MULLET, CUTTLEFISH AND DOLLAR FISH. WHILE THE CATCH RATES ARE LOW, A GOOD SAMPLE OF SEINE TYPE FISH WERE CAUGHT. THE VESSEL USED IN THIS PROJECT IS ONLY JUST SUFFICIENT IN HULK SIZE AND AS THE SEA BREAKS OVER THE SQUARE STERN WHEN THE ROPE IS FOULLED, AND WITH IT'S CIRCUKATING TANK

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LOCATED ABOVE THE SHAFT LEVEL IT COULD POSE PROBLEMS THAT MOST BOAT OPERATORS WOULD BE AWARE OF IN REGARD TO STABILITY.

WINCH, HYDRAULICS, ROLLERS, COILERS AND NET REEL ETC, ALL WORKED EFFICIENTLY AND EFFECTIVELY, WITH NO ACTUAL BREAKDOWNS OR BREAKAGE OF GEAR. THERE WOULD BE VERY FEW VESSELS IN THE S.A. LOBSTER INDUSTRY THAT WOULD BE ADEQUATE TO UNDERTAKE DANISH SEINING IN THE AREA OF THE BIGHT.

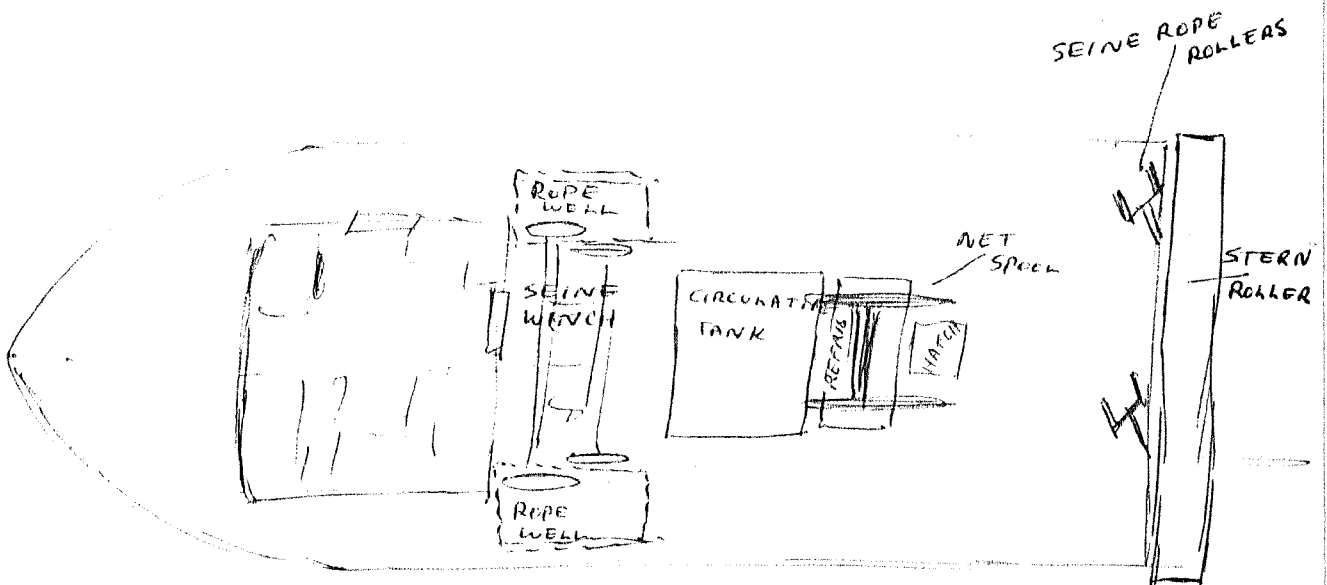
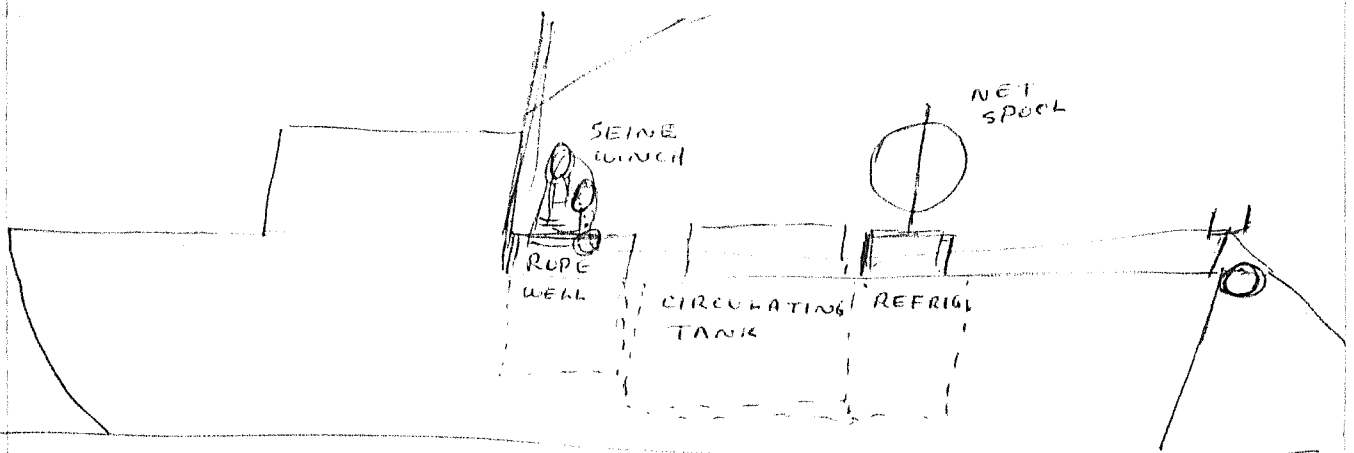
FISHING WAS ALSO UNDERTAKEN IN THE GREENLY ISLAND AREA OVER TWO TRIPS OF 4 DAYS DURATION, WORKING FISH TRAPS AND TRYING TO LOCATE SUITABLE BOTTOM FOR SEINING. THIS WAS FOUND APPROX 7-8 MILES NORTHWEST OF GREENLY ISLAND WITH SLIGHT UNDULATION IN THE BOTTOM, BUT THESE TRIPS STARTED WITH A MODERATE SWELL AND FRESH SOUTHWEST WINDS AND WHEN THE SWELL WAS LARGE NO TIDE WAS ENCOUNTERED. THE RISK OF SHOOTING IN THESE CONDITIONS ON NEW AND UNTRIED GROUND, WITH THE LIKELIHOOD OF BECOMING FOKED, AND IT'S SUBSEQUENT PROBLEMS, WAS TOO GREAT. WHEN THE SWELL ABATED AND THE WIND CALMED, AND THE CONDITIONS SEEMED FAVOURABLE TO WORK THE SEINE GEAR, THE TIDASET FROM THE SOUTHEAST WAS SUCH THAT ONE COULD NOT ATTEMPT TO SHOOT THE GEAR IN THE AREA, BEING TOTALLY INEXPERIENCED IN WORKING IN UNKNOWN BOTTOM IN THESE CONDITIONS.

AREAS SOUTH AND TO THE WEST OF GREENLY ISLAND PROVED TO BE TOO UNDULATING TO ATTEMPT SHOOTING THE SEINE, AS WELL AS THE STRONG TIDES WE WERE ENCOUNTERING. IT APPEARS THAT A LOT OF WORK HAS STILL TO BE CARRIED OUT IN THE AREA TO ESTABLISH ANY SORT OF TIDE PATTERN, AND TO DEFINE THE DIFFERENCES IN FLAT SOFT BOTTOM AND HARD BANDS OF ROCK ON FLAT BOTTOM.

DANISH SEINING WILL HAVE TO BE FURTHER EXPLORED AND RESEARCHED TO GREATER LENGTHS THAN I WAS ABLE TO UNDERTAKE, BECAUSE OF THE LIMITATION OF THE VESSEL USED. A CONTENTIOUS POINT THAT TROUBLED US, IN OUR EFFORTS, WAS THE REAL SUITABILITY OF VESSELS WITH CIRCULATING TANKS, THAT ALTHOUGH ARE VERY SUITED TO LOBSTER FISHING, THE POSSIBILITY OF THE TANK PLACEMENT IN THE VESSELS WOULD NOT BE SUITED TO DANISH SEINING IN NEW GROUND WHEN FOKING OF GEAR WOULD BE A RELATIVELY PREVALENT OCCURANCE,

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PARTICULARLY WITH WATER INTRUSION OVER THE STERN WHEN
RETRIEVING THE GEAR, STERN INTO THE WIND.
ALTHOUGH THE AMOUNT OF FISH SPECIES WAS VARIED,
THERE WAS NOT SUFFICIENT QUANTITY TO WARRANT A
FISHERY BEING ESTABLISHED.

DUE TO ILL HEALTH, AND OTHER FACTORS, NOT AS MANY
SHOTS WERE UNDERTAKEN AS I WOULD HAVE LIKED.



BOAT LAY OUT

	DATE	RPM	FATHOM DEPTH	WIND	LAT	LONG	CATCH SPECIES	QUANTITY
<u>1</u>	12/1/85	600-900	42	CALM	34° 29' 28" S	134° 56' 20" E	OCEAN L/SACKETS FLATHEAD (TRAWL) GURNARD BOX FISH GUMMY SHARK STING RAY LATCHET SAW SHARK OYSTERS QUANTITY OF CORAL	2 1 4 2 1 1 2 1 1
<u>2</u>	12/1/85	600-900	45	CALM	34° 29' S	134° 54' 50" E	FLATHEAD OCEAN L/SACKETS SMALL L/SACKETS STING RAYS PETER FISH GURNARD QUANTITY SPUNGES & CORAL	1 2 7 11 2 3
<u>3</u>	2/2/85	600-900	42	CALM	34° 31' 28" S	134° 56' 00" E	SAW SHARK BOAR FISH GURNARD LATCHET STING RAY BOX FISH GUMMY SHARK (SMALL) FLATHEAD K.G. WHITING PUFF FISH SPONGEST CORAL	2 1 20 30 1 4 1 10 15 6
							LOST SOME FISH THROUGH COD END	
<u>4</u>	2/2/85	600-900	42	CALM	34° 30' 00" S	134° 56' 00" E	SPUR DOGS GUMMY SHARK (SMALL) JOHN DORY BOAR FISH GURNARD YELLOW STING RAY LATCHET SAND FLATHEAD SAW SHARK FLATHEAD (TRAWL) OCEAN L/SACKETS K.G. WHITING PUFF FISH BARE FACED WEAVER BOX FISH	5 3 2 3 20 1 35 2 3 14 4 4 3 2 10

	DATE	RPM	FATHOM DEPTH	WIND	LAT	LONG	CATCH SPECIES	QUANTITY
<u>5</u>	16/5/85	600-900	28	CALM	34° 20.7' S	135° 12.8' E	RED MULLET BOAR FISH OCTOPUS SMALL CUTTLE FISH DOG SHARK SMALL DOLLAR FISH LOOSE ROCKS & SPONGES	30 2 1 3 1 45
<u>6</u>	16/5/85	600-900	29	CALM TO 8 KNOTS	34° 19.6' S	135° 12.6' E	3 COILS OUT, RAN INTO LARGE ROCK, TURNED OFF AND SHOT AROUND EDGE. COMPLETED SHOT, COMMENCED WINCHING, BUT ROPE FOULED. RECOVERED ALL GEAR OK. LARGE ROCK IN NET - NO DAMAGE!	
<u>7</u>	17/5/85	600-900	42	8 KNOT NORTHLY	34° 22.6' S	134° 57.9' E	GURNARD LATCHET ELEPHANT SHARK JOHN DORY BOX FISH (LARGE) BARE FACED WEAVER DOLLAR FISH CUTTLE FISH OCTOPUS FLATHEAD FIDLERS	8 2 1 1 3 1 40 3 1 1 2
<u>8</u>	17/5/85	600-900	43	8 KNOT NORTHLY	34° 23.7' S	134° 57.4' E	GURNARD LATCHET FLATHEAD NET ROLLED UP IN ONE WING	4 2 1
	26/9/85			TRAVELLED TO PT SIR ISAACS - TOO FRESH TO TRAVEL OR WORK.				
	27/9/85			FRESH S/W WIND, MODERATE SWELL, STRONG TIDE. CROSSED AREA OF SHOT 1, BUT CONDITIONS NOT SUITABLE TO SHOOT GEAR				
	28/9/85			LIGHT N/E WIND, STRONG TIDE, NO SWELL, UNDUKATING BOTTOM. WORKED L/JACKET TRAPS OK.				
<u>9</u>	29/9/85			SHOT GEAR. DUE TO STRONG TIDE FLAG AND FLOATS ON FIRST LEG KEPT BOBBING UNDER (AS DID L/J TRAP FLOATS). RETRIEVED GEAR AND ABANDONED IDEA OF SHOOTING IN TIDE. 34° 30.8' S 134° 47.4' E				
	7/10/85			N/WEST OF GREENLY ISLE, 20 KNOT S/W WIND, BIG SWELL, NO TIDE TOO ROUGH FOR SHOT. WORKED L/J. TRAPS.				
	8/10/85			S/WEST OF GREENLY ISLE, BOTTOM TOO ROUGH TO SHOOT. WORKED TRAPS				
	9/10/85			AREA OF SHOT 1, CALM CONDITIONS, BUT TOO MUCH TIDE TO ATTEMP SHOOTING OF GEAR.				

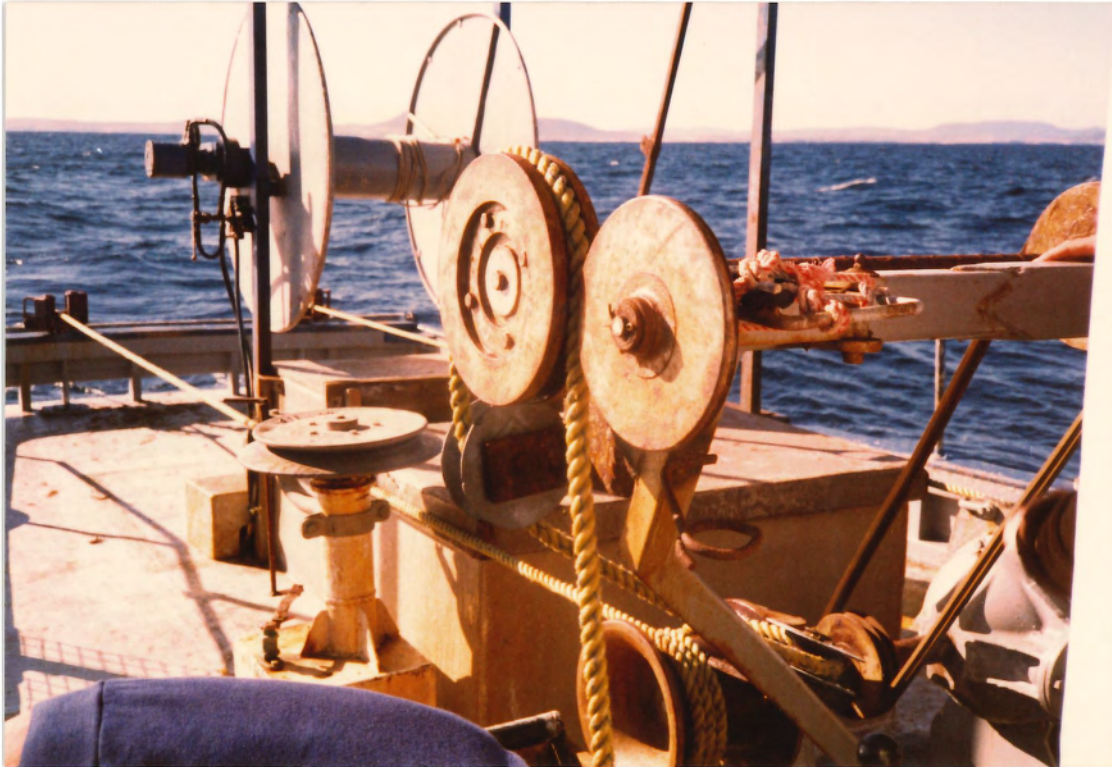


46 FT NISSAN "NITELWATCH"

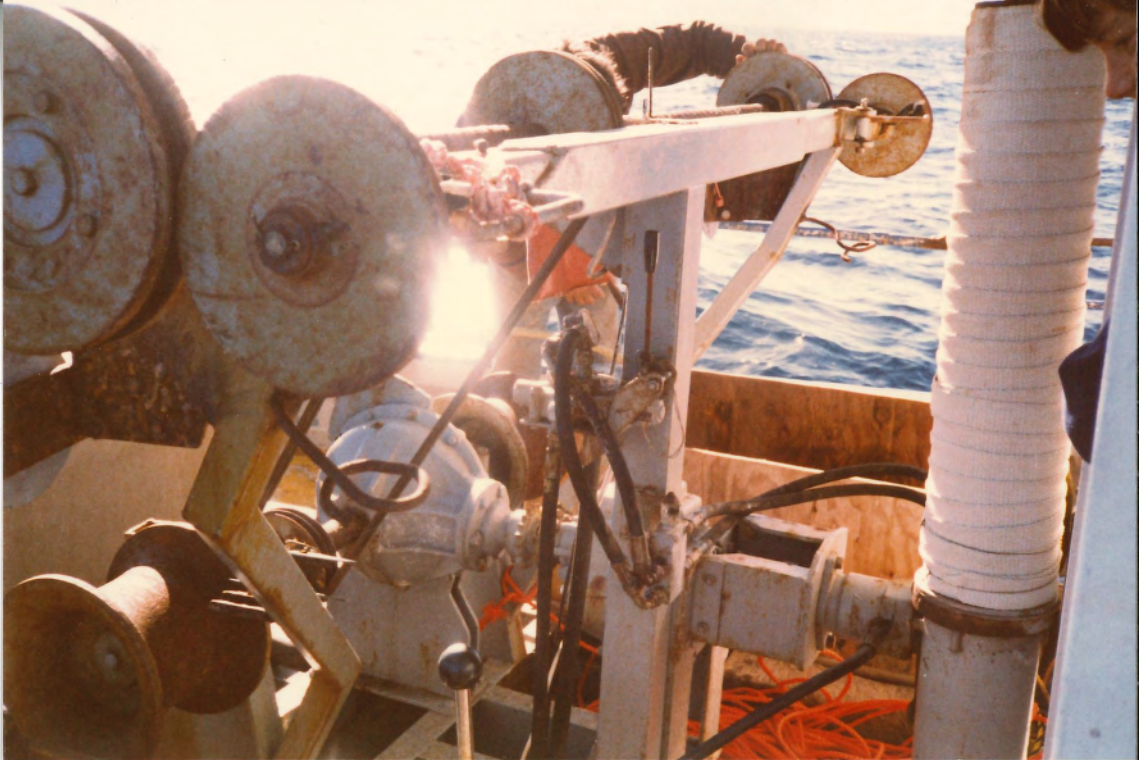




STARBOARD ROPE WALL



SEINE WINCH AND NET
DRUM WORKING AREA.



SUNN ROPE LYNELL



BRING NET ON REEL NOTR
AFT HAND RAIL DOWN 1W POSITION.





NET ALMOST TO STERN NOTR
WAND RAIL SWUNG UP OUT ORWAY,

NOTR ROLLER ABOVE NET RAIL
TO RUN LINE FOR LIFTING COILED
BY BEING WIND.





WINCHING BEWE NET ON BOARD
WITH RRL. CAN JUST SEE TOP
EDGE OF STERN ROLLER.



COD TEND ON BOARD NOTT
SNOTTER THIS WARD BACK TO
SOME WINCH NIGERHEADS





FISH AND RUBBISH





GUNNARD LARVAE BOARFISH
JOHN DORY - STING RAY

SMALL GUMMY SHARK, AND
RIRPIHAN SHARK. BOAR FISH.







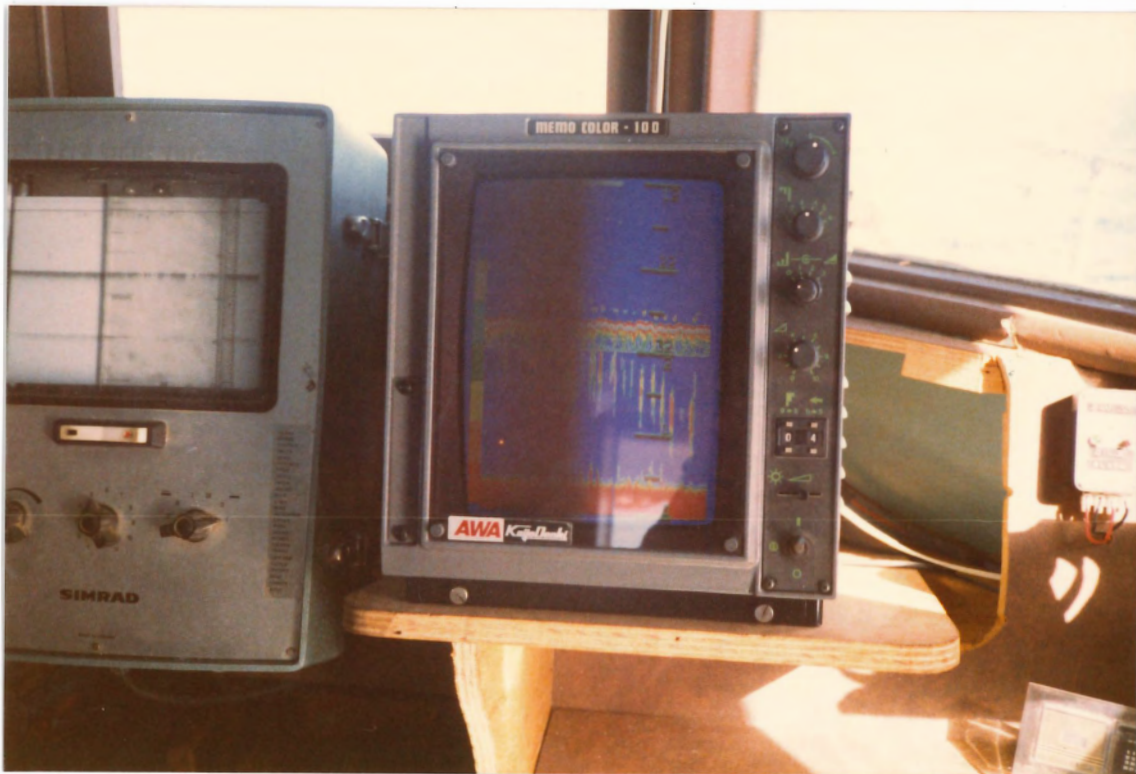
LOT OF SPONGES AND BOTTOM.











HARD TO PHOTOGRAPH BUT NOT
FISH ON COLOUR SOUNDER BENEATH BOAT
WHILE WATCHING DO NOT KNOW WHAT
THEY WERE OR HOW TO CATCH THEM.



START SHOT

FINISH.

12.1 G

12.1 I

15.9 H

42 FATHOM

43 FM

~~44~~
FM

~~45~~
FM

45 FM.

(2)

SHOT NO 1

3.51 PM.

46 FM

12.1.85

CD

END

FINISH

COD END
ON BOARD.

WINDING

26

WINDING

SHOT NO 3+4

42 - 43 FATHOM

SPEEDED OPERATION

UP TO 900 RPM

CALCUTTA / RECOVERED
ON ROPE + NETS
↓ WITHOUT
DAMAGE !!

UNDULATING BOTTOM SLOW'S HARD ON colour sensor

30/6/87

Mike,

I think it will be better
if you keep this. It's part



With compliments of the Secretary

Fishing Industry Research Committee
C/- Department of Primary Industry
Edmund Barton Building
Broughton Street,
BARTON, A.C.T. 2600

of the final report FIRTA 84/84

Green

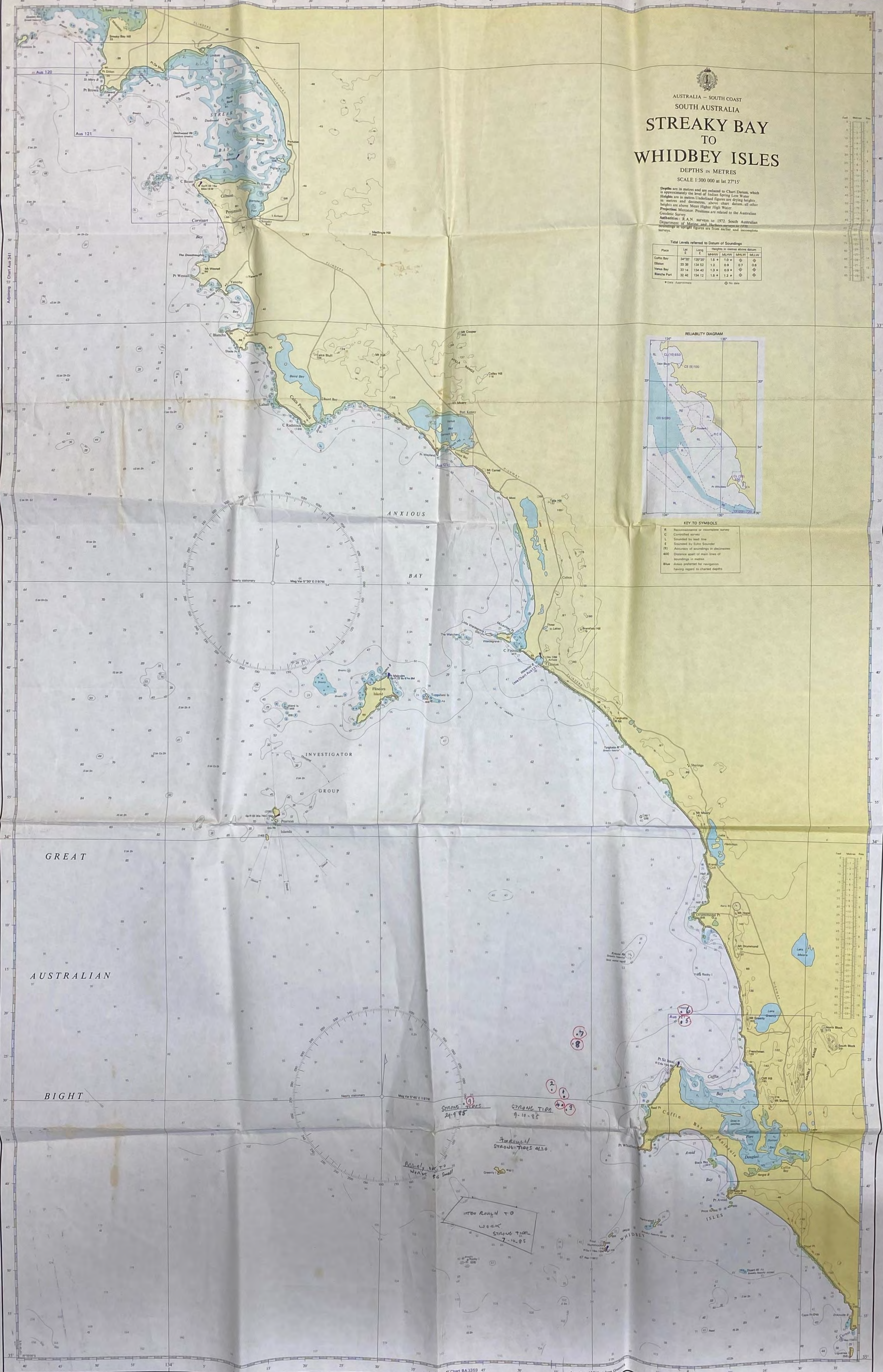
AUSTRALIA - SOUTH COAST SOUTH AUSTRALIA STREAKY BAY TO WHIDBEY ISLES DEPTHS IN METRES SCALE 1:300 000 at Lat 27°15'

Depths are in metres and are reduced to Chart Datum, which is approximately the level of Indian Spring Low Water. Heights are in metres. Underlined figures are drying heights, heights are above Mean Higher High Water. Projected Meridian. Positions are related to the Australian Geodetic Survey. Authorities: R.A.N. surveys to 1972. South Australian Department of Marine and Fisheries surveys to 1978. Soundings in light figures are from earlier and incomplete surveys.

Total Levels referred to Datum of Soundings

Place	Lat	Long	Levels in metres above datum
Coffin Bay	34°30'	139°20'	1.5 + 1.0 +
Ellston	33 38	134 52	1.2 0.9 0.7 0.6
Venus Bay	32 14	134 40	1.5 + 0.3 +
Bianche Fort	32 46	134 12	1.8 + 1.2 +

* Only Approximate † No data



STREAKY BAY 24-9-85

CRANK TIDG 9-10-85

STREAKY BAY STRAIGHT TIDES ALSO

Basically OK TO WEAVE S & SW

TOO RUGH TO WEAVE STRAIGHT TIDES

1 2 3 4 5 6 7 8 9