

Ray Edwards,
111 London Street,
PORT LINCOLN, S.A. 5606

18.7.79

Secretary,
Fishing Industry Research Trust Account Committee,
CANBERRA, A.C.T. 2600

Dear Sir,

RE: "AB-MARINER" PROJECT REPORT

I realize I am late in submitting this final report on the Ab-Mariner Cage Project. Reasons for this are, in the first instance, that funds were withheld by F.I.R.T.A. for the whole period of the Grant, causing a great deal of disruption to the project. Secondly, though, the project still remains uncompleted, in some respects, and I would have hoped to complete it before writing this final report. I am unfortunately unable to do so however, unless I can obtain further funding from F.I.R.T.A.

This report may be viewed as a final report, and would be best presented under a number of headings, namely:

- A. Aims of the Project
- B. Comprehensive Outline of Various Components
- C. Critical Analysis of Results to Date
- D. Continuing Programme
- E. Funding.

A. AIMS OF THE PROJECT

The original aim of the Ab-Mariner project was to continue experimentation, development, and refinement in order to create an underwater self-propelled shark proof vehicle, capable of being used effectively in the Australian Abalone Industry.

A breakdown of this overall theme, was to prove: a vehicle structurally strong enough to withstand the buffeting of a White Pointer attack, or one noisy enough underwater to almost guarantee the even not occurring, or one psychologically able to allow a diver to work effectively

in the industry, and one able to provide the diver with various means of repelling or deterring an attacking shark, could be built and proven.

: A vehicle could be built that would lift divers' morale on the White Death Syndrome; that would end the tragedy and strain associated with the industry; offer a safe decompression haven for deep water divers, enabling deep water stocks to be worked more effectively and hence halt the net decline in abalone catches, Australia wide.

: That such a vehicle could be effectively used in the abalone industry to provide operators with a means of maximising their overall efficiency.

B. COMPREHENSIVE OUTLINE OF VARIOUS COMPONENTS

1. Features of Aluminium Framework of Vehicle

- (a) Closely enmeshed to provide structural strength, as well as stop the jaws of an aggressive shark from protruding into the cage.
- (b) To provide the diver with a maximum of uninterrupted forward vision.
- (c) Gimble mountings of propulsion unit at front for increased manoeuvrability and ease of operation.
- (d) A section of Cross-bars in mid-under section of vehicle to carry operators net-bag of abalone, with quick release catches to enable the quick release of abalone bags - to both maximise the speed and efficiency of changing bags, as well as release negative flotation load in event of various problems, so diver never leaves the vehicle.
- (e) Stainless steel rings, front and back, into which tethering shark clips on ropes in tender boat can be attached when cage is tethered alongside tender boat.
- (f) Entry and Exit Hatch on strong rear mounted hinges, with stops all round cage frame, to prevent door from entering cage in event of distortion or force from shark attack.
- (g) Stainless steel chains on shark clips which can be quickly released or fixed to allow diver to work through unrestricted area of cage floor, or totally enmeshed when vehicle is rising to surface.
- (h) Flotation tanks of 4" diameter, 16 gauge aluminium to give cage neutral buoyancy; placed at top to give cage maximum stability. Valves inserted in each tank to individually pressurize to 30 lbs/sq. inch, to offset the effects of increased pressure and collapsing tendencies at depth.

- (i) Flotation tanks on slides to allow operator to trim the cage at various angles to the ocean bottom, depending on depth of operation, and varying types of underwater terrain.
- (j) Aluminium Buoyancy Parachute - Streamlined to give the maximum aerodynamic efficiency, and underside to suit operator whose neck and shoulders snugly fill this shape when operator moves about inside, with 6" diameter opening at bottom for entry of air for lifting purposes (supplied via ½" Toyo tap conveniently located at operators discretion, and attached to T piece on main Air Supply line); with 2" dump valve at top (from toilet cistern) with 1" medium strength return spring to aid return and sealing off of plunger; with string attached to underside of plunger to allow operator to dump air quickly and maintain cage's neutral buoyancy or lifting ability.
- (k) Quick release couplings at rear-top of vehicle to facilitate coupling of umbilical from boat.
- (l) Rubber support harness across the bottom centre of cage to offset the tendency of operator to accentuate the arching of his back when removing abalone from the sea-bed. Whilst a flat floor overall would offset this problem, the shape shown in photographs, allows a less restricted movement of the vehicle amongst obstacles on the ocean floor.
- (m) The optional inclusion of an added lead weight which can be released instantly (and counteracted by the corresponding addition of extra buoyant tubing) is a safety feature worth inclusion for use in event of emergency surfacing requirement.
- (n) Mini-lung with independent mouth piece and purge valve, with at least a 5 minute air supply to assist operator in surfacing and awaiting pick-up by tender boat in event of umbilical kinking or breaking. The hose from the emergency lung should be within reach of opening in underside of lifting parachute to allow emergency surfacing. An additional optional safety feature here is the attaching of hoses to all buoyancy tanks containing pressurized air, and connected through a master Toyo tap into the parachute, making a further emergency lifting feature available to the operator. (A canvas parachute should be carried at all times in cage for sole purpose of emergency lifting in event of dump valve malfunction.
- (o) Reinforced shield over dump valve on parachute to guard against damage by aggressor, underside of boat, unforeseen obstacles, etc.

- (p) Dimensions and specifications of Vehicle - should be constructed to suit operator's individual tastes. The test vehicle is constructed of Marine Grade Aluminium (which from the point of view of economics, as well as weight versus strength ratio, is probably better than stainless steel or durallium). Longitudinal framework is 1" diameter, 10 gauge aluminium tubing, whilst webbing is flat 1½" by 3/16" aluminium.
- (q) Adjustment holes should be drilled in all sections of Gimble Frame to enable the drive unit to be mounted offset up and to the left of centre to avoid wash from propeller, in operator's face.
- (r) Miscellaneous items added to framework are T piece off main air supply with Toyo tap to allow air to be fed from a 3' length of hose into abalone parachutes. Also a length of hose to supply lubricator with oil, whilst cage and lubricator are submerged alongside of tender boat. A pressure gauge keeps operator in touch with system.

2. Power Unit in Underwater Vehicle

Two horse-power "Aro" Air Motor with keyed spindle, bolt-on type gearing, forward rotation only, and with a variety of free speed according to gearing. Adjustable exhaust manifold, flush fittings for lubrication, and 5/16" n.p.t.f. female air inlets at side and rear of head. Air pressure of 90 p.s.i.g. at the air inlet of the hoist is required for maximum motor efficiency.

The "Aro" Air Motor is waterproofed by placing operator's control tap in the air line exhausting from the motor; grease points waterproofed by use of brass, screw-capped nipples. Shafting at front section of motor waterproofed using stainless steel casing bolted to Air Motor housing. This section contains an extension shaft which sleeves over the shaft of the Air Motor, through which a flush stainless steel tapered pin is driven.

An unbalanced carbon-ceramic seal, same diameter as the extension shaft, seals the entry of water into the gearbox chamber.

The section of the extension shaft which protrudes from the attached housing, is tapered to accept a reverse taper 14 x 8, aluminium balanced propeller. The propeller is mounted on a key way with locking nut to hold in place. The propeller blades are protected by circular stainless steel meshing, which replaces the aluminium kort nozzle for better visibility.

The air motor unit is secured to the cross-piece in the Gimbles, which allows movement through any part of the quadrant. The unit is balanced so as to remain horizontal when operator requires use of both hands in his work.

To the exhaust outlet on the motor is attached a 1½" diameter Toyo ball-valve tap, the shaft of which has had a brass T piece added for ease of operation. This tap effectively controls the range of air flow through the system, and hence the propeller performance.

Air is supplied to this unit by means of an umbilical coupled through "Aro" quick release couplings mounted at back upper corner of vehicle. Before entering the power unit, the compressed air passes through an "Aro" filter and water trap, which removes particles larger than 50 microns, then enters a lubricator which can be adjusted by the operator, to provide oiled air to the power unit (lubricating oil 1/3 H.L.P. 80 oil, and 2/3 C.P.D. 32 dewatering fluid).

Umbilical: The Umbilical is 330' long, consisting of ¾" diameter Nylex hose to supply the drive units; and taped at 12" intervals to this, is the diver's 5/16" hookah air line. Both ends of the umbilical have quick release couplings attached, to aid in stowage, and towing from time to time to reduce tangling and kinking.

To the vehicle end of the umbilical is attached 3' of double braded ¾" hydraulics hose, which serves to reduce weakening and kinking of the hose at this critical point, as well as acting as a safety feature in the event of a White Pointer running its teeth along the back corner section of the cage, and parting the hose.

As the vehicle enters deeper water, and a greater section of buoyant hose enters the water, a lifting movement on the back of the cage is introduced. This can easily be offset by the attachment of small sections of rolled lead to the last twenty feet of hose nearest the cage connection point.

The Power Source: The Holman Compressor is a two cylinder air-cooled reciprocating compressor, powered by a 126A Volkswagen engine. This unit is designed to deliver 60 cubic feet/minute at peak revs.

A rear hinged aluminium cover was added to protect the motor as much as possible from the effects of salt spray.

The output of the compressor is regulated according to the demand for air. Demands for full capacity down to zero, are controlled by the automatic unloading of the compressor and the closure of the carburettor throttle down to idling speed.

The engine is provided with 12 volt electrical starting and running equipment. The fuel tank has been removed from the vicinity of the hot motor, and situated at rear of boat, to minimize chances of fire at sea.

Hot compressed air is carried from the head of the compressor, through stainless steel tubing into a copper heat exchanger, which consists of a 7' long, 4" diameter copper tube with sealed ends, through which runs 4 seven foot lengths of ¾" copper tubing. At each end of the unit, is added brass tails which allow salt water to enter and exit through the system whilst

cooling hot air from the compressor. The cooling water is supplied by means of a ½" Jabsco waterpump which is pulley and belt driven in the same way as is the 8 cubic foot/min Clisby compressor, supplying the diver's air. The inlet is mounted permanently on the transom of the boat, and water exits in sight of the crew hand, from the heat dissipation unit directly over the side of the boat. This source of water may be conveniently used as a deck hose in the case of suitable boats with flush decks, such as Shark-Cats.

The cooled air enters, via a water-trap, into a 3 cubic foot, stainless steel, reserve tank system, which has attached a pressure gauge, clearly visible, along with a safety valve, set to lift at approximately 10 pounds/sq. inch, above the maximum operating pressure of 125 lbs/sq. inch.

The Cut-Out Valve (Hoebinger) which operates between 100 lbs/sq. inch and 125 lbs/sq. inch, is attached to the reserve tank system.

An air snorkel made of aluminium, in the top of the aluminium compressor cover, allows an unrestricted flow of cooler air into the fan cooling section of the V.W.

A stainless steel exhaust muffler has been added to help reduce the noise of the motor when operating at full revs.

C. CRITICAL ANALYSIS OF RESULTS (So far as the project can be taken in the absence of a further injection of funds from F.I.R.T.A.)
The project's overall results should be view in parts ...

- (1) Whether the cage in fact represents to the diver a greatly reduced chance of shark attack.
- (2) Whether it aids him in working sparsely populated areas of abalone.
- (3) Whether it aids him in working turbid water and hence his ability to farm the stocks more efficiently.
- (4) Whether it lifts his overall morale.
- (5) Whether it is effective in terms of manouvreability, maintaining or improving his free-diving catch rate, or performance with less effort.
- (6) Whether it aids the working of deep water through acting as a decompression haven.
- (7) and lastly, Whether the overall system is reliable.

There is no question that aims (1) to () have been achieved already. The shark cage, as presently constructed, represents a vehicle which the average professional diver is able to use and maintain his previous hourly catch rate, and for less physical effort. It offers him comfort, safety, and a means of moving across vast tracts of ocean bottom, virtually regardless of his physical ability or condition. It offers him the opportunity to carry any number of desirable safety aids, such as independent mini-lung, air supply, decompression meter, depth gauge, decomputer (when available) to gauge speed of ascent. Also, the diver is able to carry an underwater power-head in the event of a shark encounter.

Unfortunately, when looking at aim (7), a more pessimistic result emerges. The pneumatic system overall has shown itself to be somewhat unreliable.

The parent compressor is not marinised enough to withstand the effects of salt air on its working components. A number of its components continually break down.

The effectiveness of the air cooling of the motor and compressor when running at peak revs for long periods (such as time when a diver is traversing long distances underwater looking for new grounds, or working sparse stocks) should be improved, especially on hot, windless days.

The Volkswagen is extremely noisy and, considering the crew-hand is confined to working long periods of 8-10 hours per day, a few feet away, presents an undesirable objection.

The high output of compressed air from a relatively low volume, low weight power source, was seen initially as a desirable point. In terms of comparisons with other air compressors, this is still so. However, working in deeper water, an increasing trend in the S.A. fishery because of the now critical net annual drain on stocks, the increasing back pressure on the exhaust outlet causes the drive unit to lose considerable power, so the cage's ability severely drops off with depth.

In terms of solving this problem in the short term, the diver may choose to restrict his efforts to shallow areas. However, this is side-stepping the problem, and for maximising the overall efficiency within the industry, and farming the stocks in a proper manner, it is imperative a more constant power source be found to complete the cage's overall performance.

The overall cost effectiveness of pneumatic parts available within Australia should also be critically examined, compared say, with more cost efficient systems of propulsion.

Unquestionably, the cage concept itself has been proven, and it potentially offers a number of real advantages over free diving within Australian waters.

It follows, that the continued non-use of cages throughout the industry at this stage, is directly related to the continued unreliability of pneumatic parts.

The incidence of shark encounters and attacks in Australian waters still continues unabated, so any discussion of project results must be viewed according to priorities. To some cage operators, the suspect reliability of pneumatics has proved too frustrating, and they have resorted back to free diving - in anticipation that soon a better power source will appear. To others, the threat of an agonizing death over-rides all other considerations, and they continue to use the pneumatic system, looking forward to further refinement.

The Grantee believes hydraulics offer the ultimate power source, in that the motor may be diesel powered offering reliability, unlimited horsepower, attractive power/weight characteristics, and a set power output, regardless of depths worked by the operator.

On the other hand, the pneumatic chapter has been important in proving the viability of the vehicle itself, as well as providing a means of comparison. Should hydraulics not prove to be viable, then pneumatics will be further improved with effort. Certainly, the pneumatic system could be further marinised. A system with inherent drawbacks, is still infinitely superior to one which may lead to loss of life or limb.

With this in mind, the programme is continuing.

D. CONTINUING PROGRAMME

The aim of the final section of the project is to establish the most economical and reliable system of propulsion for the underwater vehicle. Also, one which will perform consistently, regardless of depth.

To achieve this, hydraulics should be examined fully, as have been pneumatics; the pneumatic system itself should be refined a little more, then a comparison made and analysed.

The Grantee requests a final Grant from F.I.R.T.A., to fund the completion of this section of the project. The results so far are more than encouraging, and suggest that on establishing a proven and reliable power source, most divers in Australia who feel their life is at risk, will find it difficult not to embrace this new diving technology.

E. FUNDING

The funding from this final Grant will service three sections:

- (A) Salaries.
- (B) Operating Expenses.
- (C) Capital Items.

(A)	<u>Salaries:</u>		
	2 persons @ \$13,500 per annum for 14 weeks	...	\$7,269.23
(B)	<u>Operating Expenses</u>		
	(1) Telephone, Telex, Telegrams, Typing	...	\$270.00
	(2) Travel	... ..	\$242.40
	(3) Freight	... ..	\$80.00
	(4) Vehicle Costs (30 cents/mile)	... ..	\$125.00
	(5) Diving Gear .. Wet Suits, etc.	...	\$85.00
	.. WETPHONE Communication System		\$1,284.00

The addition of a WETPHONE Underwater Communications System (as developed by Sound Wave Systems of Costa Mesa, California, U.S.A.) is an essential requirement to improve the efficiency and overall effectiveness of the Ab-mariner Vehicle and Project.

This compact underwater radio telephone and wireless, provides reliable communication (96% intelligibility) between operator and surface boat, in both directions. The sound transmission of the system is ultrasonic, and has a frequency which minimizes background noises.

A relevant feature is that a tape recorder can be plugged into the surface unit to record both the surface and diver conversation. This will allow the monitoring of test results which can be analysed in more detail later. (The collecting of test results at sea has been somewhat of a problem to date).

An additional safety feature of this system, is the unique electronic circuiting in the diver unit, which monitors the breathing inside the mask. If there is no breathing for thirty seconds, a beeping alarm automatically goes off; which can be heard by other diver units in the area, as well as the surface unit. The Wetmask mouthpiece also eliminates the bit-type mouthpiece, relieving jaw strain and giving additional fact protection in cold water, to the cage operator. (Tested and approved U.S. Navy; Coastal Systems Laboratory, Panama City, Florida, U.S.A.).

10.

(6)	Fuel	...	...	...	...	\$155.00
(7)	Insurances	...	...	...	...	\$60.00
(8)	Miscellaneous	...	...	...	...	\$200.00
TOTAL (1) to (8)						<u>\$2,501.40</u>

(C) Capital Items:

(1)	Hydraulic motor (Cage). Flange mounted. "HYDRECO"					
(2)	Control Valve - 3/8" L-Port Valve					
(3)	Housing & Seal. New extension shaft. Engineering.					
(4)	Hoses .. Synflex 3000 Series, 1/2" internal diameter as delivery line. Length 100 metres. Barfell braded, oil resistant special, 1/2" in diameter as return hose.					
(5)	Hydrostat, Pressure gauge, and Filter ... Vickers hydrostat Glycerine-filled pressure gauge with range of 0-3000 P.S.L. Filter - 20 micron gauze element.					
(6)	Reserve Oil Tank.					
(7)	Oil - BP Energol 40. Wynn's Hydraulic Oil as additive to control viscosity.					
(8)	Breakaway Couplings (Aerogrip 1/2").					
(9)	Main Motor and Pump. Pump: ATOS or similar to deliver 6.5 gallons per minute at maximum revs. Motor: 22 H.P. Twin cylinder Ducati diesel for increased reliability.					
TOTAL - Items (1) to (9)						\$4,700.00
(10)	Miscellaneous	...	...	...	...	\$350.00
						<u>\$5,050.00</u>

(A)	Salaries	...	...	...	...	\$7,269.23
(B)	Operating Expenses	...	...	...	...	\$2,501.40
(C)	Capital Items	...	...	...	...	\$5,050.00
						<u>\$14,820.63</u>
						=====
	Overall Funding requested from F.I.R.T.A.	...				
	(1) Contingent liability of 1976/77 Grant Period	...				\$6,819.73
	(2) Requested Funds 1979/80 Grant Period	...				\$14,820.63
						<u>\$21,640.36</u>
						=====
					TOTAL:	\$21,640.36
						=====

I trust the Fishing Industry Research Committee will find this report to its satisfaction. I realize that including a request for more funds, along with this report, suggests an "open-ended commitment" on the project.

I certainly do not view this request in this way. I realize that the Australian economy is under strain from a number of directions. Further, I am grateful for the financial aid already received from F.I.R.T.A., and realize that your priorities may be along different paths. In this respect, even partial funding of the projected expenditure would be appreciated.

The only additional remarks I would add, are that I believe this project still fulfils all the criteria you consider important in a Grant Application, and over-riding this is a sense of urgency, to complete a technological aid which the whole Australian diving community is sure to embrace.

It is of potential benefit to industry, not only as a means of maintaining or expanding existing markets, but also as the means of protecting life and limb. It remains feasible. It is definitely a project which requires added capital and, therefore, is not being duplicated elsewhere.

It has been taken to a stage which demands completion and, since the Grantee lacks these additional funds, or sources of alternate funds, this final Grant from F.I.R.T.A. would enable the final stage to be completed.

Yours sincerely,

R. Edwards.

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Photo Credits: Alan Weir (Port Lincoln).

Ch Ryan
22/3
we need
to check material
in this publication
carefully. It
with fins some
our only way
of finding out
what's going on

MR BOLLEN,

SAFIC

The magazine of the Fisheries Division of the Department of Agriculture and Fisheries and the Australian Fishing Industry Council in South Australia.

M. TURNER *Mr. LUMPKIN* *Mr. CATON* *H. POWELL*
Mr. Russell French (see page 6 re Ellis request currently with A.G.S.)





The magazine of the Fisheries Division
of the Department of Agriculture and
Fisheries and the Australian Fishing
Industry Council in South Australia.

SAFIC

FEBRUARY, 1978. Vol. 2, No. 1

Fourth year of publication

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EDITORIAL

RESEARCH SEMINAR

A two-day research seminar on the current research programmes being undertaken by the Fisheries Division is being proposed for later this year.

Some ten research programmes are in operation and the present suggestion is that a situation report and results to date be presented by each Research Officer, possibly taking half an hour with fifteen minutes for questions.

Suggestions are invited on when and where the seminar should be held, its content and duration. Such suggestions should reach the Chief Fisheries Officer, Mr. A. M. Olsen, by 30th March.

* * *

Front Cover

A blue swimming crab (*Portunus pelagicus*) in the process of moulting, i.e., shedding its hard exterior shell revealing a new soft shell underneath. Whilst the new shell is still in the soft state, the crab swallows water to stretch the new shell to its full capacity. Once the shell has adjusted to its new size, enzymes are secreted which harden it. This process is necessary in all crustacea (e.g., prawns, crayfish, crabs) because the hardness of the shell limits any change in size or shape, therefore the shell must be removed in order for the animal to grow. The length of the period between moults is variable, depending on irregularities in the growth sequence of a species, the amount of food available and other environmental factors such as temperature. Research Officer Heather Smith began studying the biology of the blue swimming crab in early 1977.

Photograph by Kevin Branden of the Fisheries Research Branch.

* * *

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CHANGES TO PRAWN TRAWLING AREAS

The closure to prawn trawling of the waters of Spencer Gulf north of Yarraville Shoals from 15th January to 15th March each year has been abolished. A proclamation revoking the closure appeared in the *Government Gazette* on 12th January.

This means that most of Spencer Gulf was opened to prawn trawling (by the vessels authorised for that gulf) for this year only. A comprehensive closure of the whole gulf is being considered for early 1979 to coincide with the movement of young prawns down the gulf.

Also, the boundary of the permanently closed area at the top of Spencer Gulf was moved northward to a line joining Point Lowly, Ward Spit and Port Germein (see sketch map below). The government would not consider allowing prawning above this line.

Whether or not to close the area around Yarraville Shoals or, in fact, the whole gulf for two to three months was the subject of discussions between the Department of Agriculture and Fisheries and prawn fishermen throughout much of 1977. No consensus of opinion was reached but there was general agreement that the annual two months closure around Yarraville Shoals should be abolished as it was not particularly effective in protecting small prawns and had been the cause of dissention within the fishing industry.

"We are satisfied that during this period fishing will not permanently damage the prawn stock", the Acting Minister of Fisheries, Hon. T. M. Casey, said when announcing these changes.

During the two months that this area would have been closed, Fisheries Officers are monitoring the size of the prawn catches and the size of the individual prawns being caught.

Mr. Casey said that the findings would be discussed with the fishing industry in relation to a possible total closure of Spencer Gulf to prawn trawling in early 1979 to achieve the best possible yield from the prawn stock. There was not time to arrange such a closure for this year without considerable disruption to the fishing industry.

Fisheries biologists will continue to monitor the prawn stocks in the gulf during the rest of the year to ascertain the most suitable closure period.

Currently, the only areas closed to prawn trawling in Spencer Gulf are north of a line joining Point Lowly, Ward Spit and Port Germein, a proclaimed area around Cowell, and all waters under ten metres in depth.

Reprinted below is the proclamation that appeared in the *Government Gazette* on 12th January, 1977 that gave effect to these changes:

FISHERIES ACT, 1971-1976

SOUTH AUSTRALIA
to wit
(L.S.)

K. SEAMAN

Proclamation by His Excellency the
Governor of the State of South Australia

BY virtue of the provisions of the Fisheries Act, 1971-1976, and all other enabling powers, I, the Governor, with the advice and consent of the Executive Council, do hereby vary

the proclamation made pursuant to the provisions of the said Act on the 30th day of November, 1971, and published in the *Government Gazette* on the same day at page 2262 by:—

1. Deleting the variations made to the schedule to paragraph 10 thereof by proclamation made pursuant to the provisions of the said Act on the 22nd day of March, 1973, and published in the *Government Gazette* on the same day at page 1134.

2. Deleting subparagraph (1) of the Schedule to paragraph 25 thereof, and substituting the following subparagraph:—

"(1) All the waters of Spencer Gulf situate northerly from the geodesic extending from the light situate on Lowly Point (being approximately latitude 33° south, longitude 137°47' east) to the light situate on the western end of Ward Spit (being approximately latitude 33°3' south, longitude 137°50' east) thence from the prolongation of the geodesic extending from the said light situate on the western end of Ward Spit through the light situate at the head of the jetty at Port Germein (being approximately latitude 33°2' south, longitude 138° east) to a point above high water mark on the shore of Port Germein."

Given under my hand and the public seal of South Australia, at Adelaide, this 12th day of January, 1978.

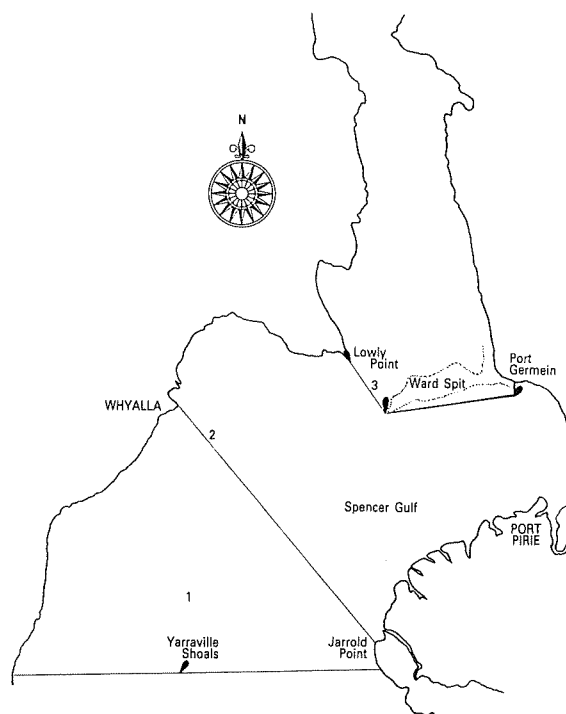
By command,

D. H. BANFIELD, for Premier

D.F., 34/6/107

N.B. Paragraph 2, second line erroneously read "24" instead of "25". This was corrected in the *Government Gazette* of 19th January, 1978.

—continued next page



1. The area that was closed to prawn trawling each year from 1971 to 1977 between 15th January and 15th March. There is no such closure this year.

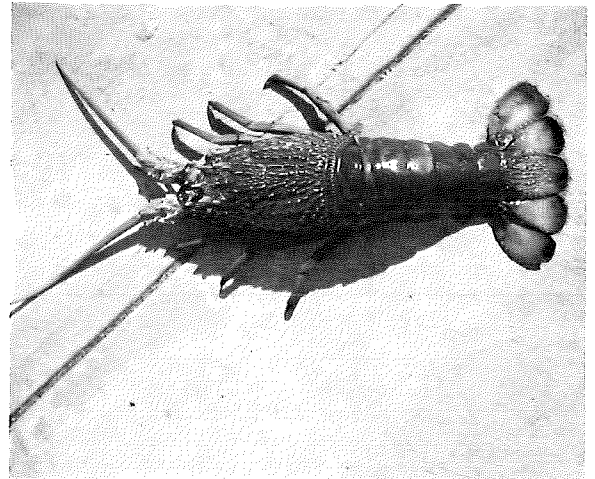
2. The old southern boundary of the permanently closed area. This has now been moved to a line joining Point Lowly, Ward Spit and Port Germein (see 3.).

JASUS VERREAUXI

A catch of interest occurred two miles south-west of Carpenter Rocks on the 12th November 1977, when a specimen of the pack horse rock lobster, *Jasus verreauxi* was captured in a commercial pot by Mr. S. Samson of Carpenter Rocks. *Jasus verreauxi* is one of seven species of the genus *Jasus* found in warmer temperate waters of the Southern Ocean; and is generally found on the east Australian coastline from New South Wales extending occasionally into Tasmanian waters and around the North Island of New Zealand.

J. novaehollandiae the basis of the southern Australian rock lobster fishery, is distributed from south-western Australia across southern Australia, around Tasmania and northwards to about the latitude of Sydney. Mr. Samson's find is believed to extend the westward limit of distribution of *J. verreauxi* to Carpenter Rocks. The previous western limit of distribution was Port MacDonnell when a specimen was captured in 1952.

The distinguishing features of *J. verreauxi* compared with *J. novaehollandiae* are distinctive olive green colour, a lack of sculpturing on any of



Jasus verreauxi

the tail segments, spines on the carapace few in number and prominent, and the rostrum as well developed as the supra-orbital (above-eye) horns.

* * *

RECORD FOR A TAGGED ABALONE

During a field trip in January 1978 to Tipara Reef, Spencer Gulf, a greenlip abalone tagged in December 1969 and last seen in December 1973 was again sighted by the abalone research team, Senior Research Officer Scoresby Shepherd and Technical Assistant Gavin Wright. Since first tagging, the animal had grown from 86 mm to 115 mm in length.

This sighting after eight years is believed to set a new world record for a tagged abalone. Previously, the longest period between tagging and resighting of an abalone was six years at West Island near Victor Harbor.

* * *

CHANGES TO PRAWN TRAWLING AREAS—continued from previous page

FISHERMEN ACT

At a meeting of the Western Waters' Prawn Boat Owners Association on 25th January, 1978, skippers and crews of Port Lincoln-based prawn trawlers decided to impose their own bans on trawling in northern Spencer Gulf to replace that which the Government had lifted the previous week.

Sixty men attended the meeting representing 20 of the port's 24 trawlers. Some were unable to attend owing to the short notice given of the meeting.

The decision to voluntarily close the area was unanimous.

In addition to voluntarily re-adopting the seasonal

closing of the area normally closed between 15th January and 15th March, the meeting unanimously decided that the former permanently closed area of the gulf be closed again forthwith.

The meeting was told that all boats fishing in the newly-opened area over the past week were alarmed at the number of small snapper and under-sized whiting killed in the nets. They said that they were concerned for the future of these other fisheries.

The decision has been endorsed by the Wholesale Fish Merchants' Association, of which almost every prawn processor in this State is a member.

BLUE SWIMMING CRAB SURVEY

by Research Officer Heather Smith

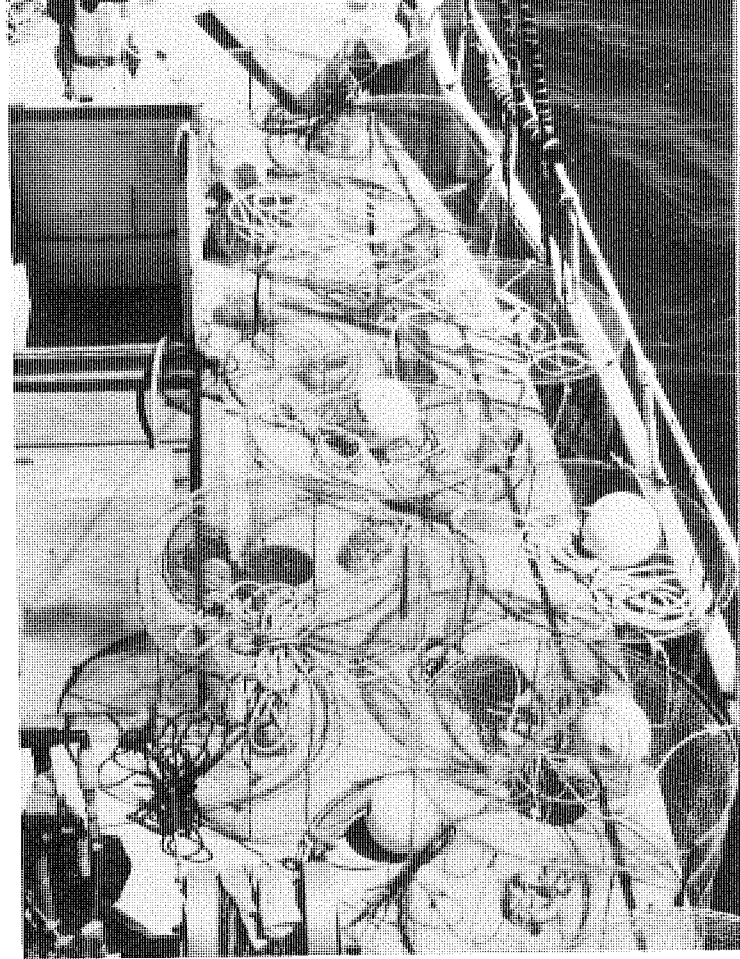
During the period November-December 1977, a crab survey was conducted at Port Gawler to investigate the influence of the following environmental conditions on the abundance and activity of blue swimming crabs:

1. Lunar cycle and associated tides (spring, dodge)
2. State of the tide (flood, slack water, ebb)
3. Light (day, night).

The survey was conducted at Port Gawler in four metres of water using a 15m vessel, the *Canowie*, and a 5m vessel with outboard motor. Four 24-hour experiments were conducted on four successive weeks (one lunar cycle) to cover all the moon phases. Twelve crab pots were used for each experiment (see photograph), all pots being set for two hours over each of the four tide states (fig. 1).

The results of the survey showed no significant difference in catches of the crabs in relation to any of the three environmental conditions. The catchability of pots relies on the crabs being active and feeding, therefore differences in catches will reflect differences in both activity and abundance. Work done on the blue swimming crab by biologists in other states suggested that the crabs were more active at night, but this was not borne out by this survey because there was no increase in catches at night which would be expected if they were more active. Many amateur fishermen state that a dodge tide is not good for catching crabs, yet once again the results of the survey do not support this statement since there was no difference in the catches of crabs during spring and dodge tides.

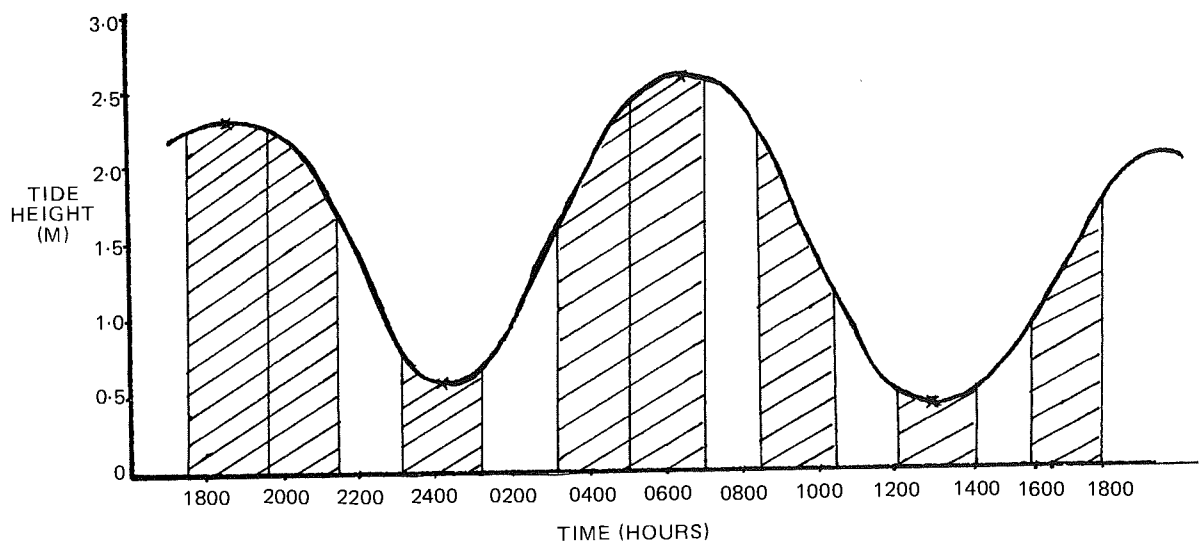
An interesting result was the decrease in females in "berry" (carrying eggs externally) during the study period as they comprised 28 per cent of the catch in



Crab pots on board the "Canowie".

the first week. However, by the last week they accounted for only 9 per cent of the catch. Associated with this decrease was an alteration in the ratio of males to females, which changed from two males to every three females in the first week through to two males to every female in the final week. This reflected a movement of females away from the area with males moving into the area during the survey period.

Shaded areas show times when the pots were in the water during a particular four-hour period.



THE SELF-PROPELLED SHARK PROOF CAGE (ABMARINER)

by John Kroezen
Secretary, Abalone Divers' Association of S.A.

vague idea that if the shark menace continued something would have to be done. These two incidents twelve months later determined him to have a go at his idea.

What he was considering was some form of mobile protection for a diver. Without being quite sure of what the vehicle shape should be, he first tackled the problem of mobility which meant some form of propulsion unit. After giving some thought to the possible alternatives: hydraulic, electric and pneumatic, he decided to experiment with pneumatics. Within a period of three to four weeks he had his first air motor with a propeller mounted on it ready for testing. The initial test was so encouraging and he could see so much potential that he decided to press ahead with the design of a vehicle to mount it in. A cage wasn't his initial idea, it just evolved that way as the only shape that could perform all the required functions. What he finally came up with was the cage shape with an air motor turning a puller propeller, mounted in a gimbal at the front, with bouyancy tanks along the top and the bag for the collected abalone hung underneath.

The air to drive the air motor was supplied by a high volume low weight industrial compressor (in effect a VW motor converted to drive on two cylinders and pump with two) that required considerable alteration to do the job.

By the middle of April the prototype hit the water.

Up until this stage Jim had been working pretty well on his own with help and encouragement from only a few of the other divers. But now the project gathered momentum, other sources of power were looked at more closely: electric motors of both DC and AC, hydraulic motors and pumps. A battery-powered tow sub was imported as a potential unit but wasn't practical. Thought was even given to waterproofing a petrol motor, but, to date the only practical method of propulsion remains the air motor.

About June, Norm Craig suggested to Jim that perhaps the exhaust gases from the motor could be used to heat water which could then be pumped down and circulated through the divers suit. Together they worked on the idea and in a very short time had an efficient heat exchanger in place of the exhaust plus a hot water suit. This was a timely development as the prop wash had the habit of continually filling the diver's suit with cold water.

Although a lot of the problems have been overcome there are still many more areas that require refinement. What we have at this stage is a machine that provides protection with its frame, mobility and manoeuvrability with the propeller mounted in the gimbal, comfort from the supply of warm water, and provides the diver with the ability to collect abalone with little restriction.

What will the future hold? Although this machine was developed for working abalone, its potential for other diving tasks is tremendous, i.e. salvage, underwater search and recovery, photography, mineral exploration, marine biology, etc.

—continued page 7



The inventor of the Abmariner—Jim Ellis.

One recent development in the abalone industry that many readers have probably read of, or heard about, is the "Shark Cage".

This machine is actually an underwater vehicle that provides a diver with mobility, protection and comfort without seriously hampering his ability to collect abalone.

On 9th January, 1974, Terry Manual was fatally mauled by a white pointer shark in the Streaky Bay area whilst collecting abalone. The immediate effect on the abalone industry was a collapse in production as divers left the industry, went tuna fishing, went on holidays or just didn't dive. Those that did continue to dive tried to restrict their diving activities to depths of 18 inches or less! Over the next few months the divers regained their confidence and whilst still a bit jittery, most returned to the water.

By the end of that year things had just about returned to normal. Then, in January, 1975, a surf board rider who disappeared at Avoid Bay was suspected of having been taken by a shark and a young lad was fatally mauled while swimming to a cray boat at Pt. Sinclair in February. With this now apparent annual upsurge in white pointer attacks the divers again became deeply concerned and started to worry about who might be next.

Several ideas were evolved and interest was shown in the possibility of an electronic shark repellent and thought was even given to trying to rig nets around diving spots.

Amongst all this concern and worry and general lack of direction of all the divers, Jim Ellis of Port Lincoln decided to have a go at an idea that he had been slowly formulating for some time. When Terry had been taken by the shark, Jim like the rest of the divers had been affected, and had formed a

INVESTIGATOR STRAIT PRAWN FISHERY

As reported in the Stop Press last issue, the closure of the Investigator Strait prawn fishing west of 137°E was lifted on 11th November, 1977 and on the same day eight vessels were authorised to trawl for prawns in the Commonwealth waters of the Strait east of 137°E.

Reprinted below is Fisheries Notice No. 79 which gave effect to these changes.

On 9th February, 1978, the Minister for Primary Industry announced that he had that day approved an extension of the period in which the eight trawlers were authorised to take prawns in the Commonwealth waters in Investigator Strait east of 137°E.

Mr. Sinclair said that the extended period would be from 12th February, 1978, to 30th June, 1978, both dates inclusive. During this period, Commonwealth and South Australian fisheries authorities will further discuss the long term management of the fishery. In a special *Government Gazette* published on 9th February, Fisheries Notice No. 79 was extended to cover this period.

On 10th November, 1977, the Minister announced that under an interim arrangement the licences of eight bona fide prawn trawlers would be endorsed to allow them to catch prawns in the eastern end of Investigator Strait for three months from 11th November, 1977. The trawlers were required to provide detailed statistics about their operations, make two exploratory fishing cruises under the supervision of Commonwealth and/or South Australian fisheries biologists and were not permitted to transfer their licences.

"All vessel owners have fulfilled their obligations so far", Mr. Sinclair said.

Fisheries Act 1952

FISHERIES NOTICE No. 79

PROHIBITION OF FISHING IN RESPECT OF PRAWNS OR SHRIMPS IN THE EASTERN WATERS OF INVESTIGATOR STRAIT, SOUTH AUSTRALIA

I, IAN McCAHON SINCLAIR, the Minister of State for Primary Industry, hereby—

(a) revoke Fisheries Notice No. 67 made under section 8 of the *Fisheries Act 1952* and published in the *Gazette* on 17 August 1976; and

(b) in pursuance of paragraph 8 (1) (d) of that Act, prohibit, for a period of three months from and including the date on which this notice is published in the *Gazette*, fishing in the area of proclaimed waters specified in Schedule 1 in respect of fish included in the class of fish specified in Schedule 2, other than—

(i) traditional fishing; or

(ii) fishing that consists of taking, processing or carrying fish of that class with the use of a boat in respect of which there is a licence under section 9 of that Act that, by virtue of an endorsement under sub-section 9 (4) of that Act, extends to authorizing that taking, processing or carrying, as the case may be.

SCHEDULE 1

Area of Proclaimed Waters

The area of proclaimed waters within the area of waters bounded by an imaginary line commencing at the intersection of the southern shore of Yorke Peninsula at high-water mark with the meridian 137° east longitude; thence south along that meridian to its intersection with the northern shore of Kangaroo Island at high-water mark; thence easterly along that shore at high-water mark to the point 138° 07.6' east longitude 35° 48.3' south latitude (Cape St. Alban light); thence northerly in a straight line to the point 138° 09.8' east longitude 35° 44' south latitude (Yatala Shoal light); thence northerly in a straight line to the point 138° 05.7' east longitude 35° 36.3' south latitude (Cape Jervis light); thence northerly in a straight line to the point 137° 41' east longitude 35° 10' south latitude (trigonometrical station, Troubridge Point); thence westerly along the southern shore of Yorke Peninsula at high-water mark to the point of commencement.

SCHEDULE 2

Class of Fish

Decapod crustacea of the family *Penaeidae* (commonly known as prawns or shrimps).

Dated this ninth day of November, 1977.

IAN SINCLAIR

Minister of State for Primary Industry

* * *

ABMARINER—continued from page 6

To date the "Cage" has aroused considerable interest in diving circles and several inquiries have come from overseas.

That, very briefly, is how the shark cage was developed. While other divers have assisted with and worked on the project full credit must go to Jim Ellis for his initiative, hard work and ingenuity in making this incredible machine a reality, and credit must also go to his wife, Marj, for she had not only to put up with its development, but with Jim while he built it.

SPECIAL PERMIT

A special permit to use a seine net (50 m in length and 3 cm mesh) and an electro fishing device to take 100 redfin perch and 100 golden carp, 10 to 15 cm in length, from Lake Alexandrina and backwaters of the River Murray has been issued to Mr. B. D. Mitchell. Mr. Mitchell is presently engaged in postgraduate research at the Department of Zoology, University of Adelaide involving fish culture in sewage lagoons.

This special permit will expire on 28th February 1979.

DEEP SEA TRAWLERS' ASSOCIATION

The Southern Australian Deep Sea Trawlers' Association was formed in December to co-ordinate and promote deep sea trawling by Australian fishermen coupled with the processing and marketing of the catch by local firms.

Ten processors and fishermen have joined the Association of which Mr. Will Nicholls is president and Mr. Michael Thomas vice-president.

Mr. Nicholls, a former Port Lincoln fisherman, is currently building a stern trawler in Adelaide. Mr. Thomas of Port Lincoln is president of the South

Australian branch of the Australian Fishing Industry Council.

Secretary of the Association is the manager of A. Raptis & Sons, Adelaide (Mr. Martin Baily) and the treasurer Mr. Mel Pach, general manager Australian Operations, Safcol.

Fishermen who wish to join must meet certain criteria, principally that they own or intend to acquire a vessel of over 60 feet.

From Port Lincoln Times 22/12/77

* * *

RECREATIONAL FISHING

Over the Christmas/New Year holiday period, Fisheries Officer Glenn Smart visited beaches and boat ramps in the metropolitan area to talk with recreational fishermen. He handed out copies of the Division's *Notes for Amateur Fishermen* and attempted to gauge the level of awareness among recreational fishermen of their responsibilities in managing and conserving the fish stocks.

Glenn found that there is a great need for education within recreational fishermen's ranks if they are to understand the aim of conserving the fish stocks so that the maximum number of people are able to enjoy this common property resource.

The time was also used to determine how effective the department has been in reaching the amateur fishermen and informing them of the department's objectives and changes in legislation and policies which affect their fishing activities.

From the survey it was apparent that there are still large numbers of occasional fishermen who are totally ignorant of any restrictions on fishing and even more fishermen who are unaware of the reasons for managing the fish stocks.

This year we hope to reach many more recreational fishermen by supplying hand-out booklets, and press, radio and television news reports; speaking at service clubs, schools etc.; setting up displays at shows, etc. (one is currently being mounted at Marineland); and by making up slide packs on the various fisheries and supplying these to country areas.

In December the Fisheries Division (in co-operation with management consultants, W. D. Scott and Co. Pty. Ltd.) applied for a Fishing Industry Research Trust Account (FIRTA) grant to undertake a study to determine the recreational fishing pressures on four preferred marine fish species (whiting, snapper, garfish and blue swimming crabs) in South Australia.

We should know the success, or otherwise, of this application in April this year.

SARFAC

A general meeting of SARFAC was held on 1st December, 1977. The matters discussed at this meeting included:

1. Amateur Rock Lobster Research

A report on his study of amateur rock lobster pots is expected from Research Officer Rob Lewis at the next meeting on 8th February, 1978.

2. Artificial Reefs

Negotiations to purchase a hopper barge from the Department of Marine and Harbors for use as an artificial reef have been dropped as that Department had received a very reasonable offer by tender—better than the Fisheries Division could have matched.

3. Talk by AFIC Executive Officer

In his talk Richard Stevens said that:

- AFIC recognises the value of recreational fishing in the community.
- Amateur gear usage is excessive—should be restricted.
- AFIC would like the support of SARFAC in an approach to the Department for more realistic penalties.
- More Fisheries Officers (Inspectors) are needed. It is recognised that the Department cannot do more at present.

4. Membership Application

A membership application having been received from South Australian Amateur Fisherman's Association, it was agreed to invite the association's President to the next meeting.

5. Submissions from Scuba Divers' Association of S.A.

The submission recommending that aquatic reserves be created at:

Second Valley-Rapid Bay and
In the vicinity of Troubridge Hill on Yorke Peninsula

was referred to the Department and individual clubs for comment.

INVESTIGATOR STRAIT PRAWN SURVEY

Following the announcement on 10th November, 1977, by the Commonwealth Minister of Primary Industry (Mr. Ian Sinclair) that eight vessels were to be authorised to trawl for prawns in Investigator Strait (see SAFIC No. 14), the Fisheries Division of the Department of Primary Industry agreed that the bi-monthly prawn surveys in the Strait should continue with all eight vessels taking part.

During these surveys South Australian Research Officer Mike King is co-ordinating the research on board the five vessels that have both S.A. Ministerial Permits and Commonwealth endorsements and the three vessels with Commonwealth endorsements only.

The first survey involving all eight vessels began on 5th December with a meeting at Kingscote of the crews of six of the eight trawlers taking part in the survey: the other two vessels work out of Edithburgh. This meeting was called mainly to enable the crews of the vessels with Commonwealth endorsements only (*Kallista*, *Sandra Michelle* and *Ocean Harvester*) to gain an understanding of the research programme and to discuss details of the survey, especially the experimental trawling that they would be undertaking in the western waters of Investigator Strait. During the survey these vessels searched for trawling areas, however, they caught very few prawns in those waters.

The five South Australian Ministerial Permit holders undertook their usual survey transects to the east of Investigator Strait (see below).

During the first night of the survey (5th December) Fisheries Officers aboard the vessels measured and recorded a sample of approximately 300 prawns from each grid area. Samples of the by-catch (squid, leather jackets, trevally, flounder, etc.) were also taken and recorded by species present, numbers and weights. The officers on board the Commonwealth endorsed vessels recorded the dominant species of by-catch taken in the western end of Investigator Strait.

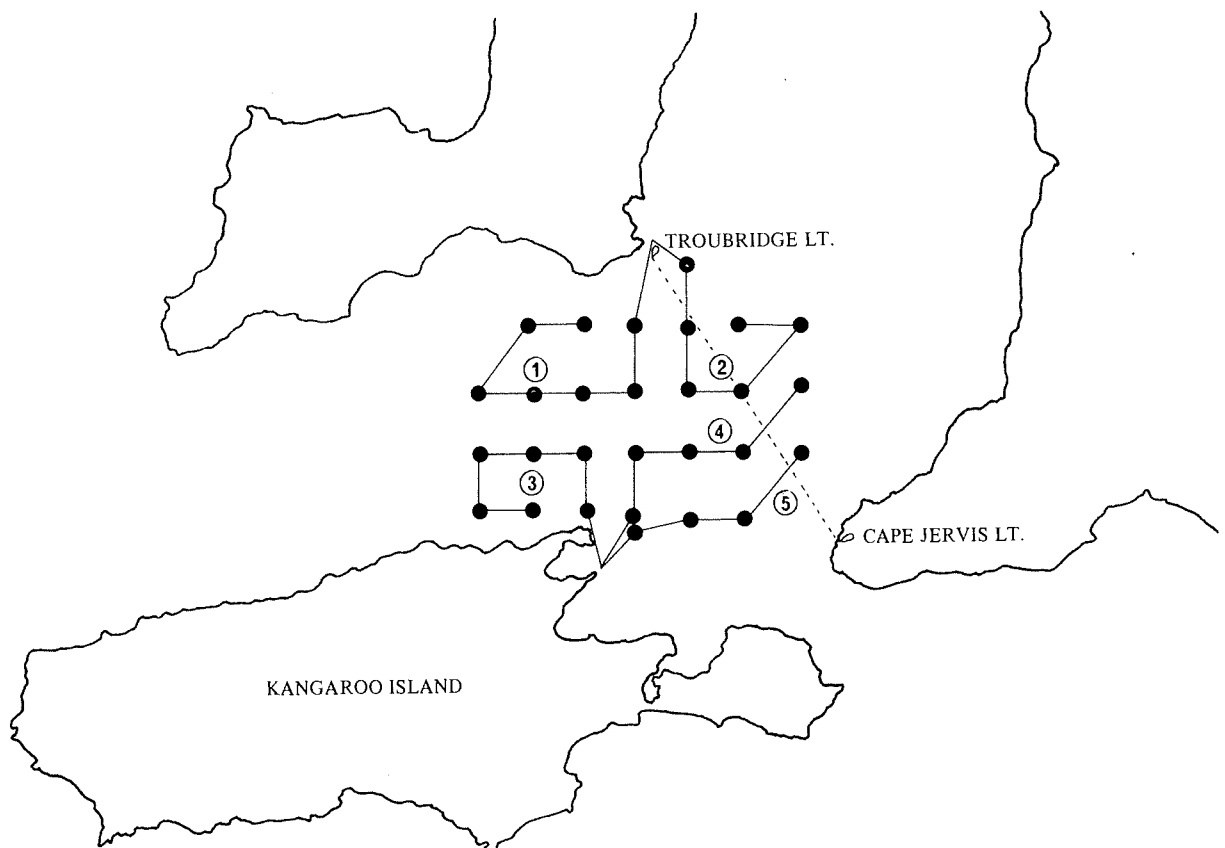
During the following night prawns were number tagged and released from the trawlers *Ocean Harvester* and *Sydney Lewis*.

The following results were obtained from this survey:

AREA	PRAWN CATCH (kg)
Transect 1	84
Transect 2	83 ¹ / ₂
Transect 3	46 ¹ / ₂
Transect 4	23
Transect 5	58
North	1
Middle	0
South	0

—continued next page

The trawl transects 1. *Invictus*, 2. *Anne Marie*, 3. *Sydney Lewis*, 4. *Ruby H*, and 5. *Speedwell*.



INVESTIGATOR STRAIT PRAWN SURVEY—continued from previous page

Measurements of prawns taken during the survey have proved interesting as these show that three separate age classes of prawns are present in the population.

Twelve people went on board the eight boats to carry out this survey. These included the prawn research team of Mike King and Barry Lee, the by-catch research team of Heather Smith and Bill Ellis, Minlaton Fisheries Officer Bob Taylor, Fisheries Officers off the *Warrendi*—John Hardie and Neville Clifford, and a biologist from the Fisheries Division, Department of Primary Industry, Peter Millington.

In line with the Minister for Primary Industry's press statement (see *SAFIC* No. 14) that the new Commonwealth licences are to be subject to conditions, the following points, recommended by the Commonwealth, were agreed to by the State:

- (1) The boats to use the log books used by South Australian boats.

- (2) South Australia to continue to organise bi-monthly surveys as previously structured.
- (3) Mr. King to continue to co-ordinate the surveys.
- (4) DPI would hope for regular involvement of a Canberra-based officer to maintain liaison and assist with the survey. (The Commonwealth has asked the State to organise labour to operate on the three boats that trawl in Commonwealth waters only).

When discussing these points Mr. E. Purnell-Webb, First Assistant Secretary of DPI Fisheries Division, said that as the three new boats had previously indicated an interest in western Investigator Strait it might be advantageous if they undertook surveys to the west of the closed area.

The February survey of prawns in Investigator Strait was carried out from 31st January to 3rd February. Prior to this a ten-day juvenile prawn survey was carried out in the inshore waters around Kangaroo Island.

* * *

200-NAUTICAL MILE FISHING ZONE

The Minister for Primary Industry, Mr. Ian Sinclair, as Chairman of the Australian Fisheries Council (comprising all Federal and State Ministers with fisheries responsibilities) announced on 19th January that in view of the great interest shown both in Australia and overseas in developing Australia's offshore fisheries, Council had examined and considered out of session as a matter of urgency the report of its Working Group on the 200-mile Australian fishing zone.

Mr. Sinclair said that it was pleasing to note that members of the Council were unanimous that the Working Group's recommendations on feasibility fishing should be adopted and form the basis for considering approval of feasibility proposals including those already received.

The guidelines for feasibility fishing including some element of foreign participation are set out in detail in the Working Group's report.

The Council has also agreed that the report of the special Working Group established by the Council to advise on management strategies and policies in relation to the 200-mile Australian fishing zone should be made public and copies will be available from the Department of Primary Industry, Canberra. Copies of the report are currently being distributed to those who made submissions to the Working Group, industry associations and overseas representatives who have expressed interest in the Australian fishing industry.

Mr. Sinclair added that Council's agreement on the guidelines for feasibility fishing at this stage cleared the way for consideration of proposals which might commence prior to actual

implementation of the 200-mile Australian fishing zone. "I am confident that this move by the Council will result in early developmental work in Australia's offshore fisheries", Mr. Sinclair said.

WORKING GROUP'S REPORT

The 76-page report on the Australian fishing zone recommends that action be taken by governments to assist the Australian fishing industry to develop under-exploited and unexploited fisheries within the zone by—

- providing improved resources data;
- providing appropriate financial incentives.

The report also recommends that decisions involving participation by foreign fishermen be taken by Federal and relevant State Ministers and that conditions governing operations of foreign fishermen in the zone and guidelines for feasibility ventures set out in the report form the basis for control of foreign fishing in the Australian zone.

These recommendations have been agreed to by the Australian Fisheries Council out of session.

The Council decided to further discuss at its next meeting a recommendation contained in the report that the existing ship-building policy be modified to allow greater access to cheaper overseas vessels. Council also agreed that a small committee should further discuss another recommendation that an Australian fishing zone committee be established.

(It was reported in the Australian on 13th January that Australia will be introducing the 200-nautical mile fishing zone on 31st March. Ed.)



OVERSEAS VISITORS:

Eleven fisheries officers from developing countries were in Adelaide in November on an International Training Course in Fisheries Practices organised by the Australian Development Assistance Agency. While in Adelaide they visited processor and aquaculture establishments. Our photographs, taken at a reception given by the Fisheries Division, show:

Top (from the left): Richard Stevens (Executive Officer AFIC), Boey Chee Cheong (Singapore), Heather Smith (S.A. Fisheries) and Abu Niam Assik (Indonesia).

Centre: Bob Mathie (SAFCOL), Mike King (S.A. Fisheries), Teo Chee Kweng (Sarawak), and Kim Wing Chan (Hong Kong).

Bottom: Dave Potter and Evelyn Wallace (S.A. Fisheries), Jeffery Tavaole (Papua New Guinea) and Munesh Munbodh (Mauritius).



ROCK LOBSTER RESEARCH CRUISE TO WEST COAST

From 19th October to 5th November 1977 the F.R.V. *Joseph Verco* was used to carry out research into the western population of the southern rock lobster.

This was done by setting 80 pots on inshore and offshore grounds to provide rock lobster for tagging. Mark, release and recapture techniques were used to determine growth rate, movement, and fisheries parameters. Selected hydrographic samples were also taken to determine the water mass type(s) present and any changes in the water mass.

Six hundred and fifty-five rock lobsters were captured during the cruise with 933 pot lifts. The first 50 rock lobsters were double tagged to test the retention rate of the new toggle tag (shaft diam. 0.3 mm) of which a trial 1 000 were made by the Sheltered Workshop in Mount Gambier. Eleven rock lobsters (1.7%) were below the L.M.L. of 98.5 mm T.C.L.

Of considerable interest was the proportion of females with fully developed ovigerous setae or presence of spawn—all females above 113 mm T.C.L.—suggesting that the size at the onset of reproduction is 110-115 mm T.C.L. It was expected that this would not be the case but the proportion would be low as is the situation in the Coorong grounds north of Kingston. Due to this high proportion, water sampling during West Coast cruises is to be given higher priority, particularly during the summer months when a cold water upwelling would be expected to occur. Stratified sampling in 33 fathoms of water indicated the presence of a slight spring stratification.

A number of dives in areas of differing substrates failed to produce any evidence of larval settlement in the region, although dives were conducted in areas similar to settlement areas in the South-East.

A second research cruise to the West Coast was carried out from 7th to 20th December 1977 when approximately 700 rock lobsters were tagged. Similar hydrographic data were collected on this trip; there was still no indication of any upwelling.

The next research cruise will be from 14th to 20th February. This will take place in the northern Coorong area as the trip has had to be shortened due to the slipping of the F.R.V. *Joseph Verco* in late February.

Recaptured Rock Lobsters

Recaptured tagged rock lobsters should be handed to Mr. Gilmore of Streaky Bay, Mr. Murch of Elliston or to a Fisheries Officer for measurement.

The following information is also needed:

- Date caught
- Depth caught
- Location
- Tag number
- Name and address of fisherman.

For a legal size rock lobster the cash price is paid plus 50 cents reward for the tag. After measuring and recording the number of the tag, undersize rock lobster should be returned promptly to the water with the tag intact. A reward will be paid for the tag number together with the information listed above.

* * *

DEEPSEA TRAWLING

Entry to the trawl fishery in Commonwealth proclaimed waters adjacent to New South Wales, Victoria east of Cape Otway, and the northern and eastern coasts of Tasmania was limited to two vessels of 32 metres to 45.7 metres in length from each of the three States on 2nd August by Fisheries Notice No. 77. This Notice also included an absolute prohibition on vessels over 45.7 metres in length; those under 32 metres were not effected. (See *SAFIC* No. 14 (November 1977) p. 27).

At the time of writing there were two firm applications from South Australian based vessels to enter the offshore trawl fishery. In both cases entry of the vessel nominated required some alteration of existing fisheries policy. The Minister of Fisheries has approved an amendment to the vessel replacement policy for Spencer Gulf to allow large vessels to be moved to the offshore trawl fishery under specified conditions. (This assisted one vessel.) The other application was for a vessel in excess of 32 metres.

The Department is negotiating with interstate fisheries authorities and with the Fisheries Division

of the Department of Primary Industry for two vessels out of South Australia to enter the established south eastern trawl fishery. This will require complementary restrictions in some waters off South Australia, but we expect that waters west from Kangaroo Island will remain totally unrestricted.

The Department has some funds left from the proceeds of sales of fish taken by the *Zeehaan*. These funds will be used (possibly in February) to extend the survey by that vessel west from the "plateau" off Robe. This will again be a joint operation by the South Australian Department of Agriculture and Fisheries and the Commonwealth Department of Primary Industry.

Advance copies have been received from the Fisheries Division of the Department of Primary Industry of *South East Australian Deep Water Trawl Survey* (Fisheries Report No. 15)—a report of the first phase (February to June 1977) of the trawl surveys undertaken by *Zeehaan* and *Craignim*. Further copies should be available shortly from the Australian Government Publishing Service.

FROZEN PRAWNS FOR HOME MARKET

South Australian prawns are now being processed into frozen packs for the local market.



The new consumer pack

The Australian Bight Fishermen's Society Ltd. of Port Lincoln released their new consumer pack of uncooked prawns in mid-December. In attractive 375 gram net weight packs, the headed and shelled prawns cost \$3.50, the equivalent of almost one kilo of whole prawns.

The packs, sold firstly in Port Lincoln, will be distributed in all States. Featured on the back of the packs are recipes, two of which we reprint below by kind permission of Australian Bight Fishermen's Society Ltd:

MARINATED BARBECUE PRAWNS:

De-vein prawns and marinate for one hour in a mixture of $\frac{1}{4}$ cup of coconut milk, 1 teaspoon of soy sauce, 1 small clove of crushed garlic, 1 teaspoon

of ground cummin, juice of $\frac{1}{2}$ lemon, dash salt and pepper.

Thread prawns on skewers or place direct on hot plate, turning frequently until transparent colour has gone. Do not overcook. Serve with lemon wedges. (To make coconut milk, place $\frac{1}{4}$ cup desiccated coconut in $\frac{1}{2}$ cup of hot water for 10 minutes. Squeeze coconut to extract milk and strain.)

CURRIED PRAWNS:

Melt 3 tablespoons of butter in saucepan, add $\frac{1}{2}$ tablespoon of curry powder, one small, finely chopped onion, 2 teaspoons of salt and 2 of sugar and stir. Add 2 tablespoons of flour, 2 cups of milk and stir until thickened. De-vein prawns and cook for 3 minutes. Serve over hot rice.

* * *

CRUISE REPORT

by Research Officer Keith Jones

Between 20th and 29th November 1977 the F.R.V. *Joseph Verco* was used for investigations into aspects of the ecology of snapper in Spencer Gulf and also to tag fish for later determination on growth rates and fishing mortality rates.

Areas where snapper were caught and tagged included southern Spencer Gulf (Buffalo Reef, Rosalind Shoal) and upper Spencer Gulf at Cowled's Landing, Yarraville Shoals, Eastern Schoal and Fitzgerald Bay. A total of 243 fish were tagged. A small percentage of the fish caught were retained for dissection which showed that the females were not yet in spawning condition. An examination of the stomachs showed that all fish taken in southern Spencer Gulf were feeding on sand crabs and those from upper Spencer Gulf were feeding mainly on blue swimming crabs.

An interesting observation of one fish (87 cm length) caught offshore from Whyalla was that the stomach contained remains of a rock lobster carapace. The nearest known rock lobster grounds occur off Point Gibbon, near Cowell, approximately 156 km south-west of the patch where this fish was captured. This discovery may indicate that snapper from Cowell and Whyalla belong to the same population. It is hoped that results from the tagging programme currently being undertaken in these waters can be used to test this hypothesis.

A relationship was also established between the length of the fish caught during the cruise and their weight.

(See SAFIC No. 13 for previous whiting and snapper research cruise report, Ed.)

SUSPENSION OF AUTHORITY

The following appeared in the *Government Gazette* on 19th January, 1978:

FISHERIES ACT, 1971-1977

Notice Under Section 37 (3) (b)

Suspension of an Authority (Rock Lobster)

I, THOMAS MANNIX CASEY, the acting minister of fisheries, to which Minister the administration of the Fisheries Act, 1971-1977, has been committed hereby suspend pursuant to section 37 (3) (b) of the said Act, the operation of the rock lobster authority held by Mr. Ian David Von Stanke, of Carpenter Rocks 5291, in the State of South Australia, skipper in respect of the fishing vessel *Miss Portland* registered No. LCC for a period of three months commencing on the 1st day of February, 1978.

Dated this 16th day of January, 1978.

T. M. Casey. Acting Minister of Fisheries
D.A.F. 29/1/3018.

ABALONE CULTURE

A meeting was held in Hobart, Tasmania, on 15th December 1977, to discuss the future prospects for the Tasmanian abalone fishery and to hear of the overseas trips by Messrs. John Grant (fisheries biologist) and Adrian Cuthbertson (abalone fisherman).

John Grant had spent three months in Japan on a Japanese/Australia Technical Assistance Grant and Adrian Cuthbertson, who received a Churchill Scholarship last year, had spent three months overseas, mainly in Japan and U.S.A., looking at the aquaculture of abalone.

South Australian abalone divers, Mike Vandeppeer and Norman Craig, with Mrs. Craig, attended the meeting, as also did the Chief Fisheries Officer, Mr. A. M. Olsen.

The South Australians showed a film of the underwater operation of the self-propelled shark-proof cage. This film was made for Jim Ellis, the inventor of the cage, and for the secretary of the S.A. Abalone Divers' Association, John Kroezen, by amateur underwater photographer, Volker Zabo. The audience of mainly abalone divers and fisheries officers were very interested in the film.

CSIRO STUDIES IN THE BIGHT

The CSIRO have chartered the F.R.V. *Courageous* from the Courageous Fishing Co. Pty Ltd for a new study by the Division of Fisheries and Oceanography of the community ecology of the pelagic and benthic organisms (including fish) in the Great Australian Bight. The plan was for the *Courageous* to leave Sydney for the Bight on 1st February.

The *Courageous* has an overall length of 93 ft, beam 26 ft and draft 11ft 6 inches. She is fitted with specialised electronic equipment for the enumeration of fish stocks.

ABALONE INDUSTRY

At the time of going to press (January) the abalone industry was undergoing a major readjustment period with abalone at \$4.50 kg, a decline from its peak of over \$7 kg in April 1977.

The major buyers and exporters said that two main factors had caused this downturn: buyer resistance to the high price paid in April 1977 and, coinciding with this, the entry of the Chileans to the Japanese market with a shellfish, "elephant's foot", which they were marketing in competition with abalone. The Chilean product is not of such a high quality as the Australian abalone but costs only a third to a half of the Australian product.

Contrary to some reports received, processors were not all sitting on large stocks of abalone. However, Safcol was only buying from regular suppliers and A. Raptis and Sons were buying on a bonus system where they paid \$2.50 per kg for the abalone and then, after marketing, the labour costs, etc., were extracted and the balance paid to the diver. Bight continued to buy abalone from S.E.A. Products (see below). General Manager, Joe Puglisi, said that they had a lot of confidence in the overseas market, particularly if the product is marketed in the manner required by the buyers. They will continue in the joint venture with S.E.A. Products.

Those buyers spoken to felt that with careful monitoring of the market situation over the next twelve months the abalone industry would continue to expand although it would not reach the same height as in April 1977.

The sales of greenlip abalone were not as widely affected as blacklip. Greenlip has a much wider market acceptance amongst South-East Asian countries.

S.E.A. PRODUCTS

In January the abalone divers on the West Coast formed a company called S.E.A. Products. This was done to enable the abalone catch to be grouped together and to give the divers more selling power and direct contact with overseas buyers.

The President of S.E.A. Products is Norman Craig and the Secretary is Peter Thomas, both of Port Lincoln.

The company is selling through Australian Bight Fishermen's Society Limited as a joint venture.

MOVING

The Licensing and Inspection Sections of the Fisheries Division are currently located on the 20th floor of the Grenfell Centre, 25 Grenfell Street, Adelaide. This is a temporary location only. They are due to move to a permanent location on the 16th floor later in the year (possibly May).

FIFTY YEARS' FISHING

Quite a lot of the last 50 years' history of the State's scale fishery has been meticulously recorded in log books kept by Mr. Bert Fook of Warooka.

Bert (73) fished all around Yorke Peninsula from his camp at Sandy Point, near Foul Bay from 1927.

In the 1930's Bert introduced the idea of icing fish. With his plant, i.e. a truck, boat and ice chest, and ice bought in Adelaide, he would travel to wherever the fish were biting, catch it, ice it down and be back at the market within three days. On one occasion he remembers travelling over to the camp and back to the market on four consecutive days.

Both of Bert's sons (George and Bob) are Class A fishermen, fishing out of Warooka. Bert still keeps an eye open for 'mulloway weather' and when the signs are right he goes out with George or Bob and almost invariably they make a good haul.

The log books and consignment docket, for 1927 to the mid 1960's are now being studied by Dr. Keith Jones, the scale fish biologist with the Fisheries Division.

The consignment dockets to the Adelaide Fish Market show the number of boxes of each type of fish caught per week and the prices paid. In his personal logs Bert recorded what fish were caught and where, how they were caught and the weather conditions, all of which supply much-needed information for research.

The prices paid make interesting reading, e.g. 18 lbs. of whiting caught at Balgowan on 17th April, 1940 made 1/5 lb. at the Adelaide Market, a total of £1.5.6.

During the war years when the late Frank Moorhouse was Chief Inspector of Fisheries, Bert took him on a number of trips to the West Coast (Bairds Bay, Venus Bay, etc.) to look for fish suitable for netting. At that time there were a number of hook fishermen on the West Coast but no-one using nets. Both Frank and Bert had faith in netting, Bert so much so that he took no payment for these trips preferring to settle for the catch.

When honorary inspectors were appointed during Frank Moorhouse's time, Bert was one of the first to be appointed. He still has his card.



Bert Fooks on board his 21 ft fishing boat "Why Hurry" in 1962.

Anyone who sees the film on tuna fishing that Bert made in the early 1950's soon realises what hard work tuna fishing is. It shows the decks awash while the fish are being hauled in. Bert also made a film in the 1930's on fishing for mulloway, mullet and shark around Yorke Peninsula and at Venus Bay. This highlights the amount of fish that used to be caught.

Bert has also helped the Department over the years by bringing in unusual creatures, fish in spawn, etc., and by taking water samples.

* * *

JAPANESE VISITOR

During the week 5th to 9th December, Mr. Osamu Ohba (Sam) visited South Australia to learn more about Australian fisheries and to visit some old friends. Mr. Ohba is a gear designer working for a private fishing company, Taito Seiko Co. Ltd., in Japan.

He spent August to November 1977 in Tasmania working with Tasmanian trawl fishermen offering his expertise in the trawling field. This was part of the continuing co-operation between Australia and Japan which allows for Japan to offer technical

assistance in exchange for the continued access of Japanese boats to Australian ports.

On his way home to Japan Mr. Ohba made a private visit to South Australia including Port Lincoln where he toured the processing plants of Bight Fishermen's Society, Safcol, Tuna Processors, Kemp Fisheries and Domacks.

Mr. Ohba showed keen interest in the South Australian fishing industry, in particular the scale fishery and the possibility of establishing a trawl fishery off the West Coast.

EASING OF "FREEZE"

In early January some of the constraints on professional rock lobster fishermen caused by the "freeze" on licences in the State's scale fishery were eased.

Announcing this the then Acting Minister of Fisheries, Hon. T. M. Casey, said, "After discussions with fishing industry representatives, it has been agreed that shark and scale fish may be taken by all rock lobster fishermen."

Until recently this was the case but after the freeze was announced some authorities were offered for catching rock lobster only.

"These were found to be too restrictive", Mr. Casey said, "and so it was decided to ease the freeze slightly to help the rock lobster fishermen."

The constraint on rock lobster fishermen who transfer out of that fishery has also been eased.

As a means of limiting the number of licences in the scale fishery, rock lobster fishermen who

transferred their authorities after 30th August were not able to retain a fishing licence. However, such a fisherman who applies to transfer his rock lobster authority to a Class 'A' licenced fisherman may now request a licence to take scale fish.

"Any ex-rock lobster fishermen who have been affected by this policy should contact the Fisheries Division of the Department of Agriculture and Fisheries to enable their participation in the scale fishery to be considered," Mr. Casey said "but only if the authority is being taken up by a fisherman who already holds a Class 'A' licence. We will not create any new licences through transfer, and if the new entrant to the rock lobster fishery did not previously have a licence, then the previous authority holder will not convert to scale fishing."

(Hon. T. M. Casey was Acting Minister of Fisheries while the Minister of Fisheries, Mr. Brian Chatterton, was on holiday in December/January, Ed.)

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ROYAL ADELAIDE SHOW

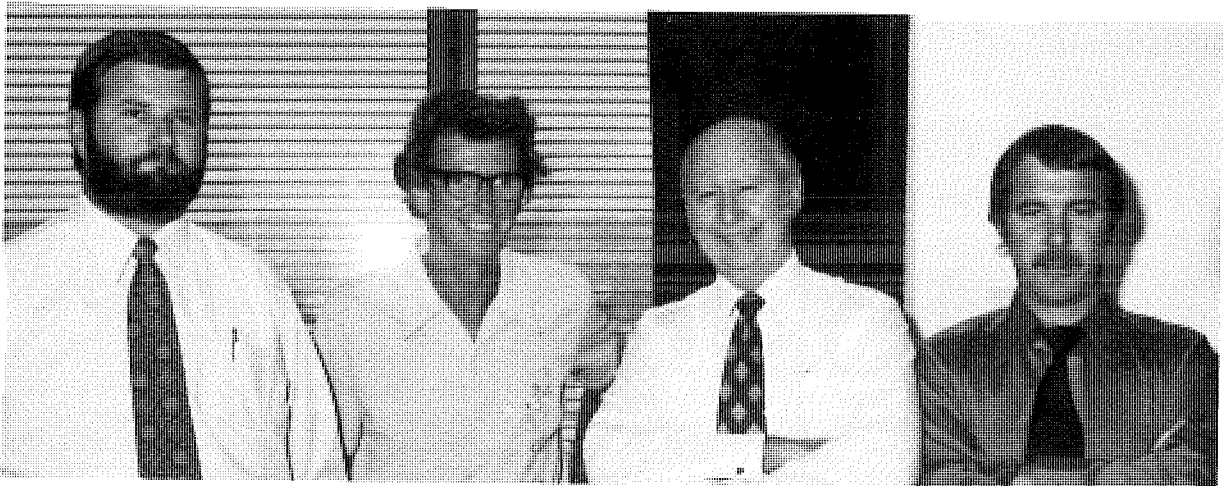
What fish should we promote at the 1978 Royal Adelaide Show?

We have the opportunity of having fish cooking demonstrated in the Department of Agriculture and Fisheries' pavilion at this year's show and are interested in hearing what fish you think we should feature.

If you have any suggestions on this please contact the Editor, Evelyn Wallace, at Box 1671, G.P.O. Adelaide or on 227 3918.

* * *

The Northern Prawn Advisory Committee met in Adelaide on 1st December 1977, Adelaide being the most convenient city for such meetings. Our photograph shows the industry members of this committee: (from the left) Queensland AFIC representative, Bill Power; Graham Shooter, representing Queensland prawn fishermen; John Hickman, chairman of AFIC (N.T.); and Paddy Arbuthnot representing the catching sector of the Northern Territory prawn industry.

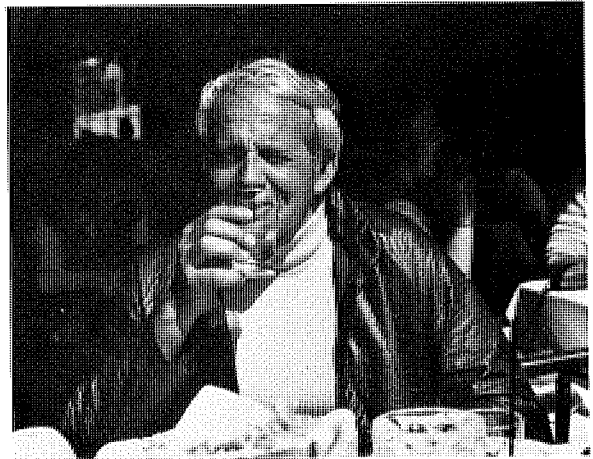


FISHING INDUSTRY TOUR

Eleven Port MacDonnell fishermen and wives went on the Fishing Industry Tour to the U.S.A. — Taking in the Seattle Fish Expo — In October last year. This was the biggest group from any port in Australia and included the President, Secretary, and two committee members.

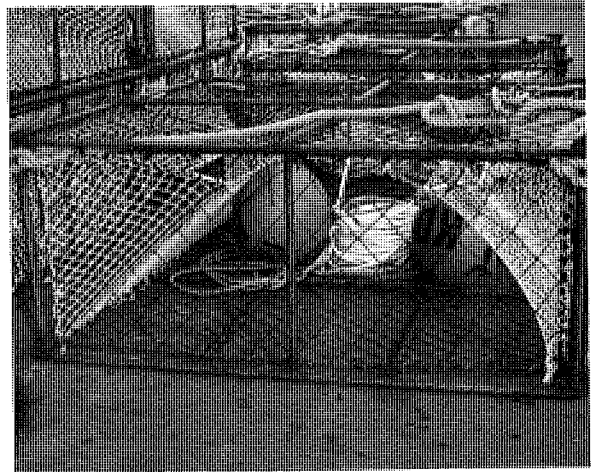
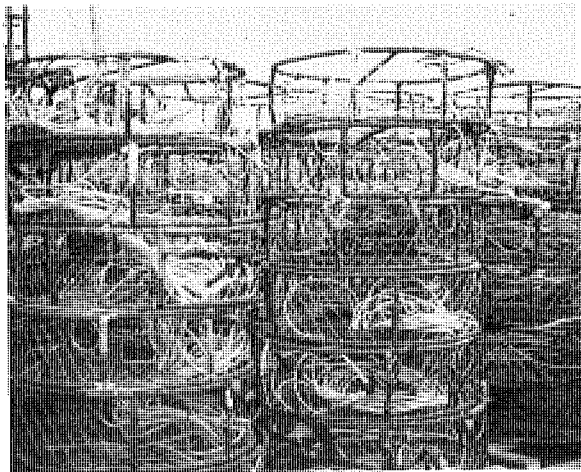
We are indebted to Dick and Elaine Williams for the photographs.

Don Cawthorne, President of the Port MacDonnell Professional Fishermen's Association (right), dining at Sabella's restaurant, Tiberton, San Francisco.



Crab Pots: The round ones (left) are Dungeness crab pots used in California. Cost per pot — approx. \$55.00. The stainless steel wire covering is hand woven. The rectangular pots (right) are for catching

king crabs. These photographs were taken in Seattle where the pots were awaiting shipment to Alaska.



The albacore and salmon boat, "Leonard G" of Crescent City, California owned by Jack and Donna Tesch. Donna (on the wheelhouse) is President of the Commercial Fishermen's Wives Association. Crescent City turned it on for the group—lunch and dinner at their Culture Centre.



VISITS BY ASSISTANT DIRECTOR

by Ian Kirkegaard, Assistant Director (Fisheries)

Since being appointed six months ago as the Assistant Director (Fisheries) in the Department of Agriculture and Fisheries, I have attempted to visit as many fishing centres as possible. The purpose is to visit local fisheries officers and to meet the fishermen and discuss their problems at first hand. So far this has included visits to Port Lincoln (3), Kangaroo Island (2), Port Augusta, Port Broughton (2), Riverland (2), the South East, and Yorke Peninsula (2). It has not been possible to visit Ceduna, but the west is high on the priority list.

Where possible, staff from the city office accompany me on these visits so they can better appreciate the fisherman's problems. The visits are to have discussions with recreational and professional fishermen. The visits to Port Augusta and the Riverland have been particularly valuable, as I have been able to attend Association meetings to discuss the scale fisheries, which at present have the most serious problems of all our fisheries.

I do not want to set targets for visits. I would hope to visit each major area at least annually. But

centres with pressing problems will need more regular visits. Further meetings are already scheduled for Port Augusta and the Riverland.

The Port Augusta meetings are shaping as major advisory/discussion sessions on the scale fishery. Port Augusta appears to be the most convenient place for a majority of scale fishermen. I expect that we will need several more meetings to clarify positions, and I have no intention of trying to solve all the problems in any fishery in one massive meeting. The system that seems most promising is for the Department or Industry to create a discussion paper on any new proposal. A discussion paper is more useful than a flat resolution, because it can cover a range of alternatives.

Much of the success of the meetings so far has been due to the assistance of AFIC in organising the meeting, setting out the agenda, and providing a chairman and secretary. The fishermen have also been very co-operative, and the meetings, while open and lively, have been productive.

* * *

NEWS IN BRIEF

STUDY TOUR

Rock Lobster Research Officer Rob Lewis will be undertaking an overseas study tour later this year to hold discussions with lobster research workers and to look at current research being undertaken in a number of countries, including Britain, U.S.A., Canada and New Zealand.

CONSOLIDATION OF PROCLAMATIONS

Proclamations under the Fisheries Act are currently being tidied up. A few changes that most people believe are long overdue are being included. The proposed revision should be circulated to recreational and professional fishing associations, councils and fisheries officers some time in February.

BOATING ACT

Amendments to the Regulations under the Boating Act 1974-1975 that appeared in the *Government Gazette* dated 25th October, 1977 were designed to further control the activities of all types of craft on the River Murray, Lakes and Coorong in an effort to improve the standard of safety of the boating public within those waters.

REPORT BY PROF. COPES ON THE ROCK LOBSTER FISHERY

The Department expects to receive the final drafts of this report in January 1978.

The report will be considered in the first instance by the Minister of Fisheries.

ART AWARD

The award for the best illustrated children's book from any origin made at the Book Week in Linz, in Austria, on 25th October, 1977, went to Roger Haldane of the Port Lincoln Haldane family.

Roger went to Linz to receive the award of \$850 Australian, which was for the illustrations in the German translation of "Maggie Island". In 1975 Roger received \$1 000 from the Visual Arts Board as co-winner of the best illustrated children's book of the year for these same illustrations.

CLOSURE OF GULF OF CARPENTARIA PRAWN FISHERY

Taking of banana prawns in the Gulf of Carpentaria was prohibited from midnight (eastern standard time) on 31st December 1977 to midnight (EST) on 15th March, 1978.

As in previous years, the taking of all other species of prawns also was prohibited in the Cohen/Calvert Rivers area, in areas encompassing Fog Bay, Castlereagh and Boucaut Bays and off Hawknest Island.

FISHERIES MANAGEMENT AND THE NEW FEDERALISM

In an article, *Fisheries management and the new federalism*, published in the journal of the Australian Political Studies Association, the Minister of Fisheries, Mr. Brian Chatterton, and Ms Lynne Arnold, an assistant to the Premier on primary industry matters, give the historical background to the States' struggle with the Commonwealth for control of State-based fisheries, particularly in relation to the hopes that the announcement of the 'new federalism' brought in December, 1975.

The authors argue the case for State control of State-based fisheries while accepting that in other fisheries, such as tuna, **where the stock is contiguous with several state coastlines and is at times in extra-territorial waters**, joint management is desirable and in other fisheries (e.g. pelagic trawl fisheries and the setting and control of export standards for processors) Commonwealth control only is essential.

In charting the development of legislation, the article says:

"Conflict is now arising because, following the proclamation of the Commonwealth Fisheries Act in 1952 and nine amendments since then (the last in 1975), the Commonwealth has not only exercised its judicial rights over foreign fishermen, but has also extended steadily increasing control over Australian coastal fisheries. This is being achieved through the development of joint management policies with the states based on a Commonwealth licensing system (necessary for fishermen operating in proclaimed Commonwealth waters) which relies on state fisheries departments to carry out some administrative and all inspectorial functions as agents of the Commonwealth.

"The consequence of managing fisheries under dual State/Commonwealth legislation is that there is an unavoidable and wasteful duplication of public service administration provided by the respective government. Each government employs public servants who are essentially engaged in identical tasks of drafting and administering Acts and regulations; consulting with fishing industry representatives and individual fishermen; and developing management policies and strategies.

"A serious consequence of joint management is the insidious shift of decision making power from Federal and State Ministers to public servants that is occurring as the result of the growing institutionalisation of various decision-making functions. For instance, the increasing complexity of dual management regimes has resulted in the break-up of the Standing Committee of Fisheries (State and Federal Directors of Fisheries meeting together) into regional groups of officers.

"Management conflicts and proposals are negotiated and consensus achieved at these separate meetings. They are remote from, and almost totally inaccessible to, members of the fishing industry. Decisions made at these meetings are then referred to the Standing Committee of

Directors, and finally, to the Council of Ministers which meets once a year—usually for one day.

"Ministers rarely find the time, or have the inclination, to upset these elaborately achieved consensus decisions. When the South Australian Minister of Fisheries tried to reverse this flow of policy by asking Fisheries Council to establish principles of agreement and direct regional meetings of officers to negotiate the details, this was rejected by the 6th Council meeting in 1975. This shift of power from the political arena has grave implications for the democratic process generally, and for the concept of political and public accountability in particular. This isolation of the decision making process from fishermen is a potential political danger. Dual administration imposes unnecessary costs on the fishing industry which finds it necessary to lobby both State and Federal governments to transmit industry views. Further, the shared responsibility makes it difficult for fishermen to identify which people, both at ministerial and officer level, are responsible for a particular management decision and who will respond to particular needs within the industry. . .

"State-based fisheries are defined as those fisheries where the basic stock is found in State waters, where fishermen are residents of that State and operate from that State, and where 75 per cent of the total catch of the fishery is landed within that State. Where this type of fishery is concerned, the States feel that there is little justification for the Commonwealth refusal to vacate or delegate any spill-over into Commonwealth waters to State legislative jurisdiction. In an attempt to resolve the growing conflict, the Minister for Primary Industry (Sinclair) proposed to the 1976 Fisheries Council that a common Commonwealth licence be instituted . . .

"However the States see this, not as a rationalisation of administration, but rather as a bid to strengthen and enlarge Commonwealth control over their existing State fisheries legislation. They are suspicious of both the motive and the feasibility of the scheme.

"The proposal for a single Commonwealth licence for all Australian fishermen would be of little real benefit. While it apparently reduces the amount of administration and form-filling by fishermen the document itself would no longer be the fishing licence. It would be somewhat similar to a driving licence, but it would still be necessary to obtain an endorsement or authority for the fisherman to gain the right of entry into a particular fishery. Not all fisheries are closed so a general fishing licence would have some value, but this would rapidly diminish as more and more fisheries are brought under management regimes which involve licence limitation. The 1976 Fisheries Council broke up with the Commonwealth going off to prepare a more detailed case and the States to gather their defences for the next round.

"What the question of a common licence illustrates is that fisheries management by licence limitation is introducing a new and as yet largely unperceived dimension of political conflict to the Australian

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fishing industry, and one which requires that governments must establish clear spheres of authority if they are to avoid adding to this growing political conflict. Political conflict arises as governments disagree on areas of jurisdiction, as public servants barter and negotiate for the right to determine policy and to develop administrative empires; and lastly, but by no means least, as sections of the fishing industry battle to share the finite resource which has become so valuable through management designed to prevent over-exploitation.

"Already ideological differences between a State Labor government and a Federal Liberal-Country Party government have caused conflict in the South Australian prawn fishery.

"There, the basic policy conflict is whether the resource shall remain with individual fishermen or whether large scale processors shall be given the chance to monopolise the industry."

There followed discussions on the allocation of new authorities, AFIC and other representative organisations, and "the growing pressure on governments to make sure that the traditional rights of amateur fishermen are not eroded by the demands of professional and part-time commercial fishermen."

"There is a growing realisation among governments and a growing debate within the community about the objectives of future management regimes. Management regimes inevitably create a particular type of social structure within the wider community, and different groups will have different ideas about the type of social structure they want.

"Decisions made about allocation of the managed resource can mean either an industry based on large absentee owners employing skippers and crew, or family owner units operated on a

partnership basis. It can mean the containment of processing factories and their dispersal among fishing settlements or the ungoverned development of factories and their concentration in centralised urban locations. Fisheries management policies can determine whether existing small fishing villages and/or combined fishing and farming villages will survive or become economically depressed and die. Pressure on fishing resources by amateur fishermen, particularly near major capital cities, will create conflicts between the majority (the amateurs) who individually receive little economic value, and the minority (professional fishermen—both full and part-time) who depend on the resource for their income. Tourism in fishing villages and towns could flourish or fail as a result of the resolution of this particular conflict.

"A co-operative federal structure would allow these conflicts about social objectives to be resolved on a consensual basis, in accord with specific fisheries and in response to needs of particular regions."

Summing up their view of federalism the authors wrote:

"Federalism is a system where, ideally, the national government should deal with matters of national interest, and where State governments should deal with matters of relevance to their own residents. While the "new federalism" may have promised to recognise State dominance in areas where this was a clearly demonstrated rationalisation of administration, that promise still seems very far away in the case of fisheries management in Australia."

Dr. D. Jaensch ed. 'The Politics of New Federalism' APSA 1977 by permission of the publisher.

Anyone who would like a copy of this special issue of the journal should contact Dr. Jaensch at Flinders University (cost \$7.50).

* * *

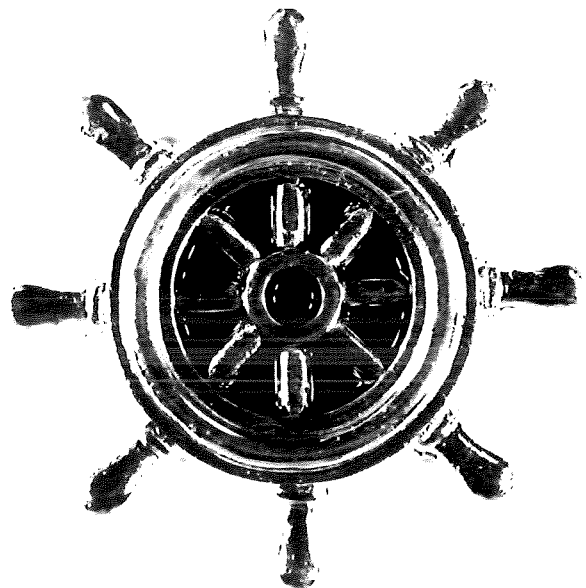
FISHERMAN'S BADGE

Shown at right is the fisherman's identity badge being produced by the Port MacDonnell Professional Fisherman's Association.

The secretary of that association, Dick Williams, says that the badge (in black and gold) will be available shortly from the association at a cost of \$3.00.

"The badge will be available to all licenced (State and Commonwealth) commercial fishermen", Mr. Williams said. "For promotion our theme is — 'Wear a badge and communicate' The idea is that the badge does the introductory work for fishermen all over Australia."

"The need for an identity badge has been obvious for a long time and became even more evident following our tour to the Fish Expo '77 in Seattle U.S.A. last October", Mr. Williams said. "We believe the badge should be instantly recognisable to fellow fishermen obviating the need for writing on the face of it, however, COMMERCIAL FISHERMAN will be moulded on the back".



MINUTES OF THE MANAGEMENT COMMITTEE MEETING

Held on Friday, 18th November 1977 at North Terrace House, Hackney commencing at 10.00 a.m.

next meeting is tentatively scheduled for January 1978.

Present

Mr. M. A. Thomas, Chairman Tuna Boat Owners Association of Australia

Messrs.

- M. L. Pach, SAFCOL
- R. Delongville, Western Waters Prawn Boat Owners Association
- A. Fletcher, Southern Eyre Peninsula Full Time Scale Fishermen's Association
- F. O. Harrip, Riverland Fishermen's Association
- N. Palmer, Australian Bight Fishermen's Society
- M. Rapp, Ocean Foods Pty. Ltd.
- G. Southwick, West Coast Commercial Crayfishermen's Association
- H. H. Stehr, Santa Anna Tuna Fisheries Pty. Ltd.
- M. Vandeeper, Abalone Divers Association of S.A.
- R. A. Stevens, Executive Officer

By Invitation

Mr. I. Kirkegaard, Assistant Director (Fisheries)

Apologies

Messrs.

- D. Cawthorne, Port MacDonnell Professional Fishermen's Association Inc.
- I. H. Backler, South Eastern Fishermen's Association

1. MINUTES—MANAGEMENT MEETING HELD ON 9TH SEPTEMBER 1977

The minutes of the Management Meeting held on 9th September, 1977 were taken as read and confirmed on the motion of Messrs Stehr and Delongville.

2. BUSINESS ARISING FROM THE MINUTES

(a) Amateur Fishing Effort

AFIC has been looking to the Department to give some sort of indication on the use of professional gear by amateurs for some time now and it was felt that it was time we received some response, i.e. AFIC would like to know what the Department is thinking, and when we can expect some action. In particular, Mr. Harrip requested the Assistant Director to note the use of shrimp pots for the catching of yabbies. Mr. Kirkegaard reported that discussions were continuing with amateur representatives, and that certain recommendations would be forthcoming in the New Year.

(b) Inland Waters Fishery

The first meeting to discuss a new management regime for this fishery was held on 30th September 1977. The Executive Officer and the Department are currently preparing some definitions on entry/exit etc. to put before the next meeting for consideration. The

(c) Scale Fishery

The first meeting to discuss the review of the scale fishery was held in Port Augusta on 11th October 1977. As with the Inland Waters fishery, the Executive Officer and the Department are preparing discussion material for the next meeting to be held in Port Augusta in early February.

Mr. Fletcher presented a number of recommendations to the meeting which he considered to be interim measures to protect the scale fishery as follows:—

“To prevent undue escalation of fishing effort in the scale fishery by both professional and amateur fishermen during the period of the review now taking place, the following measures be introduced as a matter of urgency:—

1. PERMITS TO EMPLOY

- (a) Permits to employ deckhands be issued on similar lines to authorities, so that they apply to a nominated boat and are only valid for employees working on or within hailing distance of that boat.
- (b) Permits to employ should not be granted to or held by 'B' licenced fishermen.

- 2. The issue of new permits for nets and longlines used by amateur fishermen be stopped immediately.
- 3. Fisheries regulations be amended to provide that no fish net (amateur or professional) shall be left unattended while set.
- 4. Changes in the status of scale fishermen's licences (i.e. from 'B' to 'A' or vice versa) be frozen during the period of review.”

It was agreed that these recommendations would be put to the next Scale Fishery Meeting to be held in Port Augusta in early February.

(d) Deep Sea Trawling

Members once again informed the Assistant Director of their dissatisfaction at the Department's negative attitude towards the development of deep sea trawling off the South East Coast and referred again to the use of the Joseph Verco for this purpose. Following discussion of the alternatives available, the meeting agreed that Mr. Pach and the Executive Officer represent industry and assist in the preparation of a F.I.R.T.A. Grant; industry would also have a say in nominating the vessel

to be used in the research programme. Mr. Kirkegaard also agreed to industry's request to see the programme for the Joseph Verco over the next two years.

(e) **Investigator Strait**

Messrs. Thomas, Pach, Corigliano, Backler and the Executive Officer met with the Minister for Primary Industry, Mr. I. Sinclair, on Tuesday 25th October 1977. Members expressed AFIC'S support for the retention of state management policies in respect of the Investigator Strait fishery and urged the Minister to be very careful about any decision he may come to to increase the number of boats in the area. A decision has since been reached involving the licencing of eight boats, including the five permit holders. The Department has asked AFIC to again consider the triangle area in St. Vincent Gulf, and it was agreed to proceed along the following lines; a representative from the St. Vincent Gulf Prawn Boat Owner's Association and the Kangaroo Island Fishermen's Association would be invited to attend the next Management Committee Meeting of AFIC to be held on Thursday 8th December 1977, to present each association's views on what should happen. The Management Committee will then formulate a recommendation which it will put to a General Meeting the following day.

(f) **Prawn Fishery Discussion Paper**

The Assistant Director tabled the first Position Paper on the Suspension or Revocation of a Fishing Licence for discussion with members. It was agreed that members would come back to the Assistant Director with comments by the next meeting.

(g) **RAAF Imposed Restricted Flying Zones**

The President reported that he had attended a meeting with the RAAF and the Navy on the 29th September, 1977 at Potts Point in Sydney. The meeting had been worthwhile, as a good liaison has been established. The Navy has tried to co-operate as much as possible; however, it is difficult for them to programme changes at short notice, and the operating zones designated to them are unfortunately all around Jervis Bay. The Navy has indicated it will co-operate whenever possible, and have asked for a programme of tuna boats operation so they can try to fit in.

(h) **SSB/VHF Radios**

The President reported that the three point plan put forward at the last General Meeting had been taken up at Federal AFIC. Federal AFIC decided that this matter should be handled at a State level, where it should be taken up with the local Postal and Telecommunications people. The Meeting agreed that the President and Vice President take the matter up with Mr. D. Caudle, emphasising that the general crystal be retained, asking for a separate crystal for scheduled calls within South Australia, and have coast stations stand by on 4620.

3. OTHER GENERAL BUSINESS

(a) **AFIC AWARD**

The Executive Officer put this concept forward for consideration by members. The idea is that it would be an Award presented on an annual basis to an individual who has made an outstanding contribution to the development of the industry in this State. It was agreed that the Executive Officer develop the idea further and place a proposal before the next meeting.

(b) **Aboriginal Land Rights**

The Executive Officer informed members of recent developments in the Northern Territory, particularly in relation to claims on areas of the sea.

(c) **State Responsibility to 12 miles**

The Assistant Director reported that there was no firm agreement on control at this stage; at present, the States were exercising control to three miles; and changes would be subject to further meetings of State Attorneys-General and the Australian Fisheries Council.

(d) **A.A.P.M.A. Standards**

Concern has been expressed by AFIC (W.A.) with the draft recommendations of the Association of Australian Port and Marine Authorities (A.A.P.M.A.), and has asked Federal AFIC to intervene with the Federal Minister for Transport to ensure that their recommendations are seen only as such, i.e. Industry is concerned that if the recommendations become law, they could restrict the continuation of industry in its normal operations in the future.

(e) **National Fishing Industry Training Committee**

This body met again in Canberra on the 24th October 1977. Two subcommittees have been established, a Catching subcommittee chaired by Mr. Geoff Stackhouse of Tasmania, and a Processing and Marketing subcommittee, chaired by Mr. Mel Pach. The Catching subcommittee will be meeting in Adelaide on 15th December 1977, and South Australian delegates will be the President and Executive Officer.

(f) **Upgrading of Certificates**

It is most important for all fishermen to realise that as from August next year, a new certificate structure will apply in this State, and that any man wishing to move to a larger vessel will have to upgrade his certificate. The Executive Officer is currently preparing an application for NEAT funds for an Education Officer to assist fishermen upgrade their certificates.

(g) **Disposal of Noxious Substances at Sea**

A letter has been written to the Minister for the Environment.

(h) **Opening of Jettys**

A letter has been received from the Department of Marine and Harbors. It was agreed that the Executive Officer write to all Associations asking them to advise deficiencies in jettys, etc.; this information would then be collated and the Department of Marine and Harbors informed. AFIC would then approach the

Department to be involved in a working group to look at the whole question of jettys around the State's coastline, and would offer assistance in the establishment of priorities for improvements etc.

(i) **Processors Holding Licences**

It was agreed that this matter be deferred until the receipt of the Discussion Paper on owner/operator policy from the Department.

(j) **Institute of Marine and Power Engineers**

The next hearing before the Industrial

Commission will be held in Adelaide on the 5th and 6th of December 1977.

(k) **Issuing of New Authorities/Licences**

The Assistant Director agreed to prepare a discussion paper on a system for the selection of new authorities.

(l) **Spencer Gulf**

A Press statement will be forthcoming from the Minister in the next week or so.

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MINUTES OF THE MANAGEMENT COMMITTEE MEETING

Held on Thursday, 8th December 1977 at North Terrace House, Hackney Commencing at 10.00 a.m.

Present

Mr. M. A. Thomas, Chairman, Tuna Boat Owners Association of Australia
Messrs.

M. L. Pach, SAFCOL

D. Cawthorne, Port MacDonnell Professional Fishermen's Association Inc.

R. DeLongville, Western Waters Prawn Boat Owners Association.

A. Fletcher, Southern Eyre Peninsula Full Time Scale Fishermen's Association.

J. Puglisi, Australian Bight Fishermen's Society.

M. Rapp, Ocean Foods Pty. Ltd.

H. Stehr, Santa Anna Tuna Fisheries Pty. Ltd.

M. Vandeppeer, Abalone Divers Association of S.A.

R. A. Stevens, Executive Officer

By Invitation

Mr. I. Kirkegaard, Assistant Director (Fisheries)

Mr. F. Alexander, Kangaroo Island Fisheries Association

Apologies

Messrs.

G. Southwick, West Coast Commercial Crayfishermen's Association

F. O. Harrip, Riverland Fishermen's Association

I. H. Backler, South Eastern Fishermen's Association

1. MINUTES OF PREVIOUS MEETING

The minutes of the Management Meeting held on 18th November 1977, having been circulated to members, were taken as read and confirmed on the motion of Mr. Stehr, Seconded Mr. DeLongville.

2. BUSINESS ARISING FROM THE MINUTES

(a) Investigator Strait

The Chairman outlined the background to this subject for the benefit of members as follows:

Since the High Court decision on the sovereignty rights of Investigator Strait, the State has been withholding the renewal of permits to the five State permit holders working in the area.

The permits have now been re-issued, but have reverted back to the dividing line of Cape Jervis—Troubridge Point.

The reasons for this approach by the State Department of Agriculture and Fisheries are as follows:

1. This is the line defined by the High Court as being the limit of State Territory in St. Vincent's Gulf—actual control, of course, extends another three miles.

2. The State felt that it is desirable for ready recognition to have all boundaries on the same line.

3. This is the division originally decided upon by the State.

The Kangaroo Island prawn fishermen maintain that as they are currently restricted to fishing in State waters, it is futile for them to go to sea without having access to the small triangle of area between Troubridge Point and Troubridge Light, as this is at present the only location of worthwhile prawn beds.

Following the Commonwealth's decision with respect to licencing in Investigator Strait, the Department of Agriculture and Fisheries has requested through AFIC to decide whether the use of the Cape Jervis—Troubridge Light line should be open to Kangaroo Island Prawn Fishermen.

In the meantime, the Kangaroo Island Prawn Fishermen have been given dispensation to fish the area under dispute until AFIC makes a decision.

Mr. Alexander addressed the meeting on the reasons why the five permit holders should retain access to the triangle, and answered questions put by members. After Mr. Alexander left the meeting, the following recommendation was formulated to put before the General Meeting the following day:

1. It is the unanimous opinion of the AFIC Management Committee that in all matters relating to fisheries and fishing effort, the prime concern of fisheries management should be the preservation of the resource within its maximum utilisation.

2. The Management Committee considers that all prawns being caught in State waters in and adjacent to St. Vincent's Gulf are part of

the same fishery resource. Management of this resource can best be achieved if all fishing effort in this area is subjected to the same restrictions and regulations.

3. For this reason, the Management Committee would recommend that AFIC (S.A.) recommend to the South Australian Agriculture and Fisheries Department that the line dividing Investigator Strait and St. Vincent's Gulf be synonymous with State jurisdiction.
 4. At the same time, in recommending this course of action, AFIC should point out, that in view of the fact that for sometime now there have been five extra vessels fishing the southern extremity of St. Vincent's Gulf without apparent harm to the overall resource, the Department of Agriculture and Fisheries should give urgent attention to a review of the present total number of authorities issued for the St. Vincent's Gulf Prawn Fishery.
- (b) **Deep Sea Trawling**
The Assistant Director (Fisheries) tabled a draft of F.I.R.T.A. application for consideration by members. It was noted that the amount applied for was approximately \$42 600, and members agreed that should the application be successful, it will be administered by Mr. I. Kirkegaard, Mr. M. L. Pach and the Executive Officer.
- Members yet again expressed concern at the negative attitude of the Department to licencing in the trawl fishery; in particular, it was noted that Victorian boats were already operating off Port MacDonnell and while a number of South Australian fishermen were interested in becoming involved, they seemed to be encountering problems with our State Department's attitude. Mr. Kirkegaard replied that subject to individuals having a bona fide case for becoming involved in the trawl fishery, there should be no problem in obtaining a State licence; he also added that the Department had as yet received no applications from individuals to get involved in the fishery.
- (c) **Prawn Fishery Discussion Paper**
Members discussed their initial reaction to the First Discussion Paper entitled "Suspension or Revocation of a Licence" with the Assistant Director. A working Party comprising Messrs. Thomas, Vandeppeer, Stehr and the Executive Officer was formulated to comment further on the Discussion Paper before sending it out to industry as a whole for reaction.
- (d) **Institute of Marine and Power Engineers**
The Chairman brought members up to date on recent developments involving the log of claims.
- (e) **Spencer Gulf Prawn Fishery**
The Assistant Director informed the meeting that a statement would be forthcoming from the Minister in due course.

- (f) **SSB/VHF Radio**
The Chairman reported that to date a meeting had not been held with Mr. Caudle of Postal and Telecommunications—it was proposed to hold such a meeting when time permitted. Mr. Cawthorne stated that the SSB radio was not the most up to date radio for the fishing industry and that it would probably be obsolete within a few years. He asked that an approach be made to Telecom to ascertain what the telecommunications requirements for the fishing industry would be over the next 10 to 15 years so that industry could be made aware of developments.
- (g) **AFIC Award**
The Executive Officer tabled details of how the proposed Award would operate. It was agreed that this information be sent out to all members for consideration.
- (h) **AAPMA Standards**
The Chairman informed the meeting that approaches were continuing through Federal AFIC to try and hold discussions with the Chairman or a representative of the Australian Association of Port and Marine Authorities. Federal AFIC wants to ensure that thorough discussions with fishermen are held before the recommended standards are adopted.
- (i) **Disposal of Noxious Substances at Sea**
The Executive Officer informed the meeting that Mr. P. C. Cornish, Acting Director of the Department for the Environment was seeking a report on this matter and would reply in due course.
- (j) **Method of Issuing New Authorities**
The Assistant Director informed the meeting that the Discussion Paper on this subject would be prepared at a later date.
3. **OTHER GENERAL BUSINESS**
 - (a) **School of Marine Studies—Port Lincoln**
The Executive Officer informed the meeting that an AFIC submission supporting the establishment of a School of Marine Studies at Port Lincoln had been forwarded to the Principal of the Eyre Peninsula Community College.
 - (b) **Meeting with Senator Wreidt**
The Chairman reported on discussions with Senator Wreidt of the ALP held in Port Lincoln on 22nd November 1977.
 - (c) **Meeting with the Minister**
The Chairman reported on the lunch meeting held with Mr. Chatterton on 6th December. Matters discussed included the 200 mile zone, licence transferability, Government policy and licencing generally.
 - (d) **Government Policy—Scrapping of Boats**
Mr. Delongville read the following motion from the Western Waters Prawn Boat Owners Association regarding replacement of vessels:
"This Association recommends that a uniform approach for Spencer Gulf in regard to replacement of vessels be sought on the following basis:

Length 55 feet
Horsepower 360 h.p.
Head line length applicable

All of these recommendations to be based on S.A. measurement by the Department of Marine and Harbors.

In addition, there should be some other way other than burning or scrapping sought to allow changing of vessels."

The Assistant Director told the meeting that as scrapping of boats in the prawn fishery is an existing Government policy, it had to be changed at Cabinet level. Members agreed that a motion on replacement and sizes, etc. should also cover St. Vincent's Gulf, and it was therefore recommended that this be brought up at the General Meeting the following day.

(e) **Meeting with Captain Bergland**

The Chairman reported on the meeting held with Captain Bergland on 6th December in

relation to Thevenard slipway, Cowell harbor and the Port Pirie slipway.

(f) **Scale Fishery Discussion Paper**

Mr. Fletcher reported that he and the Executive Officer had prepared the First Draft of industry's Discussion Paper and that this would be forwarded out to all Scale Fishermen's Associations within the next day or two. Copies would also be forwarded to the Assistant Director for discussion between he and his research staff.

(g) **Cocktail Party**

The Executive Officer informed member that a Cocktail Party to meet A.L.P. Ministers and members along with Heads of pertinent Government Departments would be held on Friday 24th February 1978.

There being no further business, the Chairman closed the meeting at 5.15 p.m.

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MINUTES OF THE GENERAL MEETING

Held on Friday 9th December 1977 at Industry House, 12 Pirie Street, Adelaide commencing at 1.00 p.m.

Present

Mr. M. A. Thomas, Chairman, Tuna Boat Owners Association of Australia
Messrs.
M. L. Pach, SAFCOL
R. Delongville, Western Waters Prawn Boat Owners Association
P. Simmonds, Northern Spencer Gulf Professional Net Fishermen's Association
A. Fletcher, Southern Eyre Peninsula Full Time Scale Fishermen's Association
M. Rapp, Ocean Foods Pty. Ltd.
G. Jensen, Australian Bight Fishermen's Society
H. Stehr, Santa Anna Tuna Fisheries Pty. Ltd.
J. Sarunic, Port Lincoln Tuna Processors
M. Vandeppeer, Abalone Divers Association of S.A.
M. Corigliano, Port Adelaide Professional Fishermen's Association
A. S. Neill, St. Vincent Gulf Prawn Boat Owners Association
D. Cawthorne, Port MacDonnell Fishermen's Association
P. Harvey, Beachport Fishermen's Association
M. D. McGrath, Safcol Holdings Pty. Ltd.
J. M. Quinlan, Quinlan Marine International Pty.
L. McInness, Kingston Fishermen's Association
F. Alexander, Kangaroo Island Fishermen's Association
W. H. Haldane, Haldane Bros.
H. Jones, Southern Fishermen's Association
E. R. McEwin, Craig Mostyn & Co. Pty. Ltd.
I. H. Backler, South Eastern Fishermen's Association
R. A. Stevens, Executive Officer

By Invitation

Messrs.

I. Kirkegaard, Assistant Director, Department of Agriculture and Fisheries
D. Poole, Department of Agriculture and Fisheries
Mrs. E. Wallace, Editor, SAFIC Magazine

Apologies

Messrs.

G. Southwick, West Coast Commercial Crayfishermen's Association
F. O. Harrip, Riverland Fishermen's Association
J. Puglisi, Puglisi Fishing Co. Pty. Ltd.
N. Andonas, Tom Andonas Seafoods Pty. Ltd.
M. Bailey, A. Raptis & Sons
J. O'Brien, Port Augusta Commercial Fishermen's Association
R. P. H. Jackson, J. N. Taylor & Co. Ltd.

PROXIES

Mr. M. Bailey forwarded a letter authorising Mr. D. Cawthorne to vote as Proxy for A. Raptis and Sons.

1. MINUTES OF PREVIOUS MEETING

The minutes of the previous General Meeting held on 21st October 1977, having been distributed to members were taken as read and confirmed on the motion of Mr. M. Rapp, seconded Mr. H. Stehr.

2. BUSINESS ARISING FROM THE MINUTES

(a) **Investigator Strait**

The recommendation for the Management Committee having been distributed amongst those present, was read to the meeting (see Management Committee Minutes of Meeting dated 8th December, 1977). After a long discussion in which members were given unlimited time to discuss the subject, the following motion was put to the meeting:—

"That the Executive Officer direct a letter to the Assistant Director (Fisheries) of the Department of Agriculture and Fisheries pointing out the following:—

1. It is the opinion of AFIC that in all matters relating to Fisheries and fishing effort, the prime concern of Fisheries Management should be the preservation of the resource within its maximum utilisation.
2. AFIC considers that all prawns being caught in State waters in and adjacent to St. Vincent's Gulf are part of the same fishery resource. Management of this resource can best be achieved if all fishing effort in this area is subjected to the same restrictions and regulations.
3. AFIC (S.A.) recommends to the S.A. Agriculture and Fisheries Department that the line dividing Investigator Strait and St. Vincent's Gulf be synonymous with State jurisdiction.
4. In recommending this course of action, AFIC requests the Department of Agriculture and Fisheries to maintain its policy of limited entry, and allow the entry of additional vessels only after being satisfied that the economic sustainable yield figures will support further catching effort."

Moved: D. Cawthorne, seconded: A. Neill.
Motion passed, with Mr. Alexander registering a vote against the motion.

(b) **Deep Sea Trawling**

The Chairman informed members of the previous day's discussions with the Assistant Director (see Management Committee minutes). The F.I.R.T.A. application was discussed at some length; members supported the application, as it was expected that the results of a new survey would help prove the resource and indicate whether the fishery was viable in terms of economic catches.

(c) **Spencer Gulf Prawn Fishery**

The Assistant Director reported that while the Minister had not yet issued a statement, it was unlikely that a closure would be in force this season; it was also unlikely that the Yarraville Line would be retained. However, the Assistant Director indicated there would be an extensive closure the following year. After much discussion on the state of the prawn market and the management of the resource the following motion was put to the meeting:—

"In view of the serious decline in the world market for prawns, particularly small prawns, the Department reconsiders its decision to remove the Yarraville Shoal Line and relocate it at Point Lowly-Ward Spit and considers as urgent a total closure during the period of the influx of juvenile prawns into the Spencer Gulf Fishery."

Moved: W. H. Haldane, seconded: M. Rapp.
Motion Passed.

(d) **SSB/VHF Radio**

The Chairman reported on discussions held at the Management Committee meeting; the Executive Officer's conversation with Mr. Caudle of the Postal and Telecommunications Department, indicated that there is an additional inter-vessel frequency available in the 2600 range, and 4535 frequency is also available in addition to 4620. Mr. Harvey requested the Executive Officer to approach Mr. Caudle to formulate a list of "do's and don't's" in the use of SSB radios; this could then be circulated to fishermen.

(e) **Use of Jettys for Unloading of Fish**

The Executive Officer informed the meeting that a reply had been received from the Department of Marine and Harbors. The meeting endorsed the idea of writing to each Association asking for comments on facilities and jettys, etc.

3. **OTHER GENERAL BUSINESS**

(a) **Applications for Membership**

- Southern Australia Trawlermen's Association.
Moved: A. Neill, seconded H. Stehr, that this application be accepted. Passed.
- Far West Hook and Long Line Fishermen's Association. Moved: A. Fletcher, seconded M. Pach, that this application be accepted. Passed.
- West Coast "B" Class Fishermen's Association. Moved: M. Corigliano, seconded F. Alexander, that this application be accepted. Passed.
- Investigator Strait Prawn Fishermen's Association. Moved: M. Pach, seconded H. Stehr, that a letter be written to this Association asking whether it intends representing all prawn fishermen in Investigator Strait in addition to the five permit holders. Pending clarification of this point, the application will be considered again. Passed.
- Kali Boat Building and Repair Pty. Ltd. Moved: A. Fletcher, seconded P. Simmonds, that a letter be sent to Kali Boat Builders asking whether there is a boat builders association in S.A. which could represent the overall views of the boat building industry. Passed.

(b) **South East Fishermen's Ball**

Moved: Mr. P. Harvey, seconded Mr. L. McInnes, that AFIC holds a general meeting in Mount Gambier to coincide with the Annual Fishermen's Ball. Passed.

(c) **Scrapping of Boats**

The meeting agreed that more information should be supplied on current boat sizes, the gear being used by those boats, and suggested uniform size of both boats and gear for both Spencer Gulf and St. Vincent's Gulf. A recommendation would then be formulated to put to the Department.

There being no further business, the Chairman closed the meeting at 5.10 p.m.

DISCUSSION PAPER ON INLAND WATERS FISHERY

Minutes of meeting to discuss the First Draft Discussion Paper on the Inland Waters Fishery held at the Barmera Hotel on Thursday 12th January, 1978 commencing at 8.00 p.m.

The Chairman, Mr. Frank Harrip, welcomed guests to the meeting and following the confirmation of the previous three minutes of meetings asked the Executive Officer to read through the Discussion Paper section by section:

1. Fishing Areas

It was agreed existing or relocated reaches should be enlarged to include backwaters and pools on the flats etc. The meeting also agreed that those people who wanted to fish a larger area on a full-time basis should be given the opportunity of saying whether they wanted to or not.

2. Licences

After much discussion on this item, it was agreed to ask the Executive Officer to prepare additional material on the whole subject of licencing for the next meeting.

3. Legal Minimum Lengths

The meeting agreed that the existing legal minimum lengths should be retained.

4. Access by Recreational Fishermen

The meeting agreed on the following:—

- (i) Recreational fishermen should be limited to rod, line and hand net access to areas of the river worked by commercial fishermen.
- (ii) Recreational fishermen should not be allowed the use of yabbie pots and drum nets or any other commercial gear on areas of the river worked by commercial fishermen.

5. Murray Cod

The moratorium on Murray Cod to allow stocks to recover was deferred.

6. Permits to employ

This was left to the Executive Officer to draft for the next meeting.

Following further general discussion the meeting was closed at 10.00 p.m.

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MINUTES OF THE MANAGEMENT COMMITTEE MEETING

Minutes of the Management Committee meeting, held on Friday, 10th January, 1978 at North Terrace House, Hackney, commencing at 10.00 a.m.

Present

MR. M. A. Thomas, Chairman, Tuna Boat Owner's Association of Australia

Messrs

- M. L. Pach, SAFCOL,
- I. H. Backler, South Eastern Fishermen's Association
- D. Cawthorne, Port MacDonnell Professional Fishermen's Association Inc.
- R. Delongville, Western Waters Prawn Boat Owner's Association
- A. Fletcher, Southern Eyre Peninsula Full Time Scale Fishermen's Association
- F. O. Harrip, Riverland Fishermen's Association
- J. Montgomery, Australian Bight Fishermen's Society
- M. Rapp, Ocean Foods Pty. Ltd.
- G. Southwick, West Coast Commercial Crayfishermen's Association
- M. Vandeppeer, Abalone Divers Association of S.A.
- R. A. Stevens, Executive Officer

By invitation

Messrs.

- I. Kirkegaard, Assistant Director (Fisheries)
- L. Laslett, S.A. Prawn Fishermen's Association
- J. Racovolis, J. P. & E. Racovolis Pty. Ltd.

Apologies

Messrs.

- J. Puglisi, Australian Bight Fishermen's Society
- H. H. Steer, Santa Ann Tuna Fisheries Pty. Ltd.

1. MINUTES OF PREVIOUS MEETING

The minutes of the Management Meeting held on the 8th December, 1977 having been circulated to members, were taken as read and confirmed on the motion of Mr. Cawthorne, seconded Mr. Delongville.

2. BUSINESS ARISING FROM THE MINUTES

- (a) **Institute of Marine and Power Engineers**
The Federal President reported on the latest developments on a share fishing agreement.
- (b) **Deep Sea Trawling**
The Executive Officer reported that extensive press coverage had been given to A.F.I.C.'s application for a F.I.R.T.A. grant. Mr. Cawthorne requested that an application for licence form be run off and distributed to those members interested in becoming involved in Deep Sea Trawling. These would then be submitted to the Licencing Section of the Department of Agriculture and Fisheries.
- (c) **SSB Radios**
Mr. Caudle of the Postal and Telecommunications Department has advised that he has passed on our request for projected telecommunications requirements for the fishing industry to his Head Office in Melbourne, and is awaiting their reply. The President has sent a telex to Mr. Caudle re additional crystals for the tuna fleet, and is awaiting a reply.
- (d) **Method of Issuing of New Authorities**
A discussion paper on this subject is being prepared by the Department for our consideration and comment.

(e) **AFIC Award**

This is currently being considered by members; it is anticipated that this will be discussed at the next General Meeting in March. It was agreed that life members of fishermen's associations should also be eligible for consideration for the Award.

3. FISHERIES AND PROCESSING BUSINESS

(a) **Abalone**

The Federal President reported on the Abalone meeting held in Canberra on Thursday 19th January, 1978. He informed the meeting that the abalone marketing situation was critical, and that AFIC had requested Mr. P. Ryan of D.P.I. to raise the concern of the industry with the Japanese Consulate on a low key basis. There was agreement that the situation was to some extent of our own making; however, the meeting was mainly called to form an assessment of the seriousness of the situation on state by state. The immediate future did not look bright; however, S.A. appeared to be in a better position than most other states.

Mr. Vandeeper added that there were three main problems as follows:

- (i) overpricing of abalone.
- (ii) Chile is supplying 3 times the amount of Australian abalone exported.
- (iii) Further decreases in price can be expected.

Mr. Vandeeper went on to say that divers must be prepared to operate at a lower price, and that the abalone industry may have to have a revaluation of the total situation. This revaluation would incorporate a look at exporting to additional markets and also promoting and selling to the home market.

(b) **Inland Waters**

The First Draft of a Discussion Paper prepared by the Executive Officer has been discussed with members of the Riverland Fishermen's Association at a meeting held in Barmera on Thursday 12th January, 1978. Certain recommendations were adopted, and a Second Draft has been prepared.

The Victorian Department of Fisheries and Wildlife is looking at the introduction of spring viraema into river systems to eradicate European Carp. Spring viraema can be compared to the use of myxomatosis to eradicate rabbits. The proposal has a long way to go yet, and will not be introduced before full agreement is reached between the Commonwealth and States involved on the following:

- (i) Will there be any direct effect on any other fish in the river system i.e. there must be a complete assurance that only the European Carp will be affected.
- (ii) If the spring viraema is introduced, what will be the direct effect of a river full of rotting carp, and what will be the effect on bird life.

(iii) What adjustments will be necessary if carp is eradicated i.e. will it be needlessly disruptive to eradicate carp.

(iv) What will be the long-term effect i.e. will it be completely effective, or will new stocks of carp appear in the river systems following flood waters.

The Assistant Director reported that a Dr. Jack Stephenson from the U.K. was coming to Adelaide to address a meeting of all parties interested in the subject of spring viraema, as it is a very open question at this point in time. The date for the meeting has been set down on 9th February, 1978. Further details will be advised in due course. Mr. Kirkegaard undertook to provide the Executive Officer with any information available prior to the meeting.

(c) **Prawn Fishery**

• **Spencer Gulf**

Members will be aware of the events leading up to the Press Release from the Department last week, (see item 2 in Newsletter No. 6) and AFIC's opposition to this decision. While the Department's decision must still be questioned and indeed contested, it is also important at the same time to form a sub-committee to look at the possible implementation of a full closure in 1979. In particular, the following points need to be considered:

- (i) do we want a closure, and if so why i.e. what is the closure to achieve? It may not be practical to make a decision straight away, but wait until the end of March when we have more information on what is happening this season. Once we know this, we can look at the question of a total closure.
- (ii) assuming AFIC agrees on a resolution for a closure, how much of the Gulf is to be closed so that the closure is effective, and what will be the activities of the fleet during the closure.
- (iii) do we want flexible opening and closing dates.
- (iv) if the re-opening date is flexible, is it indefinitely inflexible, or is there to be an absolute reopening.
- (v) what is the optimum size (count per lb?) for opening, and what proportion in the samples should be of that size. It is important to determine a size which gives the best economic return.

It was agreed that summarised reports from the Department on operations currently taking place would be of great assistance to the Sub-Committee. In order to prepare the necessary administrative and legislative framework, the Department needs to have clear resolutions on these matters from industry preferably by the end of April, but at the very latest, the middle of May. The Department has also given an undertaking that it will accept the recommendations of a General Meeting on the closure. A Sub-committee

comprising representatives from the Western Waters Prawn Boat Owner's (Mr. R. Delongville) and the S.A. Prawn Boat Owner's (L. Laslett) along with processing representation (Mr. Rapp) and the Executive Officer was formed to look at the questions and issues involved in a closure.

- Discussion Paper
"Revocation or Suspension of a Licence" The Working Committee has met once; however, there needs to be further discussion.
- Prawn Farm—Port Broughton
The President introduced Mr. J. Racovolis to members and asked the Executive Officer to read the previous correspondence between Mr. Racovolis and the Premier, and the State President of AFIC and the Premier, in which AFIC had indicated its opposition to Mr. Racovolis being granted a special permit.

Mr. Racovolis addressed the meeting stating that he was unhappy with the existing situation, as professional fishermen were unable to comply with all his requests re obtaining mother prawns, and also scrap fish. Should the meeting agree to a request for a boat to take mother prawns, Mr. Racovolis agreed that he would make all the information available to this body on what's caught etc. He would be prepared to give written undertakings to take only 2 000 mother prawns.

Members agreed that this was a legitimate request and should receive due consideration; some members made the point that there may be problems with a processor holding a licence, and were also concerned with the following:

- high mortality rate of the fish he returns to the water
- market competition
- fish are our breeding stock as well as his
- value of his farm to research.

Members asked Mr. Racovolis whether he had approached the S.A. Department of Agriculture and Fisheries to use the Joseph Verco, Mr. Racovolis replied that he had written to the Department in August, had not received any reply, and couldn't wait any longer. Mr. Racovolis then left the meeting.

Following general discussion on the issuing of a special permit to Mr. Racovolis, it was agreed that a letter be directed to Mr. Racovolis asking for certain assurances before the matter is considered again.

(d) **Rock Lobster Fishery**

The President reported on his recent visit to the South East (see Press Cuttings). Mr. Cawthorne then took up the acute problem with the taking of undersize crays and also with abuses by both amateurs and professional fishermen. At the same time Mr. Cawthorne placed on record his appreciation for the good work being done by David McCarthy in Port MacDonnell.

The subject of amateur effort was then raised with the Assistant Director, and it was agreed

to direct a letter to Mr. Kirkegaard in strong terms, pointing out the problems involved with gear, policing etc.

Mr. Southwick raised the subject of transfer of authorities on the death of an authority holder. Mr. Southwick stated that his members were concerned as to their security and asked the Assistant Director what the Department's attitude was in this matter. Mr. Kirkegaard replied the Department's long-term view was that any authority or licence should not be transferable on the death of the holder. It was agreed that any further discussion on this subject would take place on the receipt of the Discussion Paper on Entry/Exit etc.

(e) **Scale Fishery**

The First Discussion Paper has been sent out to all Scale Fishermen's Associations and some comments have been received back. A Second Discussion Paper has been prepared by the Executive Officer and the Scale Fishery delegate for consideration at the next Scale Fishery Meeting to be held in Port Augusta on 17th February 1978.

(f) **Tuna Fishery**

The President reported that the tuna season had been an unusual one, the N.S.W. season being relatively poor due to bad weather, and current fishing effort being concentrated in an area 60 miles west of the Bight.

(g) **Processing**

Mr. Rapp asked the meeting's reaction to processors accepting small prawns. It was agreed that the Wholesale Fish Merchants Association make their own decision on accepting small prawns; however, AFIC would support any move which will restrict the taking of small prawns.

Mr. Rapp then raised the matter of processors licence fees and the operation of unregistered processors. He asked the Assistant Director whether there were any proposed changes in any new regulations regarding processors. Mr. Kirkegaard replied that he could not make any comment at this stage.

4. **OTHER BUSINESS**

(a) **Cocktail Party**

A Cocktail Party to meet Government Ministers, heads of Departments and people generally associated with the fishing industry has been arranged for the 24th February. It was decided that Mr. M. Rapp would co-ordinate supplies of prawns, lobster etc. for the function.

(b) **Port MacDonnell Sewage Disposal**

A letter has been written to the Premier supporting the Port MacDonnell Professional Fishermen's Associations' submission.

(c) **Joseph Verco Program**

The program was discussed with the Assistant Director. Mr. Southwick said that the Northern Zone Rock Lobster fishermen were happy to forego rock lobster research in order to allow trawling research to take precedence.

The Assistant Director stated that the research vessel would be used for 150 working days in 1977-78, and 200 working days per year thereafter. He went on to say that the program was flexible, and that the vessel would not be used for policing. Members said they would be interested to see reports from time to time on what the Joseph Verco was doing.

(d) **Salary Review-Executive Officer**

It was agreed by members that the Executive Officer's salary be increased by the amounts agreed to in the discussion with the Executive Officer.

(e) **Injunction against the Issuing of Two Prawn Authorities**

Mr. Southwick reported on the outcome of the injunction and that he and his members were

most unhappy that the Minister chose to grant the authorities regardless of the court ruling, i.e. even though the Court ruled in his Associations favour, the Minister had exercised his Ministerial prerogative which was unchallengeable.

Mr. Cawthorne stated that AFIC should not have abrogated its responsibility in this matter, as it had discredited its role as the representative of all aspects of the fishing industry. Mr. Cawthorne went on to say that there was a principal involved which was well worth supporting to see that this situation did not occur again.

There being no further business, the Chairman closed the meeting at 5:10 p.m.

* * *

THE ROLE OF AFIC

(From a talk given to the Inspectors Conference on 4th October, 1977, by Richard Stevens, AFIC Executive Officer)

For those of you who are unsure as to what AFIC is and what role it has to play, I would like to start by providing some brief background information on its foundation and objectives.

The Australian Fishing Industry Council was originally formed in early 1967 as a Federal Body primarily to unite all sectors of the Australian Fishing Industry on both State and Federal levels for their common benefit.

Membership was aimed at:—

- Representatives appointed by properly constituted Professional Fishermen's Associations
- representatives appointed by those companies or incorporated bodies of whose business a primary or major function is the production, processing or marketing of fish, crustaceans, molluscs, and other aquatic resources of Australia.

The first meeting of the South Australian branch was convened soon after the Federal body in April 1967 with a membership of 22, consisting of 10 fishermen's associations and twelve processing companies. The branch was subsequently incorporated in February 1969, and today membership consists of 40 members, including 19 fishermen's associations, 10 processing companies, 3 fishing companies and 7 equipment suppliers.

AFIC can be said to be representative of well over 90 per cent of professional fishermen in this State, and therefore has an important part to play in representing the fishermen's view point to the Government, the Department and the public. Before defining the objectives and the role of AFIC further, it would be worth while elaborating further on the structure of AFIC.

AFIC has a Management Committee of 12 members which includes a President, Vice-President, Executive Officer and 9 other members. At the election of officers each year to this Committee individuals from each of the six fisheries i.e. Tuna, Prawn, Rock Lobster, Abalone, Scale and Inland Waters, are encouraged to nominate, along with at least 2 representatives from the processing sector. This ensures that all interests are catered for at the Management Committee level. The Management Committee meets once a month to discuss general issues affecting particular fisheries or the industry as a whole. The Assistant Director (Fisheries) and officers from the Department of Agriculture and Fisheries and other Government departments are invited to attend to hear views firsthand. In addition to these Management Committee meetings, General Meetings of all AFIC members are held each quarter.

The South Australian branch of AFIC also sends two delegates plus the Executive Officer to quarterly meetings of Federal AFIC in Canberra. At these meetings, representatives from each state discuss national issues affecting the industry as a whole such as the implications of the 200 mile zone, and the representation on the recently formed National Fishing Industry Training Committee. Discussions also take place with Department of Primary Industry representatives on various matters.

I will now explain in more detail the objectives and the role of AFIC.

In addition to the aim of uniting all sectors of the fishing industry, AFIC's objectives are as follows:

- To present the views of a cohesive Australian Fishing Industry at State and Commonwealth levels.
- To promote the implementation of a National Fisheries policy framed by the Industry and the Government.

- To promote unity of effort within the Industry for the solving of common problems.
- To act as advisor to or intermediary between Government and sectors of the industry.
- To appoint representatives to bodies working for the betterment of the Industry.
- To obtain for the Industry the best conditions which the economy of Australia will permit.

With these objectives in mind, AFIC has three important roles to play:

- (i) to provide a mouthpiece for industry opinion
- (ii) to ensure that the Department and Ministers are aware of such industry opinion
- (iii) to liaise and consult with the Department where possible on matters affecting particular fisheries or the industry as a whole.

The development of the industry in this State led to the appointment of a full time Executive Officer in June 1977 to co-ordinate the activities of members and provide liaison between the industry and the Government. An integral part of the Executive Officer's job involves the three roles mentioned above; i.e. he has a major part to play in the gathering, co-ordination and presentation of industry's viewpoint to the Government on both current and proposed fisheries management policies. This involves the Executive Officer in discussions and close liaison with both the members of AFIC and the Department.

A most important role of the Executive Officer is the dissemination of information to the members

of AFIC. This is presently done through both the SAFIC magazine and a monthly Newsletter. However, industry views are not restricted to AFIC members and the Department. Whenever possible, information is also forwarded to politicians on both sides of the House, to the public via the media, and also to interstate branches.

The State Government through the Minister of Fisheries, has recognised AFIC as the official voice of the South Australian fishing industry, and we are currently actively involved in discussions with the Department involving all fisheries. In particular, a new management regime is presently being prepared for the Riverland fishery, and AFIC is also involved in discussions on the serious situation which has developed in the Scale fishery.

AFIC and the Department will not always be able to reach agreement on all the issues which affect the fishing industry; in cases where we can't reach agreement, the normal lines of communication are followed i.e. if AFIC is unhappy with its response from the Department, it will present industry's case to the Minister. If AFIC is still unhappy with the response from the Minister, it will go to the Premier. One would like to hope that these instances would not be frequent, but nonetheless they are bound to occur.

In conclusion it is most important to Council Members that AFIC be seen by the Department and the public as a responsible body—a body which is capable of representing fishermen's views at all levels.

* * *

SPECIALISED TRAWLING FOR GEMFISH OFF SOUTH AUSTRALIA

The South Australian Branch of the Australian Fishing Industry Council has submitted an application to the Commonwealth Fishing Industry Research Trust Account for funds to undertake a planned search concentrating on gemfish trawl grounds off South Australia. The area to be researched will extend from Beachport west to Point Widbay on Eyre Peninsula.

The objectives of the project will be:

- (a) To provide additional trawl ground information to that already available from the *Zeehaan* exploratory fish trawling programmes carried out early in 1977.
- (b) To increase the area of search by trawling to that covered by the *Zeehaan* echo sounder survey early in 1977.
- (c) To provide all information gained from the survey to fishermen in order that additional fishermen can enter the trawl fishery if gemfish availability is established.

Commenting on the application, the State President of AFIC, Mr. Michael Thomas, said that

with the imminent proclamation of a 200 nautical mile fishing zone, South Australian fishermen were looking to be involved in any potential fisheries developed within the zone.

"Should AFIC's application be successful, we would hope to see sufficient trawl ground information and gemfish availability to allow South Australian fishermen to enter the trawl fishery". Mr. Thomas said it was most important for the Commonwealth and State Governments to provide the necessary impetus to enable local fishermen to become involved in offshore fisheries.

"The decision to operate in the 200 mile zone involves the consideration of a number of important factors. One is the cost of getting involved which can be extremely high, and the second is the overall viability of the fishery"

"We see the role of the Commonwealth and State Governments as making a significant contribution towards research in these areas, and the proving of the viability of potential fisheries", Mr. Thomas said.

Press release issued 16-1-78

CHANGES TO PRAWN TRAWLING—SPENCER GULF

The South Australian Branch of the Australian Fishing Industry Council (AFIC) has reacted strongly against the Department of Agriculture and Fisheries decision to open most of Spencer Gulf to prawn trawling for this year. The State President of AFIC, Mr. Michael Thomas, said that there were three compelling reasons against opening up the Gulf, and these were as follows:

1. AFIC considers that the conservation and protection of the prawn resource is of vital importance to the continuing viability of the Spencer Gulf prawn fishing industry. On the one hand, the Department states that the two months closure around Yarraville Shoals should be abolished, as it is not particularly effective in protecting small prawns; on the other hand, the Department makes a decision to open up more of the Gulf to prawn trawling. AFIC considers that this will do far more damage to the small prawns, and consequently the total prawn fishery in Spencer Gulf.

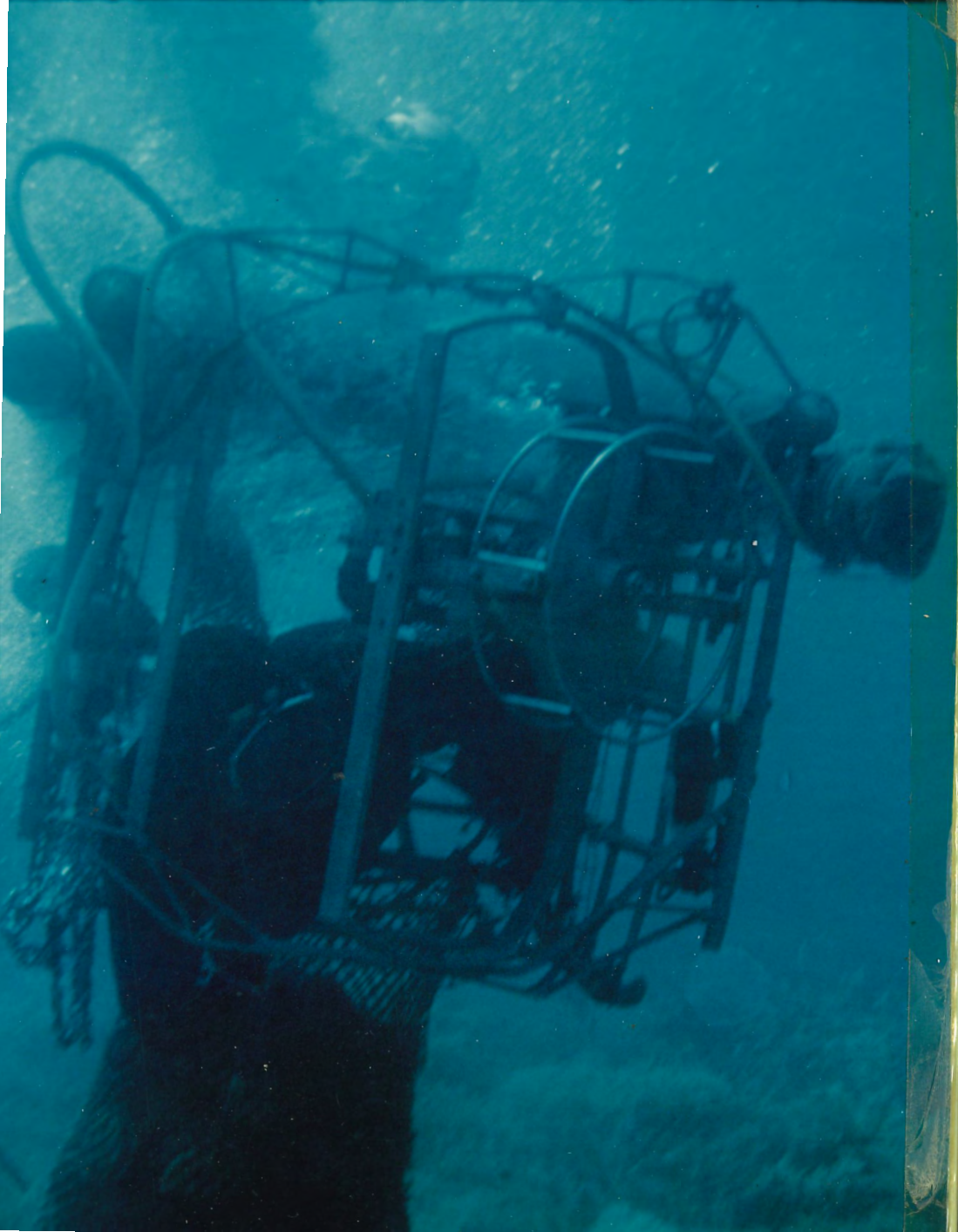
2. From a marketing point of view, AFIC can see no reason for encouraging prawn fishermen to catch small prawns, as the market is just not available. "We would have thought that a far more practical solution would have been to have given the prawn stock the opportunity of growing to a size which would bring the best return in the marketplace", Mr. Thomas said.

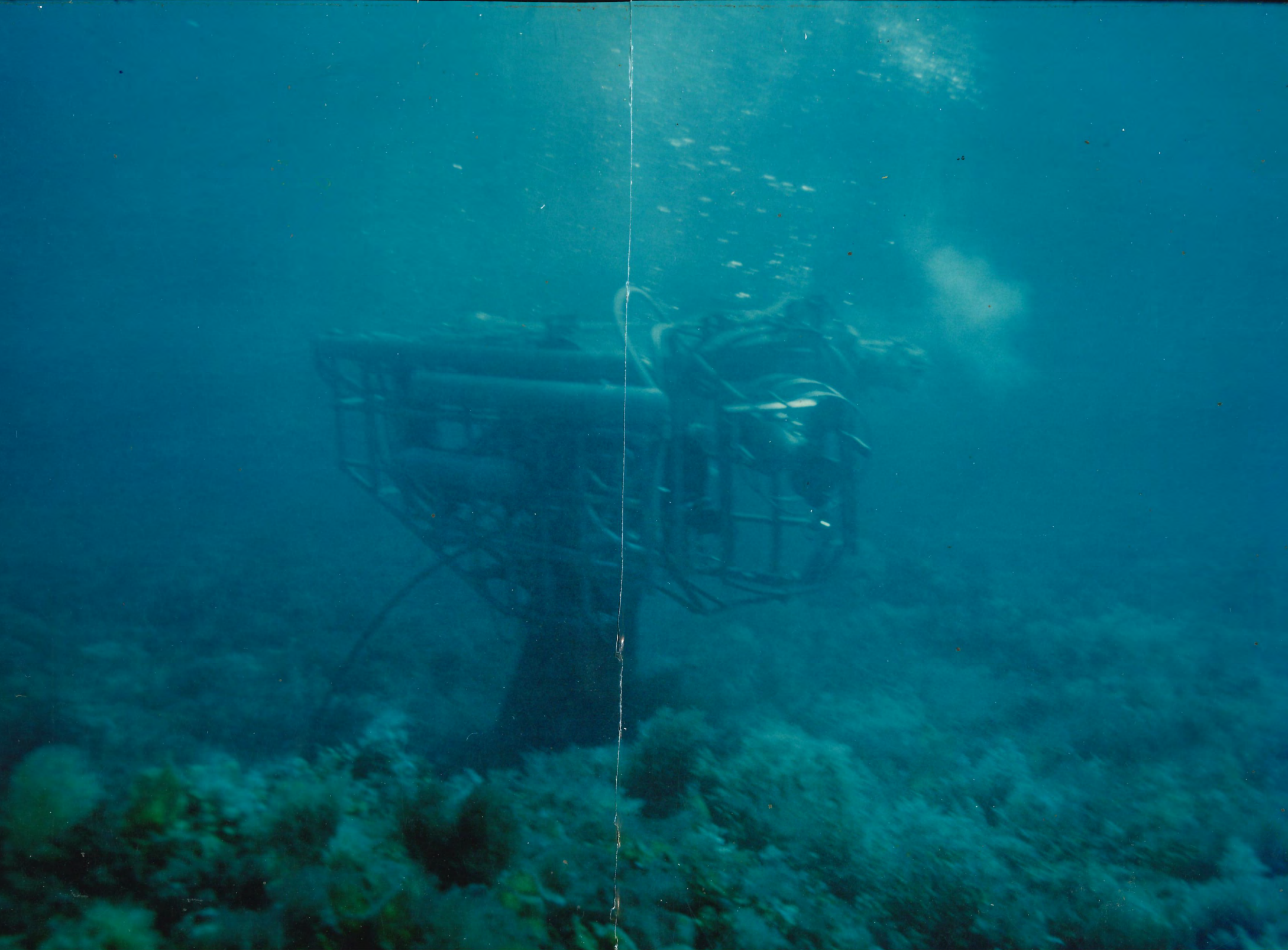
3. There is every likelihood that line fishing by scale fishermen in the Port Pirie area will be disrupted as a result of prawn fishermen trawling on the same grounds as scale fishermen. AFIC is directly opposed to the creation of any situation which may cause friction between fishermen.

"Overall, we cannot see any justification for the Department's decision either on a marketing, economic or conservation basis", Mr. Thomas said.

Press release issued 16-1-78

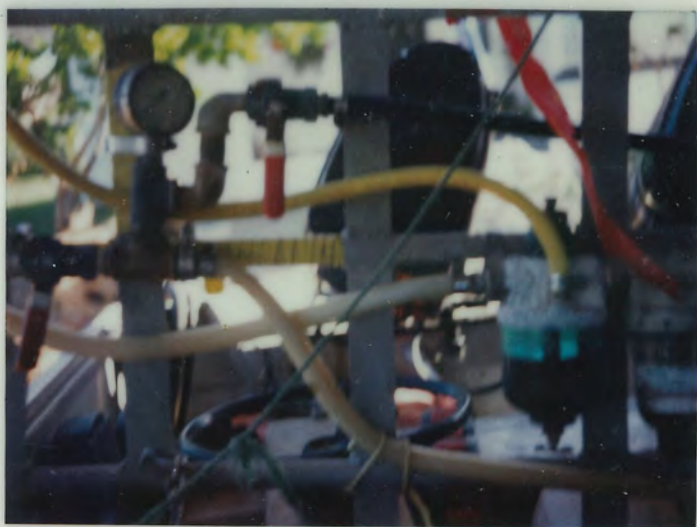








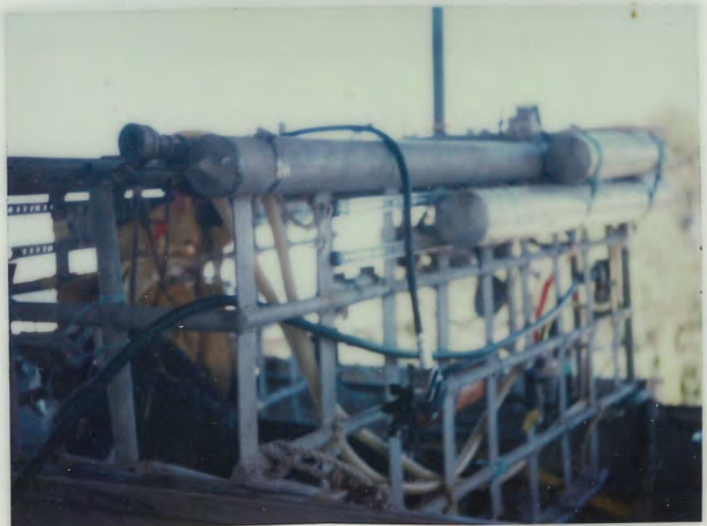
Power Unit in Cage: Control tap;
propeller & protection; adjustable gimble.



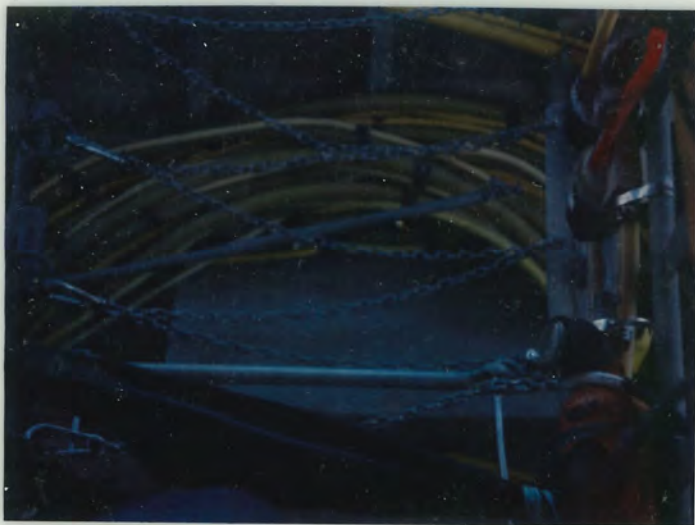
Parachute taps; pressure gauge,
lubricator & water trap.....



Parachute, dump valve,
& buoyancy tanks.....



Back view Cage
.... Note: Quick Release
Couplings, B. tank slides.



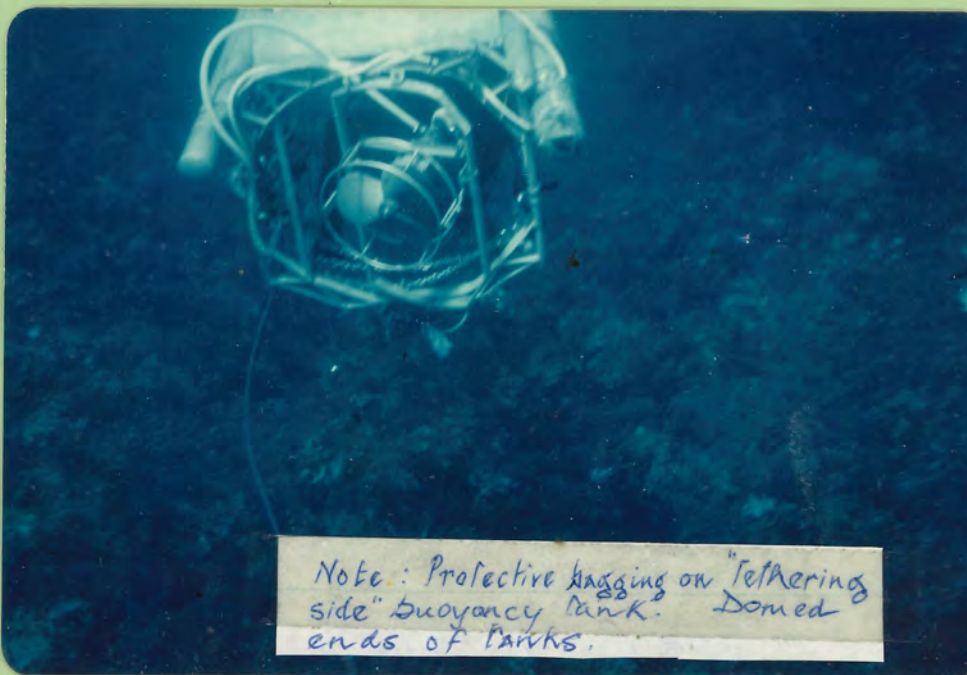
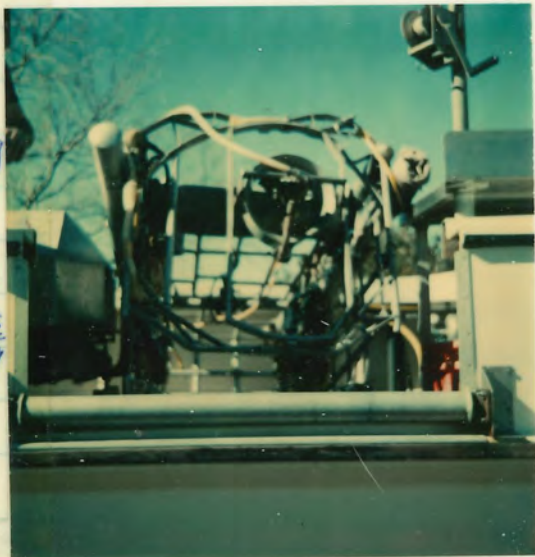
THE WORK AREA -
Bottom Front of Cage




Grantee preparing to enter Cage
Tethered alongside boat...

Note:

- Removable side-loading door in Shark-cat, to facilitate loading
- aluminium Kork nozzle has been replaced (on right photo) with stainless shroud for improved visibility
- Roller on boat for protection as well as ease of loading...



Note: Protective bagging on "Tethering side" buoyancy tank. Domed ends of tanks.



The Cage offers not only protection,
but also the means of traversing great
tracts of ocean bottom in speed & comfort.



Grantee's 23' Shark-Cat used in project. Note shark cage tethered by boat. Entry through side-loading door.



Note how work area is closed off, with chains
which are clipped in when diver leaves the
bottom : an ideal haven for decompression