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 be given re.

No 19.84.65.....

NEW PROPOSAL
 CONTINUING PROJECT
 FINAL REPORT
 PROGRESS REPORT

FISHING INDUSTRY FIRC 32 RESEARCH TRUST ACCOUNT

TITLE OF PROPOSAL/PROJECT: Echo Sounder, Radar and Marine Radio
Transceiver Course

ORGANISATION: NSW Dept of Agriculture

PERSON(S) RESPONSIBLE: Mr T.B. Gorman
Mr R. Wawrowski

FUNDS SOUGHT/GRANTED		
YEAR	SOUGHT	GRANTED
<u>1984/85</u>		<u>36,250</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

RELATED APPLICATIONS: _____

RECEIVED/...../19....

DISTRIBUTED/...../19...

49 20
(12pp)

DEPARTMENT OF AGRICULTURE, N.S.W.

S.O. 4433 D. West, Government Printer

ECHO SOUNDER, SONAR, RADAR AND MARINE RADIO TRANSCEIVER COURSE 84/65

This course was held at the Gore Cove depot of the Fisheries Division, NSW Department of Agriculture from 13-17 May. It was held the week following the course on nets, knots and ropework to enable participants to attend both without incurring additional travelling costs.

A list of participants is attached. A total of 22 attended of which two were unassisted. One of these was a departmental officer, while the other attended to further her own education. Eleven of the participants attended both courses. However, it should be noted that the net course was limited to 14 participants therefore 78% of those attending the first course opted to attend the second one as well.

As noted previously all the participants were experienced fishermen and several of these had been in the industry for 20 years or more.

A copy of the syllabus is attached for information. The AWA demonstration vessel DEMEELI participated each afternoon except for the first day. Films on fisheries and related subjects were shown on Tuesday and Wednesday and a barbeque was held on the Thursday.

In regard to the lecturers, Reinhold Waworski of the Australian Maritime College was unable to attend because of illness. A list of the lecturers is on page 5 of the syllabus.

It should be noted that AWA provided three lecturers ie. W Owen, J O'Toole and P Levy as well as the master of Demeeli, and without their assistance we could not have run the course.

LIST OF PARTICIPANTS

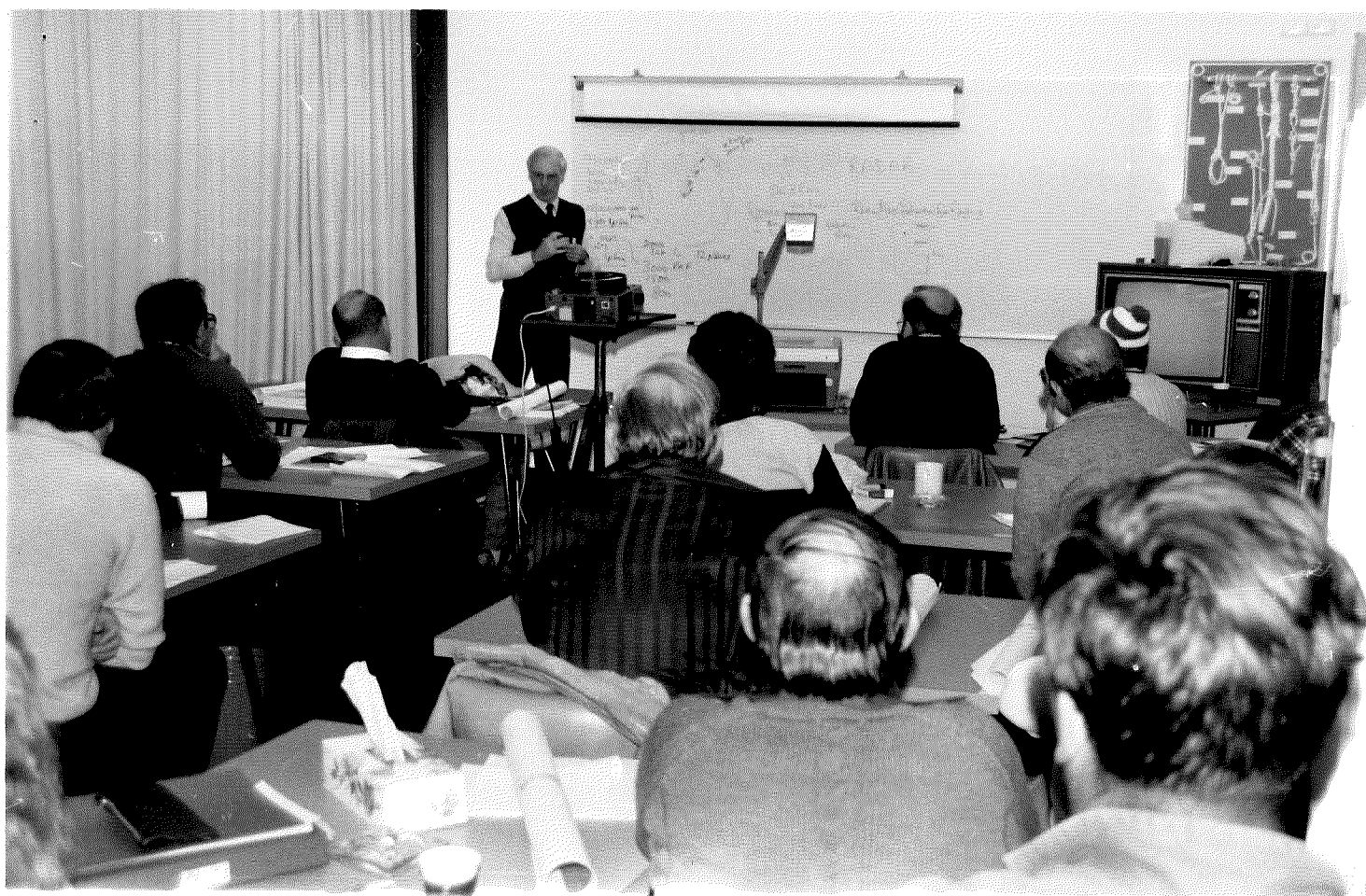
- A REED 8 Bundilla Parade, Berkeley Vale, 2259
- A K CRUMP 24 Marine Parade, Stuarts Point, 2441
- P LAINE 8/40 Bouttwood Street, Coffs Harbour, 2520
- L MARTIN 42 Chepana Street, Lake Cathie, 2446
- B COX 22 Main Road, Medowie, 2301
- C S MOFFAT 2 Koonarra Avenue, Orange Grove, 2256
- M McLEAY 19 Hunter Street, Raymond Terrace, 2324
- R F WEBBER 13 Simpson Street, South West Rocks, 2431
- A J GREBERT 222 Fitzroy Street, Grafton, 2460
- R WILKES 35 Lang Street, Kurri Kurri, 2327
- S J WILKES " " " " " "
- J McNAMARA 68 Baringa Road, Seaforth, 2092
- R J SHEEHAN 455 Ocean Beach Road, Umina, 2257
- C W DUNN 2/83 Dunn Deering Street, Ulladulla, 2539
- S DEDERER 5 Lawson Street, South West Rocks, 2431
- J E TAYLOR 6 Merriot Street, South West Rocks, 2431
- R FIRKIN 122 Victoria Street, Malabar, 2036
- F P MOONEY 30 Jones Avenue, Warners Bay, 2282
- G CLARKE RMB 743 Lawrence Road
- D MOORE P O Box 2, Yamba 2464, Maclean, 2463
- M HINSHAW 56 Coonawarra Court, Yamba, 2464
- G HENRY NSW Department of Agriculture, Division of Fisheries

Total: 22
 Assisted: 20
 Unassisted: 2
 Attended both: 11

Participants at the Echo Sounder Sonar Course listening to a lecture on echo sounding.



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Bill Owen, group marketing manager, Marine and Aviation Division A.W.A. Ltd lecturing on radar.



SYDNEY
March 25, 1985
FOR IMMEDIATE RELEASE
NR 85/16



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\$200 INCENTIVE TO LEARN

The NSW Department of Agriculture is giving professional fishermen a \$200 incentive to upgrade their specialist skills.

"This year, for the first time, the Department will pay a \$200 allowance to fishermen who attend either of our week-long courses in May" said Terry Gorman, senior biologist with the Department's Division of Fisheries.

The first course, from May 6 to 10, covers all the basics of knots, hitches, and nets. The second, from May 13 to 17, looks at electronic gear such as the echosounder, sonar, radar, and radio.

"The netmaking course is mainly for new entrants to the fishing industry but experienced fishermen who have no formal training in netmaking will also find it valuable" Mr Gorman said.

"The other course will demonstrate the electronic equipment's capabilities and limitations so fishermen will understand how to make the most of their gear."

Application forms for both courses are available from fisheries inspectors or fishing co-operatives.

"The courses will be held at the Department's training centre at Gore Cove, Wollstonecraft, Sydney, and are the only courses of their type in NSW" Mr Gorman said.

"Although the courses themselves are free, the Department appreciates the financial hardship living in Sydney for a week has placed on fishermen in the past. We hope the \$200 allowance will help offset some of the expenses this year".

... ends

CONTACT: Joanne Crawford (02) 217 5096

Professional Fishermens Courses

MAY 6 to 10 NETS AND NET MAKING

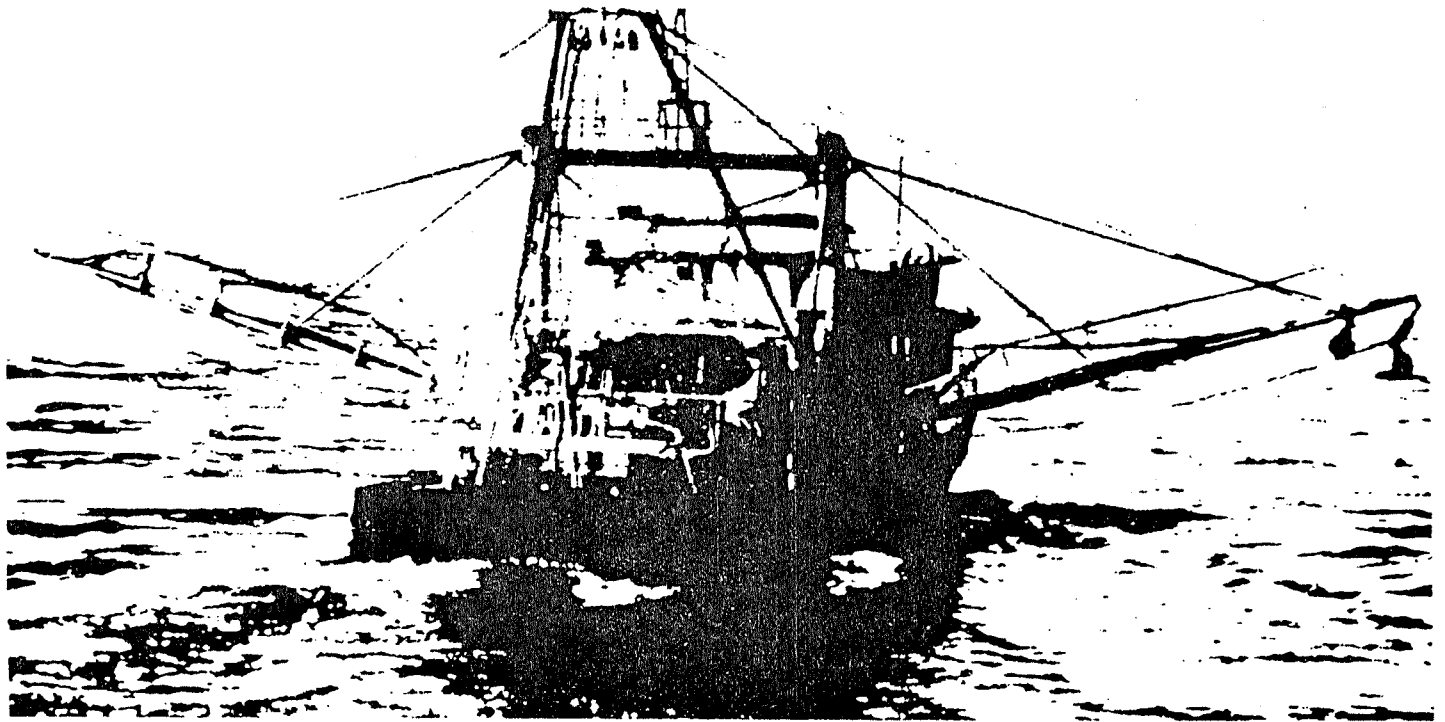
Practical instruction in the basics of net design and construction

MAY 13 to 17 ECHOSOUNDER, SONAR, RADAR AND RADIO

Practical instruction in the theory and use of electronic gear

WHERE: At Gore Cove, Wollstonecraft, Sydney. Both courses are FREE.

FINANCIAL ASSISTANCE: A special allowance of \$200 per person per course is available to offset your living expenses while in Sydney.



APPLICATION FORMS: From fishing co-operatives or local fisheries inspectors. Applicants must lodge a refundable holding deposit of \$50

FOR FURTHER INFORMATION CONTACT: Fisheries Information Service (02) 217 5093, 217 5094 or your local fisheries inspector.

Professional Fishermens Courses

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The Fisheries Division of the N.S.W. Department of Agriculture is offering two courses for professional fishermen in 1985.

A NETS and NETMAKING course will be held from May 6 to 10 inclusive, and an ECHOSOUNDER, SONAR, RADAR, and RADIO course will be held from May 13 to 17 inclusive. Both courses are at Gore Cove, Wollstonecraft, Sydney.

The courses are free but a refundable holding deposit of \$50 per person is required.

For the first time this year, the Department is able to give financial assistance to fishermen attending the courses. An allowance of \$200 per person per course will be paid to cover your living expenses while in Sydney.

Fill in the application form below and return to the Department with your deposit to secure a place in these popular courses. Numbers are strictly limited.

For more information, contact the Fisheries Information Service, N.S.W. Department of Agriculture, P.O. Box K220, Haymarket, 2000, phone: (02) 217 5093, 217 5094, or your local fisheries inspector.

APPLICATION FORM:

To: Fisheries Information Service
N.S.W. Department of Agriculture
P.O. Box K220
HAYMARKET 2000

I wish to enrol for the (please tick):

- 1985 Nets and netmaking course
- 1985 Echosounder, sonar, radar and radio course

Name:

Address:

..... Postcode:.....

Telephone:

I enclose cheque/money order for \$50 refundable holding deposit. I understand the deposit is only refundable if I attend the course. (Please make cheques payable to the Department of Agriculture, N.S.W.).

.....
Signature

SYLLABUS

ECHO SOUNDER, SONAR, RADAR, AND RADIO COURSE

DAY 1 (MAY 13)

TIME	SUBJECT	OUTLINE	LECTURER
9.30 am		Official opening of the course	
10.00	THE ECHO SOUNDER THE ECHOGRAMME	A detailed description of the echo sounder picture giving the reasons for the characteristic appearance of the features found on an echogramme. The differences between wet and dry paper.	JOHN HILL
11.00	FACTORS AFFECTING THE ECHOGRAMME	Frequency, pulse length, beam width, paper speed, stylus speed, rough seas, aeration, pitching, rolling nature of the sea bed - rocky, soft, uneven, undulating, sloping, level, ghosting, false echoes. Interference from ship and propeller noise and other echo sounders.	BILL OWEN
11.45	FACTORS AFFECTING THE ECHOGRAMME	Fish schools, dense schools above the bottom, isolated schools above the bottom, dense schools on the bottom, individual fish close to the bottom. Appearance of single fish in the centre and edge of the beam. Ship passing over stationary fish. Fish and ship in motion.	REINHOLDT WAWORSKI
12.30 pm	LUNCH		
2.00 to 4.00		Practical echo sounder training on board "Kapala".	

TIME	SUBJECT	OUTLINE	LECTURER
9.00 am	HOW AN ECHO SOUNDER WORKS	What is sound, propagation of sound, wave length, frequency, ultra sound, velocity of sound in water, method of measuring distance by sound, common frequencies used by echo sounders; weakness of returning echo, absorption and dispersion, amplification, transmitting power, beam width, pulse lengths, side lobes, reverberation, resolution.	JOHN HILL
9.45	THE MAJOR COMPONENTS OF AN ECHO SOUNDER	Types of transducers. Size in relation to: frequency, power, beam width, pulse length. Cavitation. Selecting transducers. Amplifier: its function and intelligent use of gain. Transmitter: its function. Display units: description of various types, i.e. paper C.R.T., flashing light, digital, meter, and their advantages and disadvantages for commercial fishing.	BILL OWEN
10.30	SPECIAL FEATURES OF ECHO SOUNDERS	White line, grey line, bottom lock, "memory" in C.R.T., narrow, medium and wide beam sounders and their application in fishing and bottom discrimination. Side lobes and their use. Phased scales, Transducer systems including phased away and stabilised units. "Colour" displays.	BILL OWEN
11.15	EXAMPLES AND DISCUSSION OF LOCAL RECORDINGS PART 1	Examples of local recordings discussed and explained.	REINHOLDT WAWORSKI
12.00 pm		LUNCH	
2.00 to 4.00		Practical echo sounder training on board "Kapala"	

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DAY 3 (MAY 15)

TIME	SUBJECT	OUTLINE	LECTURER
9.00 am	EXAMPLES AND DISCUSSION OF LOCAL RECORDINGS PART II KAPALA RECORDINGS	New South Wales Echosounder recordings of the sea bed and fish	KEN GRAHAM
10.00	THE NETSOUNDER ECHOGRAMME	A description of the echo sounder picture as displayed by the netsounder. The base line, i.e. headrope, the footrope, the sea bed, the sea surface. Fish echoes: signal loss. Trawl track displays on echo sounders - difference in time in such displays.	TERRY GORMAN
11.45	PRINCIPAL TYPES OF NETSOUNDERS AND THEIR APPLICATION	Simple netsounds, multi-net sounds, displays. Types of transmission, their advantages and disadvantages.	TERRY GORMAN
12.00 pm		LUNCH	
2.00 to 4.00		Practical training on board "Kapala" with netsounder and sonar.	
5.30 to 8.00	FILM NIGHT	General fishing films.	

TIME	SUBJECT	OUTLINE	LECTURER
9.00 am	SONAR THE ECHOGRAMME	A detailed description of the echogramme from a sonar set giving the reasons for the characteristics of the recording. The difference between it and an echo sounder recording. Changing scales, sounding vertically, interference noises, ships wake, fish echoes, bottom echoes.	JOHN HILL
9.45	FACTORS AFFECTING THE ECHOGRAMME	Frequency, pulse length, beam width, output power, behaviour of the sound beam in water, i.e. refraction. Effect of heavy idling and pitching. Correct positioning of the transducer.	JOHN HILL
10.30	STAGES IN THE FISHING OPERATION	Methods of searching, use of high power long pulse. Automatic searching target location, use of audio signal: doppler effect. Estimation of target size, observation of target movement. Catch phase - use of low power short pulse, rapid scanning, wide sonar beam, rapid transmission.	JOHN HILL
11.00	DISCUSSION OF LOCAL RECORDING PART III	Slides of echo recordings and discussion of tactics using sonar and netsounds of catch fish off South Eastern Australia. Development of fishing tactics using information from netsounds and echo sounders. The combined use of sonar, echo sounder and netsounder - where to aim the net. Use of temperature read out. Local examples of netsounder recording on Jack mackerel, pilchards, lightfish and nannygai.	KEN GRAHAM
12.00 pm		Practical sonar training on board "Kapala"	
5.30	BARBECUE	A barbecue will be held at Gore Bay	

TIME	SUBJECT	OUTLINE	LECTURER
9.00 am	RADAR	Brief history, basic principles - limitations; display controls - brightness, gain, tune, cutter, etc; display interpretation - head up, north up; display features - range rings, H.L., VRM; radar plotting - navigational, safety (other vessels); add on facilities - radar watch MK3; radar reflectors.	BILL OWEN
11.00	RADIO COMMUNICATIONS	Outline of three services available to fishermen - H.F. radio service, I.B.R.S. (27 Mhz), V.H.F. (seaphone); advantages of these services; operating range; equipment cost.	J. O'TOOLE
12.00 pm		LUNCH	
1.00	LONG RANGE COMMUNICATIONS	H.F. radio	J. O'TOOLE
2.30	SHORT RANGE COMMUNICATIONS	I.B.R.S.; V.H.F.	P. A. LEVY
4.00	E.P.I.R.B.s PRACTICAL DEMONSTRATION ON MV "DAMEELI"		

LECTURERS: Bill Owen - group marketing manager, marine and aviation division, A.W.A. Ltd.

John Hill - consultant, Department of Electrical Engineering, University of Melbourne.

Reinholdt Waworski - lecturer at the Maritime College in Launceston, Tasmania.

Terry Gorman - senior biologist, marine exploration, Division of Fisheries, NSW Department of Agriculture.

Ken Graham - biologist, marine exploration, Division of Fisheries, NSW Department of Agriculture.

Capt. Alan Norton-Smith - Master, "Kapala".

John O'Toole - A.W.A.

Peter Levy - A.W.A.

John Turner - A.W.A. Master of "Demuli"

REQUEST FOR PAYMENT

Part 1 - Machine Input

49
37

Creditor Number

Creditor Name NSW DEPT OF AGRICULTURE

Postal Address PO BOX K220

HAYMARKET

NSW Postcode 2000

Description of Goods 2ND HALF FIRTA 1984/85 GRANTS

and / or Services S1/2, 67, 84/65, 66, 67, 68, 69

Claimant's Reference Number:

81/2 ✓

Appropriation Code	Reqn. No.	P/C	Charge Code	Amount	
			5340-1542	2352100	81/2
			5340-89+	1582500	81/67
			5340-881	3125000	84/66
			5340-1024	2150000	66
			5340-1323	1946800	67
			5340-1331	3722500	68
			5340-134+	2295000	69

TOTAL PAYMENT \$ 12426400

Part 2 - Other

- I certify that:
- ~~(1) the goods have been supplied and/or the services rendered;~~
 - (2) payment is within the total allocation for the project(s) and/or is in accordance with the Ministerial approval;
 - (3) the transaction is correct for payment.

*Delete whichever inapplicable.

R. Naumann Signature
R. Naumann Printed Name
A/S CLK C18 Designation
AFS EBB Location
19.4.85 Date
5485 Phone
 S679-7/84