

# LANCER

## INFLATABLE BOAT

**P390**



Manufactured by

**Lancer Industries Ltd.**

P.O. Box 83-136, Henderson,  
Auckland, New Zealand

# TECHNICAL SPECIFICATION

## 390P PROFESSIONAL BOAT

Prepared by C Winstone

### **1. INTRODUCTION**

#### **1.1 GENERAL**

This describes fittings and features on a standard Lancer Professional Boat.

The Lancer Professional 3.9 meter (P390) Inflatable Boat is intended for operation where speed, portability and ultimate durability requirements are combined with the need for maximum sea keeping performance in exposed waters. A study of requirements for commercial uses showed that designs available were suitable only for sheltered waters having a shallow V and giving a wet and uncomfortable ride.

For off-shore use, rigid hull inflatables were available which gave a significantly better performance, but which had distinct disadvantages of weight, cost, lack of portability and an increased likelihood of impact damage.

To meet commercial requirements for off-shore use, a computer program was developed to establish stresses and pressures at various points in the hull during operation. The design parameters then discovered lead to the development of a craft with a 23 degree V amidships, able to handle the worst sea conditions but still permitting a smooth flow of water to the propeller.

In addition the Lancer design allows the boat to flex to absorb the shock of heavy seas.

The Lancer Professional Craft has similar sea keeping ability to a rigid hull inflatable, but with a greater ability to absorb shock and impact damage.

In recognition of the work carried out over a number of years to investigate the requirements of the off-shore user and the features incorporated in the design to meet these needs, Lancer received one of the few coveted design awards given annually by the New Zealand Industrial Design Council.

The boat is highly suited as a tender to a mother ship or servicing off shore facilities such as light houses, drilling platforms, general diving, reconnaissance and exploration work. It is also suitable for assistance in an emergency as a Stand by Vessel or Rescue Boat.



Lancer P390 provides the only access to the remote Raoul Island for the New Zealand Department of Conservation

## 1.2 P390 Stock Models

The P390 is available in 4 models:

- Workboat
- Heavy Duty Workboat
- Approved Inflated Rescue Boat
- SOLAS Rescue Boat.

The Heavy Duty Workboat has extra cladding designed to ensure the longevity of the boat under the harshest commercial applications. This model can also be converted to an Inflated Rescue Boat.

Lancer's SOLAS Rescue Boat is the smallest SOLAS approved boat available and can be used in a multipurpose role, such as a workboat or passenger boat.



SOLAS Rescue Boat for tourism

Lloyds Shipping approval is available by special arrangement.

### 1.3 PRINCIPAL DIMENSIONS (Basic Boat)

	Overall	Internal	Packed Boat	Packed Floor 5piece
Length	3.9 m (14'9")	3.35 m	1.5 m	1.21 m
Beam	1.76m (6'4")	.97	0.77m	0.82m
Height	0.4m			
Tube Diameter	0.48			
Air Chambers	5 plus Keel			
Weight	113 kg Hull and Tubes with 3 pce Fibreglass Floor Boards			
Capacity Persons	12 ( ISO and BSMA 16 Standards - 75 kg persons)			
Maximum Rated Load	2320 kg (3164 lbs) Includes motor and fuel allowance.			
Dead rise	15 degree			

### 1.4 PROJECT MANAGEMENT

Lancer has a long history of managing major and complex projects and draws upon a team of experts made up of: naval architects, engineers, fibreglass composite consultants, offshore power-boat racing veterans. This team strives to ensure that quality surpasses customer expectation.

Lancer specialise in customising boats to suit specific applications.

### 1.5 PREVIOUS PRODUCTION

The P390 has been used by many commercial operators both in New Zealand and overseas. Including the New Zealand Navy, NIWA, Sanfords Fisheries, NZ Steel, Malaysian Army and Hong Kong Police to name a few.



NZ Navy on exercise P390 1

## **2. OPERATIONAL CAPABILITIES**

### **2.1 SPEED**

The hull rises to the plane easily around 10 knots, cruises comfortably at 15 to 24 knots in sea state 3 and is capable of being driven around 30 knots in sea state 2.

	Payload	Speed	Hump speed	Sea State
1 x 30 hp Outboard	300 kg	25 knots	10-12	3
1 x 30 hp Outboard	300 kg	18 knots	10-12	5
1 x 15 hp Outboard	300kg	10 knots	10-12	3

### **2.2 SEA CONDITIONS**

Operational in shallow water 0.7m with a moulded draft 0.15 m. The boat is capable of high speeds, 25 knots plus, in up to sea state 3 and the hull is fully seaworthy at planing speeds in sea state 8.

### **2.3 RANGE**

Normal basis for calculation unless specified otherwise. Minimum range 80 Nm @ 20 kts with 5% fuel reserve remaining.

### **2.4 MANOEUVRABILITY**

Turns within a radius of four boat lengths when proceeding at 50% of engine continuous RPM and within ten boat lengths when proceeding at 100% of engine continuous RPM. When going astern, turns within 4 boat lengths, with engines at 25% of continuous RPM . (Subject to variation depending on outboard selection.)

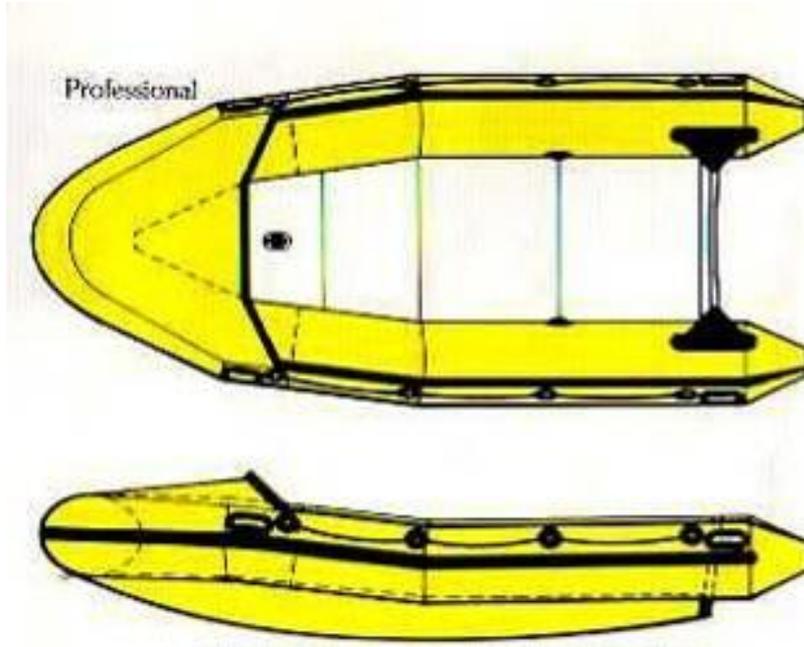


## **PRODUCT DESCRIPTION**

### **2.5 GENERAL LAYOUT**

The hull is an exceptionally deep vee, with an easy planning form bottom and 15 degree deadrise at the stern. The hull is stable in the static and dynamic mode. Self draining scuppers are fitted for above deck flushing and Duckbill drain valves clear below deck water.

The internal hull configuration enables major components such as Fuel Tanks, Steering Consoles, and Seating to be customised in a number of positions.



### **2.6 HULL**

The hull consists of an inflatable tube structure with an inflatable keel, plus either a 3 piece composite fibre glass floor. The external colour is Rescue Yellow with black trim unless specified to the contrary.

### **2.7 HULL HARDWARE**

Various options are available to suit individual requirements. For details refer to general arrangement.

### **2.8 TUBES**

Tubes are divided into 5 compartments. Standard colours are yellow with black trim. unless specified to the contrary

The Tubes are made from nylon fabric coated with Pennel & Flipo ORCA Hypalon This fabric is made exclusively, for Lancer, and has the highest resistance to abrasion, harsh sunlight, ozone and ultra violet rays, of any fabric available for inflatable craft.

All fabrication of the Hypalon fabric is be done in Lancer`s 20,000 sq ft purpose built plant, in atmospherically controlled conditions against time controls.. Seams are cold bond, with neoprene based two part adhesive. The strength of the seams used in the tube exceed the strength of the fabric. Construction standards exceed ISO 6185 -Inflatable boats.

All seams are jointed and taped internally and externally. All compartments are fitted with corrosion proof valves with a double-seal closure. All fittings are fabricated from hypalon fabric, nylon, polyester and where required stainless steel. Fittings are attached in such a way that if they are torn off it will not affect the integrity of the Tube.

1 x 150 mm rubber rubbing strake fitted around the boat. (Tougher or wider materials can be provided if required.)

### **2.9 ENGINE**

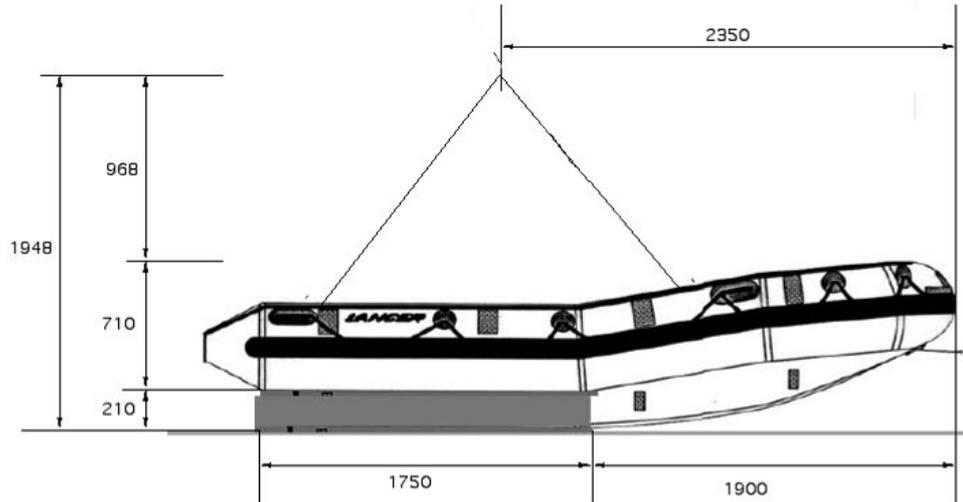
The boat operates efficiently with 15 to 45 hp longshaft outboards. (Short shaft option on request).

1 x Transom Pad - External, wooden for bedding motor.

1 x Transom Motor Plate -Internal, metallic with outboard securing eye for protecting Transom from motor wear and fixing outboard safety line.

## 2.10 Electrics

Optional Extra



## 2.11 ACCESSORIES

	Standard	Heavy Duty	Approved	SOLAS
Towing D Ring (single)	X	X	X	X
Keel and Tube Running strip	X	X	X	X
Life Line	X	X	X	X
Grab Handles	X	X	X	X
Duckbill Drain and plug	X	X	X	X
High Volume Scuppers	X	X	X	X
Repair Kit	X	X	X	X
Manual	X	X	X	X
Bellows	X	X	X	X
Retainer and Paddle (2)	X	X	X	X
Bridle D Ring		X	X	X
Spray Dodger		Optional	Optional	Optional
Cladded Bow		X		
Extended Running Strip		X		
Cladded Cover		X		
Accessory bag			Optional	X
Binnacle				Optional
Boarding Ladder			Optional	X
Boat Hook			Optional	X
Buoyant Bailer			Optional	X
Davit Lifting Arrangement				X
Davit lifting points		X	X	X
Fire Extinguisher (ABE)			Optional	
Painter with Release			Optional	X
Radar Reflector			Optional	X
Righting Arrangement				X
Safety Knife			Optional	X
Sea Anchor			Optional	X
Floor mounted seat (2)				X
Reflective Tapes				X
SOLAS first Aid kit			Optional	X
Sponge			Optional	X
Thermal Protective Aid (Pair)			Optional	X
Throwing Line			Optional	X
Thwart (seat)			X	X
Torch (inc spare batteries)			Optional	X
Towing Arrangement				X
Under thwart Stowage			Optional	X
Whistle			Optional	X
Inspection and Boat papers				X
Lloyds Approval by arrangement				X

### **3. OPERATIONAL ENVIRONMENT**

#### **3.1 AMBIENT TEMPERATURE**

Lancer boats are built to operate in tropical conditions; boats have been used for many years and in conditions varying from Greenpeace, Antarctic Expedition, to N.Z. Naval in South East Asia.

Lancer has also conducted International Maritime Organisation SOLAS test on Inflatable Boats at -30o C and 120oF 48.9C the materials are unaffected.

#### **3.2 HUMIDITY**

As indicated above the fabric has been used in 0-100 % relative humidity.

#### **3.3 SUN EXPOSURE**

The majority of Lancer's products are exposed to the abnormally high UV levels associated with New Zealand. Many boats being stored outside for periods of over 10 years. No significant deterioration is noticeable.



## **SUPPORT SERVICES**

### **3.4 TRAINING**

The boat is relatively simple to operate, but it is recognised that efficient handling in a crisis depends on competent operators, where required Lancer can provide specialised training.

### **3.5 OPERATING, MAINTENANCE AND REPAIR MANUALS**

A detailed operating, maintenance and repair manual will be provided to cover all aspects of the boat.

### **3.6 WARRANTY & SERVICE LIFE**

The boat has an effective life of over ten years if maintained properly. For planning purposes it is recommended that the service life should be based on fifteen years. For warranty details refer Policy.

Manufacturer by

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