AUSTRALIAN MARITIME COLLEGE

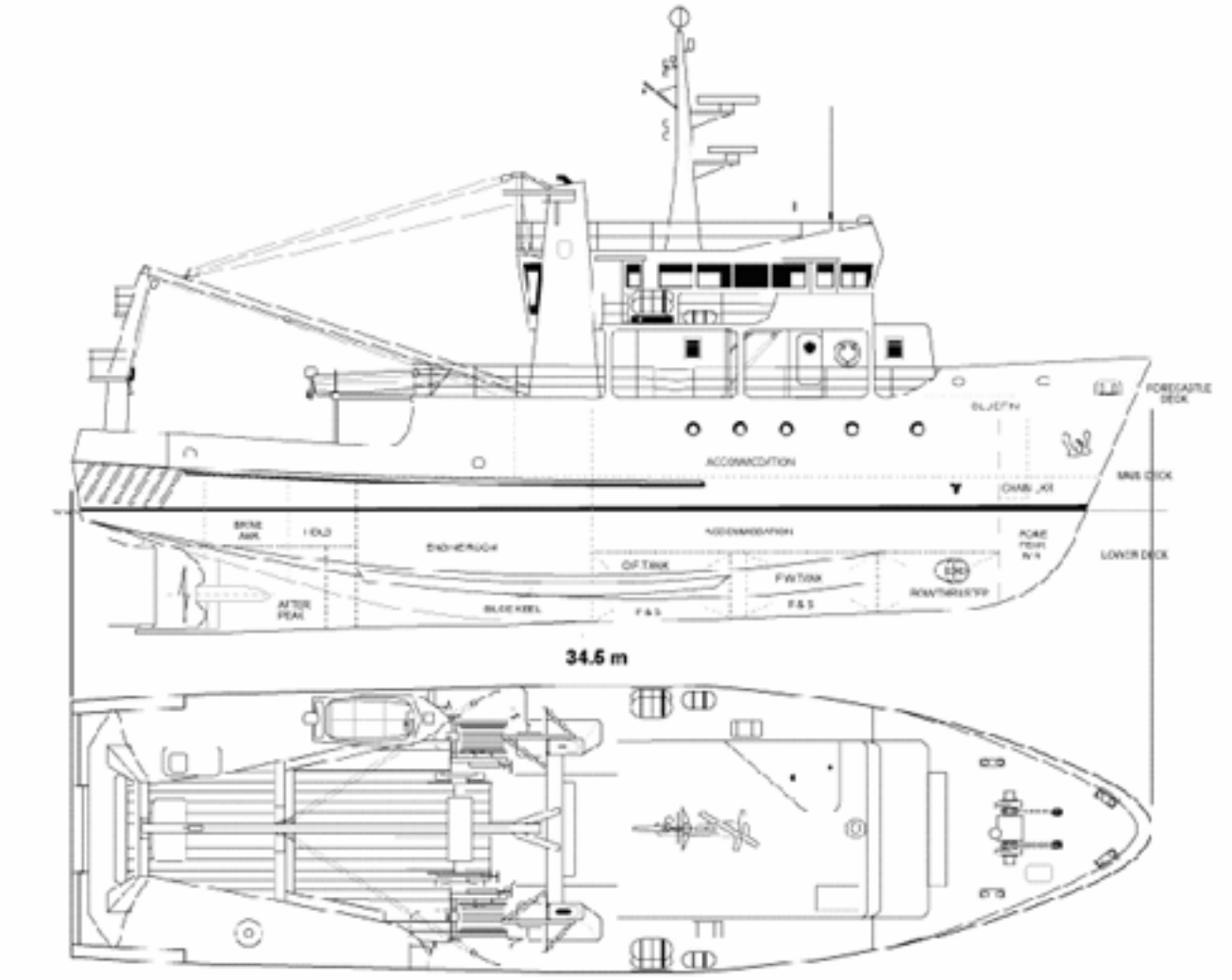
FTV BLUEFIN

SPECIFICATIONS

AMCsearch LTD

WAY AHEAD !

FTV Bluefin



MAIN DIMENSIONS

Length OA	34.50 m
Length BP	32.00 m
Breadth	10.00 m
Freeboard to working deck	1.20 m
Maximum draft	4.40 m
Deadweight	53.60 t

DESIGN PARTICULARS

Hull materials	Steel

RANGE, SPEED AND ENDURANCE

Cruising range	2,500 nm
Cruising speed	10.0 knots
Maximum Speed	10.5 knots
Endurance	15 days

ACCOMMODATION

Officers + Crew	5 persons
Scientists + Trainees	20 persons

Air Conditioned

Accommodation is designed to passenger standard for lecturers and students. As such, it is much more comfortable than accommodation in normal fishing boats.

ELECTRICAL SYSTEM

AC Voltage 415V total 96kVA 3 phase 50 Hz
AC Voltage 415V total 96kVA 3 phase 50 Hz
AC Voltage 24V total 30kW
Stabilised system for scientific equipment
Voltage 240 VAC total 60 AMP 50

RESEARCH FACILITIES

Marine Biology Wet Lab	9 square metres
Research Office, with computers and microscopes	10 square metres

Sheltered deck space with work tables

CAPACITIES AND WORKING SPACES

Gross Tonnage	387GRT
Dry cargo hold No. 1	4 cubic metres
Fuel	46 cubic metres
Fresh water	30 cubic metres
Ballast water	20 cubic metres
Wet laboratories (total area)	9 square metres
Dry laboratories (total area)	10 square metres
Hold for fresh fish	5 cubic metres
Hold for frozen fish	3 cubic metres
Free working deck area	20 square metres
Space for container laboratory	6m x 6m

Vessel Name:	BLUEFIN
Flag:	Australia
Type:	Fisheries training/research vessel – multipurpose stern trawler
Survey:	Class 2A and UMG (USL Code)
Ocean or sea area(s) where vessel operates:	*Area 1:* Tasman Sea
	Area 2: Pacific, Southwest
Owner:	Australian Maritime College
Operator:	Same
Street Address:	Newnham Drive,
Mailing Address:	P.O. Box 986, Launceston, 7250
Country:	Tasmania, Australia
Telephone Number:	(03) 6335 4855
Telex Number:	58827
Facsimile Number:	(03) 6326 3790
Contact name in your Institution for further information on vessel(s):	Mr John Foster
Yard where built:	Tamar Steel Boats
In Country:	Tasmania, Australia
Year built:	1981

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Maximum draft	4.40 m
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DESIGN PARTICULARS

Hull materials – Steel

Energy Sources - .1 Diesel Propulsion

Main Engine:

Power (BHP) Caterpillar	850 HP at 1,200 rpm
Diameter and max. rpm propeller	2.20 m at 240 rpm
Total power auxiliary diesels, excl. Harbour / emergency set	180 KVA

Electrical system:

.1 AC Voltage	/415V	total	96kVA	3 phase	50 Hz
.2 AC Voltage	/415V	total	96kVA	3 phase	50 Hz
.3 AC Voltage	24V	total	30kW		
.4 Stabilised system for scientific equipment.					
Voltage	240 VAC	total	60 AMP		50 Hz

Picture of BLUEFIN

Main Engine – Caterpillar Electric Start 24V DC
Model D 398 Rated at 634KW (850HP) at 1,225 RPM
Fitted with sea-water cooled inter coolers
Governor = Woodward UG8

Reduction gear = Ulstein
Type 220 GSC Ratio = 4.94 – 1
Controls Make MAR-EL No. 512
Type electronic hydraulic with automatic overload control
Propeller, Make = Ulstein, Rotation RH
Model 4 blade Diameter = 2.2m Variable Pitch

Stern tube and seal. HDW Simplex compact (oil lubricated)
Forward power take-off, Make = Twin Disc
Model SP 214 PM T1 Triple output, Rating 38.5 HP / 100 RPM = 471.62/1,225 RPM
Auxiliary Engines – Caterpillar Electric Start 24V DC
Model 3304 rated at 85KW at 1,500 RPM at 0.8 power factor
Governor = Woodward PSG

Generators = Caterpillar SR4. Model 5.192

Voltage regulators, Basler Voltage = 415V x 3HP. 240 x 1HP x 50 HRZ

Model SR4A with build in battery for field flashing, also fitted with emergency hand control.

Excitation support system, Basler

Model SBO – 242

Overcurrent and Revers power protection system. Genop-21

Trip. settings	= No. 1 refrigerators	= 120 amps	Time delay	= 5 secs
	= No. 2 non-essentials	= 138 amps	Time delay	= 3 secs
	= No. 3 short circuit	= 150 amps	Time delay	= 10 secs

Fuel System

The fuel is carried in two double bottom tanks port and starboard forward of the engine room bulk head. Port tank has a capacity of 19.5 tonnes, the starboard tank 22 tonnes. From the main tanks the fuel is pumped to what is called a daily service tank or settling tank. This tank has a capacity of 3.1 tonnes. The fuel then passes through a filter and is then fed to the main and auxiliary engines.

APPROX. FUEL CONSUMPTION

11 knots: 140 litres per hour
5 knots: 60 litres per hour

RANGE, SPEED AND ENDURANCE

Cruising range	2,500	nautical miles
Cruising speed	10.0	knots
Maximum speed	11.5	knots
Endurance	15	days

Manoeuvring and Propulsion

C.P. propeller

Bow thruster

Bow anchor, length anchor cable 150m

Steering Gear

Wagner electric hydraulic twin ram

Model T-15-35-EB2. Full follow up

Automatic change over to hand steering on loss of power

Relief valve setting – 1,000PSI

Rudder

Type = Balanced

Angle 37 ½° or 75° total

Hard over to hard time – 11/22 seconds

In 1985 an Alfa Laval Separator model MAB-103B with a solids retaining bowl assembly was installed. The purpose of this unit is to

(a) Clean and maintain the hyd oil in a satisfactory condition

(b) To remove water and contaminant from the fuel. The separator is used at sea to transfer fuel from the double bottom tanks to the daily service tank and also to circulate this tank.

In the separator bowl the liquid being treated is subjected to approximately 7,000 times the earth's gravity.

There is a further power pack in the steering flat for driving the net sound winch. Consisting of a 15HP electric motor, driving double pumps of 1.5 gallon and 4 gallons out put at 2,000 PSI. This unit is also used for operating the deck hatch leading down into the fish handling room.

PUMPS AND PIPE SYSTEMS

Cooling Water

The cooling water for the main and auxiliary engines is circulated by engine-driven pumps manufactured by Caterpillar. This applies to both the fresh and the salt water.

The Air Conditioning Refrigeration plant condensor is sea water cooled also using a mono CD 60 pump with a similar relief valve working at a pressure of 200 KPA.

Domestic freshwater

The fresh water is stored in two double bottom tanks with a total number of 29.7 tonnes. From the selected tank the water is pumped into a pressure vessel controlled by a pressure switch. From this pressure storage the fresh water is distributed throughout the vessel.

Domestic salt water

The salt is drawn from the sea water main and pumped into a pressure vessel. This pump is also controlled by a pressure switch. From the storage tank the water is piped into the ship's toilets.

Sewage System

The ship's toilet and all sullage water from the lower deck drains into the sewage tank which is situated in the forward part of the engine room. From here it is pumped through a macerator and automatically discharged overboard.

Fire Main (water on deck)

This is supplied by an electrically driven centrifugal pump type 1 ¼ -9 manufactured by Kelly & Lewis.

This pumps draws salt water from the sea water main and feeds the ship's fire main switch which also is used as a general service pump.

There is an additional emergency fire pump driven by and independent diesel motor situated in the steering flat which doubles for this purpose.

Bilge Pumping

The vessel is divided into a number of compartments each having a bilge suction pipe leading to a valve chest, which in turn is connected to the bilge pump section chest. This valve chest has also got a sea injection valve for priming purposes. The bilge pump is a self priming type make, Kelly & Lewis, model Pegson 2" B3. This pump is also used for pumping water ballast from the fore and after peaks tanks. The pump discharges overboard. Bilge water is stored in an overhead bilge tank and discharged to shore facility.

Fish Handling Room

There is a branch from the fire main supplying sea water for washing down, cleaning fish fillets, etc.

The handling room has a large drainage sump on the starboard side fitted with a float switch and a high level alarm. The float switch controls a CD 60 mono pump situated in the engine room which pumps the sump contents overboard as required.

Navigation and communication

Item	Manufacturer	Model	
Echosounder	Furuno	FE-824	DRY PAPER, 28KHz AND 200 KHz TRANSDUCERS
Echosounder	JRC	JFC-216	COLOUR, 28KHz AND 200 KHz TRANSDUCERS
Echosounder	Simrad	EQ Mk 3	50 KHz TRANSDUCER
Radar	JRC	JMA-3525	RASTER SCAN SONAR 96 nm RANGE
Radar	Furuno	FR-2115	RADAR WITH A.R.P.A., 21" DISPLAY
Gyro Compass & Auto Pilot	Tokyo Keiki		
Doppler Log	JRC	JLN-203	
Sea Surface Thermometer	TMQ		
Net Monitor	Furuno		RELATES HEIGHT ABOVE ASEABED AND DEPTH BELOW SEA SURFACE
Weather Fax	Furuno		
Remote Position Radio Beacons	Koden		AUTOMATIC DIRECTION FINDING
Differential GPS	Furuno		CORRECTED GLOBAL POSITIONING
Wind Indicator	Young		WIND VELOCITY (DIRECTION AND SPEED)
Plotter	TMQ		ELECTRONIC CHARTS UTILISING DGPS SIGNAL
GMDSS	Furuno		GLOBAL MARINE DISTRESS SIGNALLING SATELLITE (ALLOWING UNRESTRICTED COMMUNICATIONS WITH SHORE FACILITIES)
Satellite Telephone	Westinghouse		
Seaphone	GME		
Alarm Systems	Litton Decca/Wormald		MONITORS VESSEL FUNCTIONS

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Storage

Cold storage of samples, volume: 5 cubic metres

TRANSFER BOAT

5 metre, aluminium, 50HP outboard

HYDRAULICS

Relief Valve Settings = 2000 PSI

The vessel's hydraulic system consists of 4 pumps driven off the main engine power take off, ie. two pumps of 103 gallons each, on double pump of 50 gallons and of 20 gallons making a total of 276 gallons per minute.

There is also an electrically driven 20 gallon pump for standby and harbour duty.

The system is divided up as follows:

> When using the bow thruster: One of the 103 gallon pumps and also the 50 and the 20 gallon pump are diverted via directional control valves to the bow.
>
> Port Trawl Winch: When fishing the port side, 103 gallon pump supplies the portside trawl winch.
>
> The starboard: 103 gallon pump supplies the starboard trawling winch and net winch (valves fitted). The net winch has additional flow control. The 20 gallon pump supplies the Gilson winches, the derrick topping winch, the derrick hoist winch, or the windlass as required. The 50 gallon pump is returning to tank.

The flow from the 20 gallon per minute standby pump can be diverted for any of the above functions but will give a greatly reduced speed on the larger units.

Bow Thruster

Make = Ulstein, Type = 14T, Thrust = 1.5 tonnes maximum

Hydraulic motor – Vickers 50m 255A-1C-20

Maximum RPM 1575 125HP

Propeller – Diameter = 900mm, No. of blades = 4, maximum RPM = 576

Windlass

Make = Port Deck Marine, hydraulic drive

Twin gypsy twin independent warp ends

Fitted with dog clutches and mechanical brakes

Bollard Pull

9 Tonnes

Derrick

160° swing

3 tonne single purchase lift

In 1997 *Bluefin* was fitted with bilge keels situated on her chine. These have reduced her rolling and increased her sea kindliness. As a result, she supplies a reasonably stable platform for activities above and beyond her fishing duties.

REFRIGERATION

Domestic

Cool room, temperature	=	+3°C	Capacity	= 1.44 tonnes
Freezer	=	-20°C	Capacity	= .83 tonnes

Condensors, tubular fresh water cooled

Refrigerants = R404A and R408A

CARGO

Blast freezer	=	-30°C	Capacity	= 1.45 tonnes
Fish hold variable down to		-10°C	Capacity	= 2.34 tonnes

Brine tanks N/A

BACK DECK GANTRY (A-FRAME)

• Height	4-5 metres from main deck level
• Width	2.3 to 3 metres
• SWL	3 tonnes
• Hydraulic? Capacity for simultaneous winch and A-Frame Ops?	No
• Outboard reach	0.5 to 1 metre
Winch:	Two main winches with 1500 metres of wire
• Location	Fwd main deck level

• Wire diameter	32mm
• Wire length	2*2500 metres
• Winch speed	3-5 metres per second
Winches can be run through Gantry, utilising blocks and certified strong point.	
Tugger Winch:	**Gilson:**
• Location	Fwd Main deck in first level
• Wire diameter	20 mm
• Wire length	185/200 metres
• Winch speed	free fall to 5 metres/sec
• Test Certificates	At college
• Suitable to run through A-Frame?	Yes

OVERSIDE POLES

Purpose built pad eyes and mounts are available and can be secured to both sides of the hull.