# A History of Excellence





PATROL BOATS - PASSENGER BOATS - PILOT BOATS SURVEY BOATS - DHOWS - AMBULANCE BOATS MOORING BOATS - TRAWLERS - ABRA



Established in 1976, Riviera is one of the most reputed companies in the Middle East. For the past 40 years we have established a great standing in the market through strong client relationships. Having constantly worked towards upholding old traditions while developing new technology, we make our products safe and reliable for our clients.

Over the years we have managed to carve a niche for ourselves. With the world changing fast and new methods of travel and lifestyle coming into light, we continue our quest towards providing solutions that adhere to international standards of reliability, luxury as well as safety.

Riviera Pool was the rst boat builder in the Middle East region to build the traditional 'Dhow' in GRP material as shing and pleasure boats. Consequently the company added yachts, stern-boom trawlers, tour boats, pilot boats and work boats in its range of boats designed in collaboration with German and Swedish naval architects. The motivation of the company was to full a local need with international quality. Quality at minimal cost and with excellent aer-sales service was to be the primary focus.

With a factory capacity of around 800,000kg GRP moldings per annum and a product line comprising of commercial boats, shing, pleasure, patrol, pilot and work, yachts, marinas, swimming pools and various multi-purpose GRP products and advanced composites, the company Riviera has set market standards.

Riviera boat maintenance facility at Hamriyah Free Zone is a state-of-the-art unit oering a wide range of servicing and upkeep options. Riviera houses one of the few boat liing equipments in the region. Our straddle carrier can li boats up to 300 tones. is helps the task to be undertaken with no harm coming to the body.

Riviera's journey to success has been possible by its persistent endeavor to keep in view of the requirements of growing customers, to adopt the latest technologies and to enhance and improve the production line.



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# **8.5M PATROL BOAT**





# **SPECIFICATIONS**

L. O. A	8.90 M
L. W. L	7.00 M
BEAM	2.25 M
DRAFT LOADED	0.52 M
DISPLACEMENT (LOADED)	4TONS (APPROX.)
MAXIMUM SPEED	UP TO 45 KNOTS
ENGINES	OUTBOARDS
FUEL TANKS	500 LTRS.
WATER TANKS	150 LTRS.







# 9.5M INTERCEPTOR / PATROL BOAT

# ....

# 10M INTERCEPTOR/ PATROL BOAT (NEW GEN)



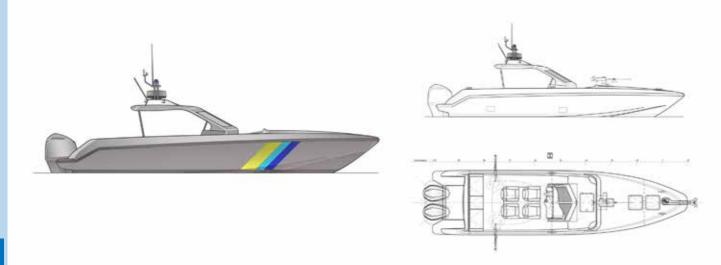
# **SPECIFICATIONS**

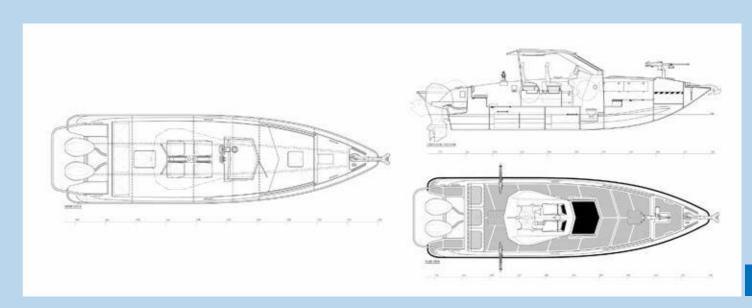
L. O. A MOLDED	9.50 M
L. W. L	7.75 M
BEAM	2.63 M
DRAFT	0.50 M
DISPLACEMENT (HALF LOAD)	3.5 TONS (APPROX.)
DISPLACEMENT (FULL LOAD)	4.0 TONS (APPROX.)
FUEL TANKS	650 LTRS.
FRESHWATER TANK	150 LTRS.
MAX. SPEED	50+ KNOTS
NUMBER OF CREWS	FOUR (4)

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# **SPECIFICATIONS**

L. O. A	10.40 M
BEAM	3.94 M
DRAFT LOADED	0.90 M
DISPLACEMENT (LOADED)	3TONS (APPROX.)
MAXIMUM SPEED	50 KNOTS
FUEL TANKS	600 LTRS.
WATER TANKS	200 LTRS.







# 11M INTERCEPTOR/PATROL BOAT (INBOARD ENGINES)



# 11M INTERCEPTOR/PATROL BOAT (CLOSED CABIN)





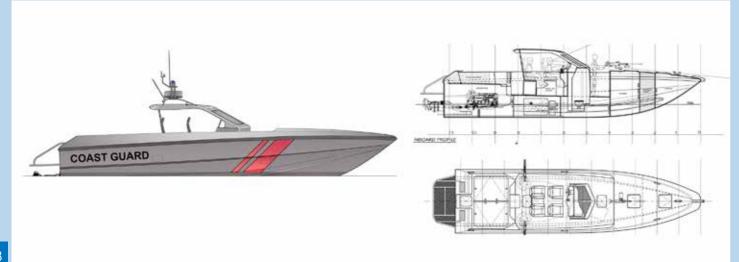
# **SPECIFICATIONS**

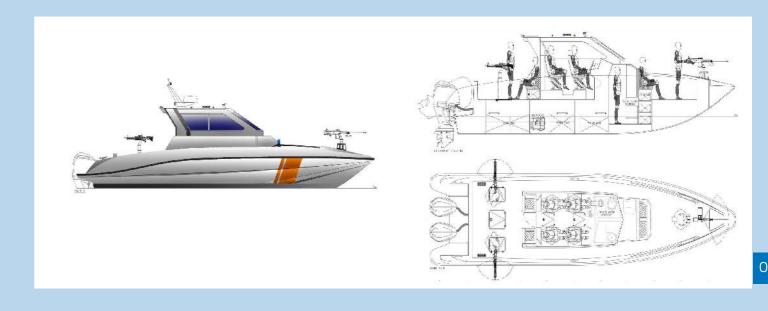
12.75 M
11.25 M
9.11 M
2.70 M
0.57 M
7.0 TONS (APPROX.)
45 KNOTS
750 LTRS.
150 LTRS.
Q-SPD SURFACE DRIVE
KAMEWA WATER JETS

# **SPECIFICATIONS**

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L. O. A	11.10 M
BEAM	2.90 M
DRAFT LOADED	0.50 M
DISPLACEMENT (LOADED)	4TONS (APPROX.)
MAXIMUM SPEED	40+ KNOTS
FUEL TANKS	800 LTRS.
WATER TANKS	200 LTRS.





# 12 M PATROL BOAT



# 13M INTERCEPTOR / **PATROL BOAT**





# **SPECIFICATIONS**

Riviera Boat

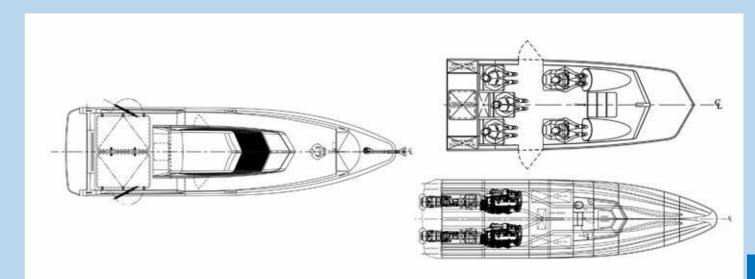
L.O.A MOLDED	12.40 M
L.W.L	10.10 M
BEAM	3.14 M
DRAFT	0.75 M
DISPLACEMENT (HALF LOAD)	4.5 TONS (APPROX.)
DISPLACEMENT (FULL LOAD)	5.0 TONS (APPROX.)
FUEL TANKS	700 LTRS.
FRESHWATER TANK	200 LTRS.
MAX. SPEED	45+ KNOTS
NUMBER OF CREWS	FOUR (4)

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# **SPECIFICATIONS**

L. O. A (INCLUDING PLATFORM)	13.90 M
L. O. A (MOULDED)	13.00 M
D. W. L	11.30 M
BEAM	3.71 M
DRAFT LOADED	0.77 M
DISPLACEMENT (LOADED)	13TONS (APPROX.)
MAXIMUM SPEED	50+ KNOTS
FUEL TANKS	1500 LTRS.
WATER TANKS	150 LTRS.



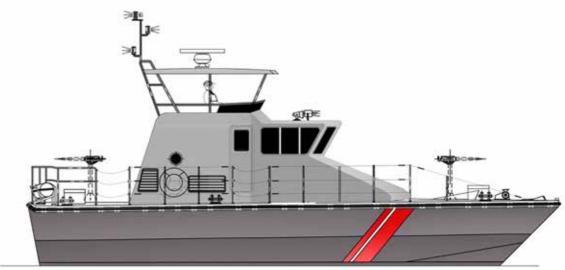


# 14.5M PATROL BOAT





# 15M PATROL BOAT



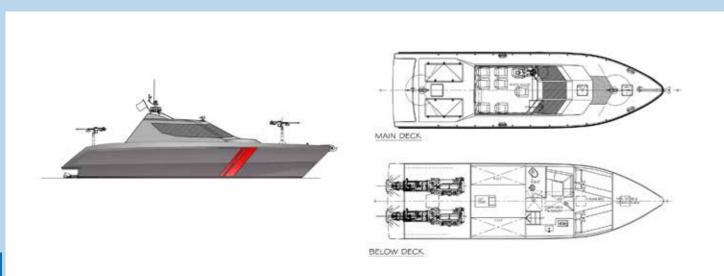
# **SPECIFICATIONS**

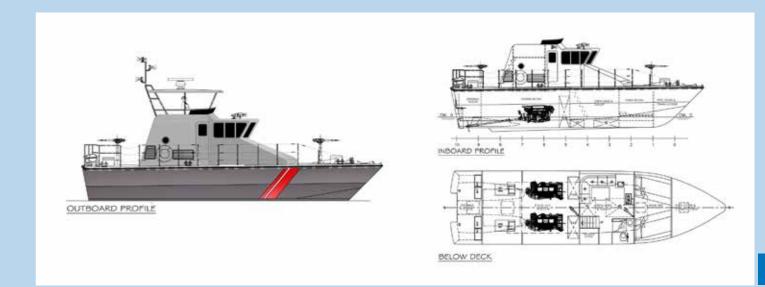
L. O. A	14.50 M
L. W. L	12.09 M
BEAM	4.000 M
DRAFT LOADED	0.65 M
DISPLACEMENT (LOADED)	15TONS (APPROX.)
MAXIMUM SPEED	45 KNOTS
FUEL TANKS	2000 LTRS.
WATER TANKS	500 LTRS.

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# **SPECIFICATIONS**

L. O. A	15.000 M
L.W.L	13.57 M
BEAM	4.000 M
DRAFT LOADED	0.85 M
DISPLACEMENT (LOADED)	23TONS (APPROX.)
MAXIMUM SPEED	30 KNOTS
SERVICE SPEED	24 KNOTS
FUEL TANKS	2000 LTRS.
WATER TANKS	500 LTRS.







# 15M INTERCEPTOR / PATROL BOAT

# **20M PATROL BOAT**



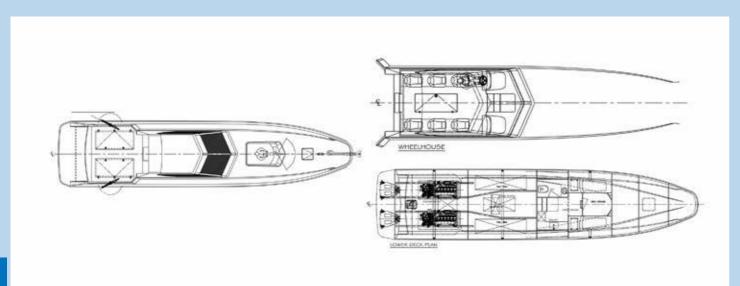
# SPECIFICATIONS

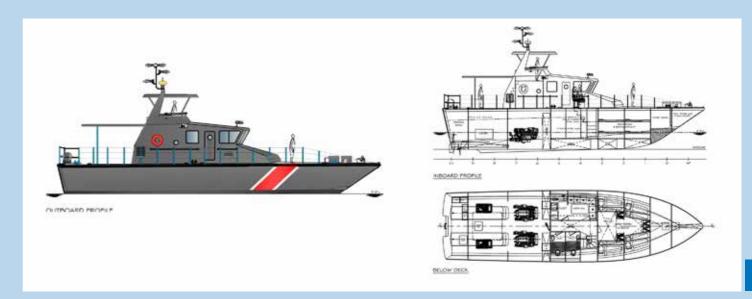
L. O. A	15.50 M
D. W. L	12.85 M
BEAM	3.40 M
DRAFT MOULDED	0.65 M
DISPLACEMENT (LOADED)	9TONS (APPROX.)
MAXIMUM SPEED	50 KNOTS
SERVICE SPEED	20 KNOTS
FUEL TANKS	1500 LTRS.
WATER TANKS	150 LTRS.
The state of the s	

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# **SPECIFICATIONS**

L. O. A	20.00 M
L. W. L	17.10 M
BEAM	5.50 M
DRAFT	1.30 M
DISPLACEMENT (LOADED)	35TONS (APPROX.)
MAXIMUM SPEED	24 KNOTS
SERVICE SPEED	20 KNOTS
FUEL TANKS	4000 LTRS.
WATER TANKS	1000 LTRS.



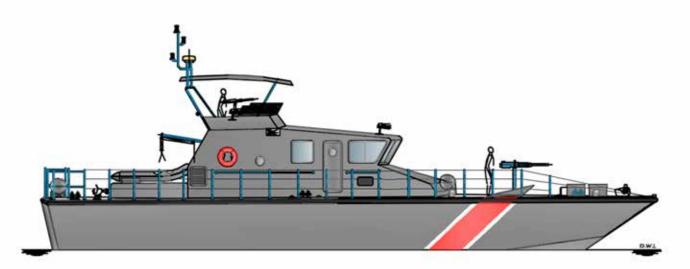


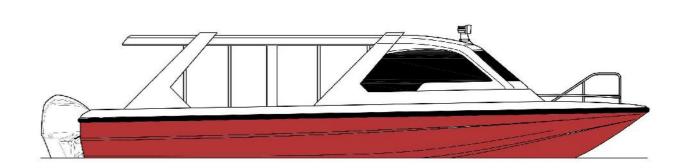
# Riviera Boat

# **22M PATROL BOAT**



# 11M OPEN PASSENGER BOAT





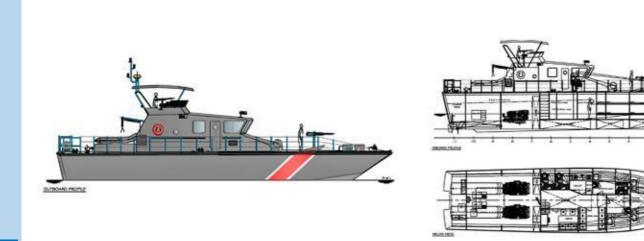
# **SPECIFICATIONS**

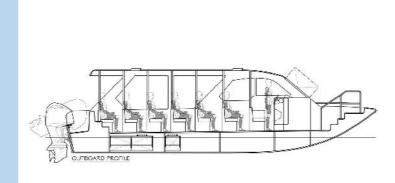
L. O. A	22.00 M
L. W. L	19.10 M
BEAM	5.50 M
DRAFT	1.30 M
DISPLACEMENT (LOADED)	45TONS (APPROX.)
MAXIMUM SPEED	24 KNOTS
SERVICE SPEED	20 KNOTS
FUEL TANKS	4000 LTRS.
WATER TANKS	1500 LTRS.

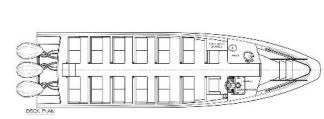
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# **SPECIFICATIONS**

L. O. A	11.10 M
BEAM	2.90 M
DRAFT LOADED	0.50 M
DISPLACEMENT (LOADED)	23TONS (APPROX.)
PASSENGERS	20 PAX
MAXIMUM SPEED	45 KNOTS
FUEL TANKS	800 LTRS.
WATER TANKS	200 LTRS.







# OTHER PASSENGER BOATS Riviera Boat

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# 14M CATAMARAN TRANSPORT BOAT



### **SPECIFICATIONS**

PARTICULARS	PASSENGER-30	PASSENGER-40	PASSENGER-60
L. O. A (M)	9	12	18
L. W. L. (M)	7.35	10.1	15.9
BEAM (M)	2.5	3.14	4.9
DRAFT (M)	0.6	0.65	0.85
DISPLACEMENT (TONS)	4.5	8.5	30
RECOMMENDED POWER (HP)X 2	300	350	1000
SPEED (KNOTS)	UP TO 45	UP TO 38	UP TO 35
PROPULSION SYSTEM	OUTBOARD / STERN DRIVE	FIXED PITCH /STERN DRIVE	FIXED PITCH /SURFACE DRIVE
FUEL TANKS CAPACITY (LTRS.)	500	600-1000	2000-3500
AIR CONDITIONING	N/A	OPTIONAL AVAILABILITY	AVAILABLE
BILGE SYSTEM	INDEPENDENT	INDEPENDENT	SEA CHEST
CLASSIFICATION (OPTIONAL)	B.V, G.L, DNV	B.V, G.L, DNV	B.V, G.L, DNV

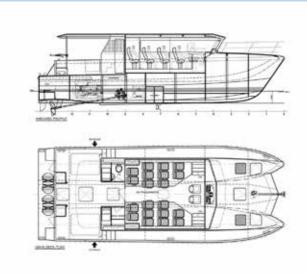
IONAL)	B.V, G.L, DINV	D.V, C	J.L, DINV	D.V, G.L, DIVV
PASSENGE	IR-30	MAIN DECK	BELOW DECK	
		E 1 0		G G G
PASSENGI	R-40	MAIN DECK	BELOW DECK	
PASSENGE	R-60	MAIN DECK	BELOW DECK	
	4000			

# **SPECIFICATIONS**

L. O. A	13.570 M
L. O. HULL	13.450 M
D. W. L	12.170 M
BEAM	5.620 M
DRAFT LIGHT @ PROP. TIP	1.350 M
DRAFT LIGHT @ ABOVE KEEL	0.645 M
DISPLACEMENT (LOADED)	25 TONS (APPROX.)
MAXIMUM SPEED	30 KNOTS (@ FULL LOAD CONDITION)
FUEL TANKS	2,000 LTRS.
WATER TANKS	300 LTRS.
COMPLIMENTS	20 PASSENGER'S + 3 CREWS









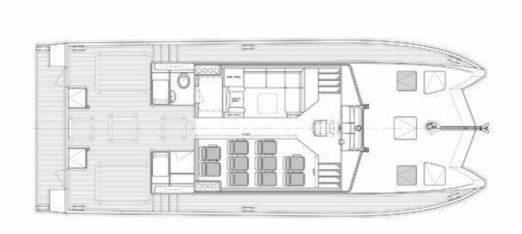


# **SPECIFICATIONS**

L. O. A	16.000 M
L. W. L	14.70 M
BEAM	5.62 M
DRAFT LOADED	0.64 M
DISPLACEMENT (LOADED)	28TONS (APPROX.)
PASSENGERS	80 PASSANGERS
MAXIMUM SPEED	30 KNOTS
SERVICE SPEED	24 KNOTS
FUEL TANKS	3000 LTRS.
WATER TANKS	300 LTRS.

14.70 M		www.riviera.ae
5.62 M		

**16M CATAMARAN** 

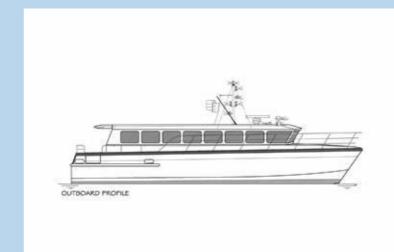


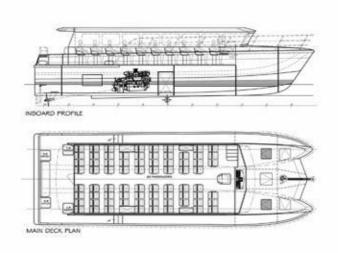
30 KNOTS (@ FULL LOAD CONDITION)

20 PASSENGER'S + 3 CREWS

2,000 LTRS.

300 LTRS.





MAXIMUM SPEED FUEL TANKS

**WATER TANKS** 

**COMPLIMENTS** 





# 12M OPEN CATAMARAN BOAT

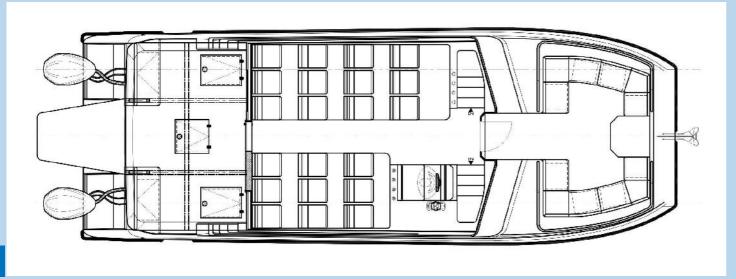
Rivield Boot

Rea 38

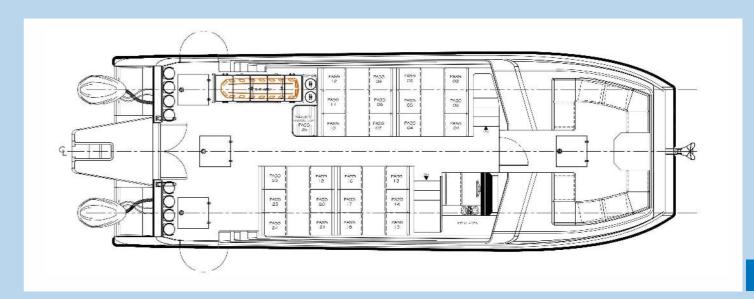
### **SPECIFICATIONS**

L. O. A	12.000 M
L. W. L	11.09 M
BEAM	4.16 M
DRAFT LOADED	0.64 M
DISPLACEMENT (LOADED)	8TONS (APPROX.)
PASSENGERS	33 PASSANGERS
MAXIMUM SPEED	30 KNOTS
SERVICE SPEED	24 KNOTS
FUEL TANKS	1500 LTRS.
WATER TANKS	200 LTRS.

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30 KNOTS (@ FULL LOAD CONDITION)



DRAFT LIGHT @ PROP. TIP

DISPLACEMENT (LOADED)

MAXIMUM SPEED FUEL TANKS

**WATER TANKS** 

COMPLIMENTS

DRAFT LIGHT @ ABOVE KEEL

0.960 M

**0.**545 **M** 

1,500 LTRS.

200 LTRS.

8 TONS (APPROX.)

21 PASSENGER'S + 9

# 15M PILOT BOAT VI



# 15M PILOT BOAT V2

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# **SPECIFICATIONS**

Riviera Boat

L. O. A	15.000 M
L. O. HULL	13.05 M
D. W. L	12.650 M
BEAM	4.000 M
DRAFT LOADED	1.05 M
DISPLACEMENT (LOADED)	23TONS (APPROX.)
MAXIMUM SPEED	24 KNOTS
SERVICE SPEED	20 KNOTS
FUEL TANKS	2000 LTRS.
WATER TANKS	500 LTRS.

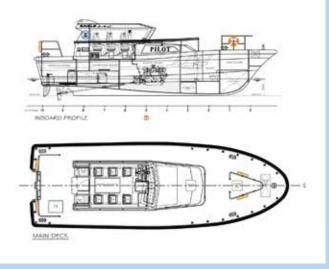
# SPECIFICATIONS

L. O. A	15.00 M
L. O. HULL	13.05 M
D. W. L	12.65 M
BEAM	5.10 M
DRAFT LOADED	1.15 M
DISPLACEMENT (LOADED)	25TONS (APPROX.)
MAXIMUM SPEED	24 KNOTS
SERVICE SPEED	20 KNOTS
FUEL TANKS	2500 LTRS.
WATER TANKS	300 LTRS.

PILOT



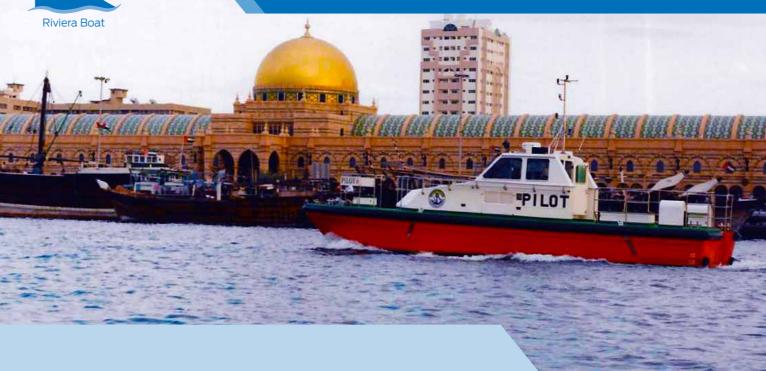




# **18M PILOT BOAT**

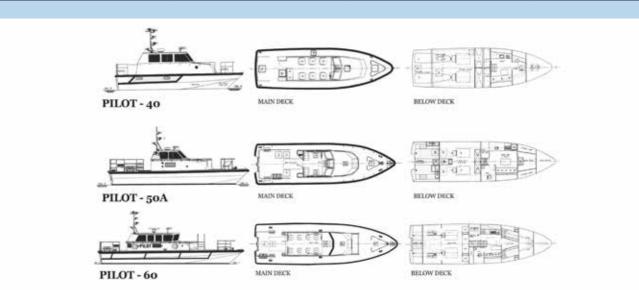
MURSHID PILOT

# **OTHER PILOT BOATS**



# **SPECIFICATIONS**

PARTICULARS	PILOT-40	PILOT-50	PILOT-60
L. O. A (M)	12	15	18
L. W. L (M)	10.1	13.05	15.9
BEAM (M)	3.14	4	4.9
DRAFT (M)	0.65	0.75	0.85
DISPLACEMENT (TONS)	8.5	20	30
RECOMMENDED POWER (HP)X 2	350	700	1000
SPEED (KNOTS)	UP TO 38	UP TO 35	UP TO 35
PROPULSION SYSTEM	FIXED PITCH /STERN DRIVE	FIXED PITCH	FIXED PITCH
FUEL TANKS CAPACITY (LTRS.)	600-1000	1500-2500	2000-3500
AIR CONDITIONING	OPTIONAL AVAILABILITY	AVAILABLE	AVAILABLE
BILGE SYSTEM	INDEPENDENT	SEA CHEST	SEA CHEST
CLASSIFICATION (OPTIONAL)	B.V, G.L, DNV	B.V, G.L, DNV	B.V, G.L, DNV



# **SPECIFICATIONS**

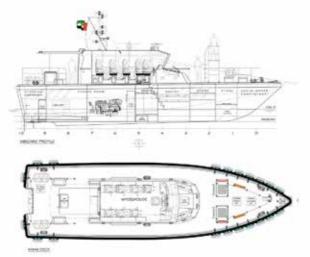
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Riviera Boat

L. O. A	18.00 M
L. W. L	16.00 M
BEAM	5.15 M
DRAFT	0.85 M
DISPLACEMENT (LOADED)	35TONS (APPROX.)
MAXIMUM SPEED	24 KNOTS
SERVICE SPEED	22 KNOTS
FUEL TANKS	4000 LTRS.
WATER TANKS	200 LTRS.







# 13.5M PILOT BOAT

# 9M SURVEY BOAT



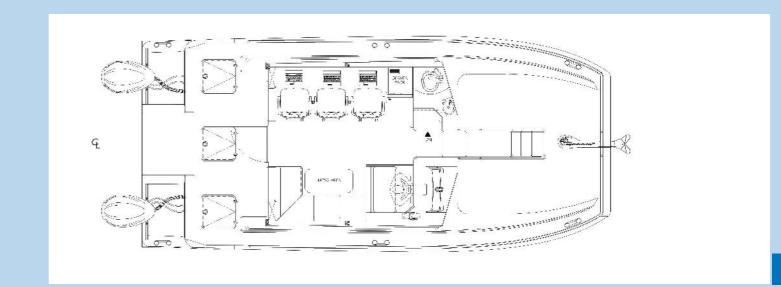
# **SPECIFICATIONS**

L. O. A	13.50 M
D. W. L	11.560 <b>M</b>
BEAM	4.050 <b>M</b>
DRAFT LIGHT	0.800 M
DISPLACEMENT (LOADED)	15 TONS (APPROX.)
MAXIMUM SPEED	24+ KNOTS
FUEL TANKS	1,500 LTRS.
WATER TANKS	300 LTRS.

L. O. A	9.00 M
BEAM	4.15 <b>M</b>
DRAFT LIGHT	0.52 M
DISPLACEMENT (LOADED)	5TONS (APPROX.)
MAXIMUM SPEED	23 KNOTS
FUEL TANKS	1,000 LTRS.
WATER TANKS	150 LTRS.









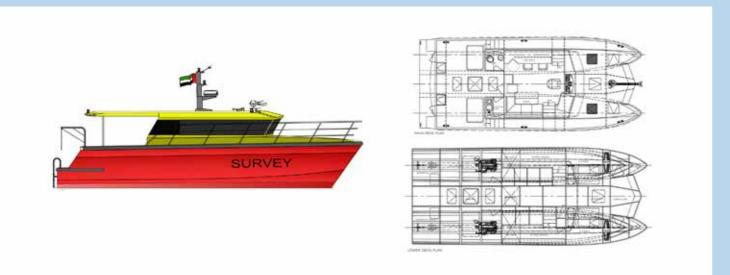


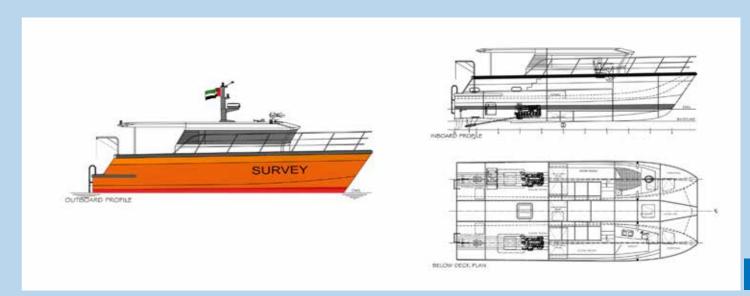
L. O. A	13.00 M
BEAM	5.62 M
DRAFT LIGHT @ PROP. TIP	1.20 M
DISPLACEMENT (LOADED)	15TONS (APPROX.)
MAXIMUM SPEED	17 KNOTS (@ FULL LOAD CONDITION)
FUEL TANKS	2,000 LTRS.
WATER TANKS	300 LTRS.

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13M CATAMARAN

**SURVEY BOAT V2** 





SURVEY



# **20M CATAMARAN**

# **SURVEY BOAT**



# **45FT DHOW**



# **SPECIFICATIONS**

L. O. A	20.000 M
L. W. L	19.13 M
BEAM	7.000 M
DRAFT MOULDED	0.85 M
DISPLACEMENT (LOADED)	35TONS (APPROX.)
MAXIMUM SPEED	20+ KNOTS
FUEL TANKS	4000 LTRS.
WATER TANKS	500 LTRS.

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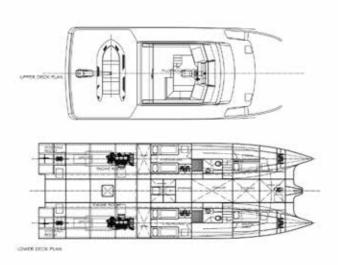


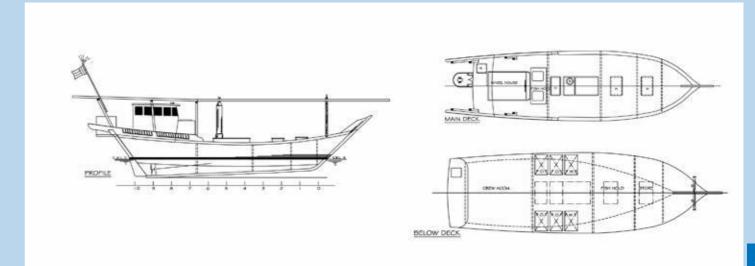
L. O. A (M)	15.5
L. W. L (M)	10.32
BEAM (M)	4
DRAFT (M)	1.2
DISPLACEMENT (TONS)	18
RECOMMENDED POWER (HP) X 1	150
SPEED (KNOTS)	UPTO 12
PROPULSION SYSTEM	FIXED PITCH
STEERING SYSTEM	MANUAL
FUEL TANK CAPACITY (LTRS)	3000
AIR CONDITIONING	OPTIONAL AVAILABILITY
FISH HOLD CAPACITY (M3)	16
ELECTRICAL SYSTEM AC	220V-240V

**SPECIFICATIONS** 

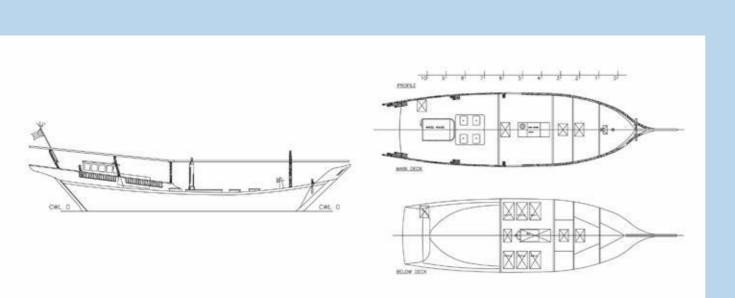










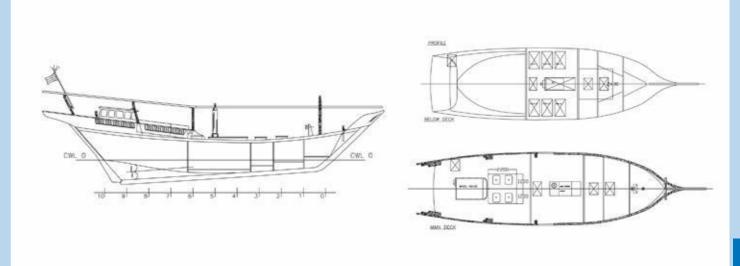




L. O. A (M)	23.6
L. W. L (M)	15
BEAM (M)	5.9
DRAFT (M)	2
DISPLACEMENT (TONS)	35
RECOMMENDED POWER (HP) X 1	400
SPEED (KNOTS)	UPTO 14
PROPULSION SYSTEM	FIXED PITCH
STEERING SYSTEM	MANUAL
FUEL TANK CAPACITY (LTRS)	4000
AIR CONDITIONING	OPTIONAL AVAILABILITY
BILGE SYSTEM	SEA CHEST
FISH HOLD CAPACITY (M3)	35



**65FT DHOW** 



# **75FT DHOW**



18.5

6.4

2.3

500

UPTO 14

MANUAL

**SEA CHEST** 

220V-240V

5000

90

FIXED PITCH

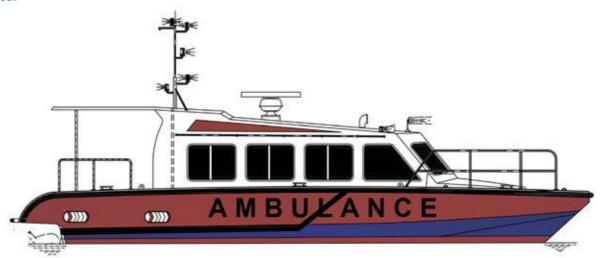
**OPTIONAL AVAILABILITY** 

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# 



# 12M AMBULANCE BOAT INBOARD ENGINES

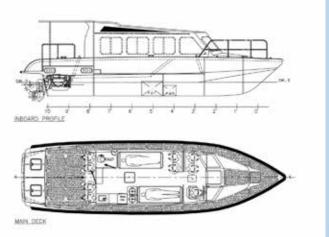


### **SPECIFICATIONS**

L. O. A (M)	12.40
BEAM (M)	3.14
DEPTH (M)	1.70
DRAFT (M)	0.75

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L. W. L (M)

BEAM (M)

DRAFT (M)

SPEED (KNOTS)

**DISPLACEMENT (TONS)** 

PROPULSION SYSTEM

FUEL TANK CAPACITY (LTRS)

FISH HOLD CAPACITY (M3)

**ELECTRICAL SYSTEM AC** 

STEERING SYSTEM

AIR CONDITIONING

**BILGE SYSTEM** 

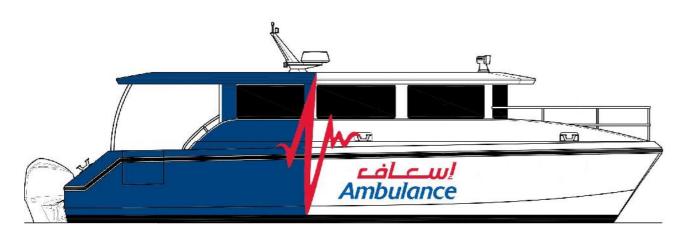
RECOMMENDED POWER (HP) X1



# 12M AMBULANCE CATAMARAN BOAT



# 16M AMBULANCE CATAMARAN BOAT





# **SPECIFICATIONS**

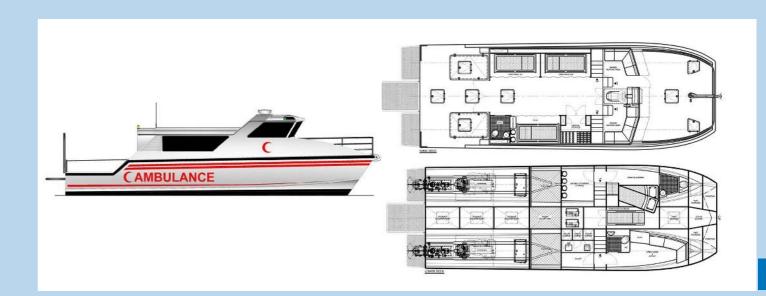
L. O. A (M)	12.00 L.
W. L (M)	10.06
BEAM (M)	4.14
DEPTH (M)	1.70
DRAFT (M)	0.58

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# **SPECIFICATIONS**

L.O.A (WITH PLATFORM) (M)	16.00
LENGTH OF HULL (M)	15.00
W. L (M)	13.73
BEAM O. A (M)	5.40
DRAFT (M)	0.68











# **SPECIFICATIONS**

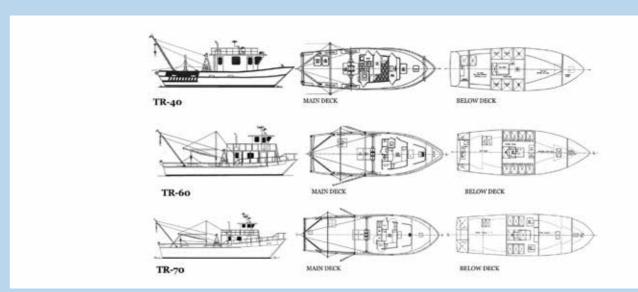
**MOORING BOATS** 

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PARTICULARS	MOOR-40	MOOR-50	MOOR-62
L. O. A (M)	12	15.2	19
L. W. L (M)	10.1	13.15	16.6
BEAM (M)	3.14	4	4.9
DRAFT (M)	0.65	0.85	0.95
DISPLACEMENT (TONS)	9.5	22	35
RECOMMENDED POWER (HP)X 2	350	700	1000
SPEED (KNOTS)	UP TO 33	UP TO 33	UP TO 35
PROPULSION SYSTEM	STERN DRIVE/FIXED PITCH	FIXED PITCH	FIXED PITCH
FUEL TANKS CAPACITY (LTRS.)	600-1000	1500-2500	2000-3500
AIR CONDITIONING	OPTIONAL AVAILABILITY	AVAILABLE	AVAILABLE
BILGE SYSTEM	INDEPENDENT	SEA CHEST	SEA CHEST
CLASSIFICATION (OPTIONAL)	B.V,G.L, DNV	B.V,G.L, DNV	B.V,G.L, DNV

MOOR-40	MAIN DECK	SELOW DECX
MOOR-50	MAIN DECK	BILLOW DECK
MOOR-62	MAIN DECK	NULLOW DECX

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AVAILABILITY
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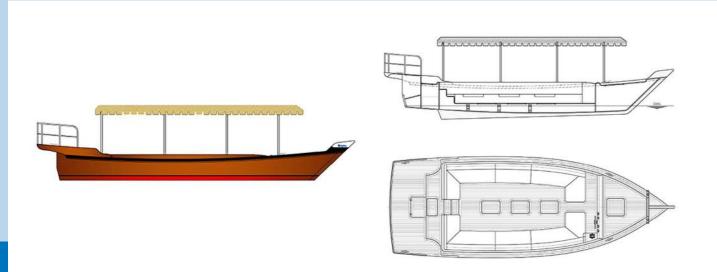


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DESIGN DRAFT

0.60 M







L.O.A

L. W. L

BEAM (MLD)

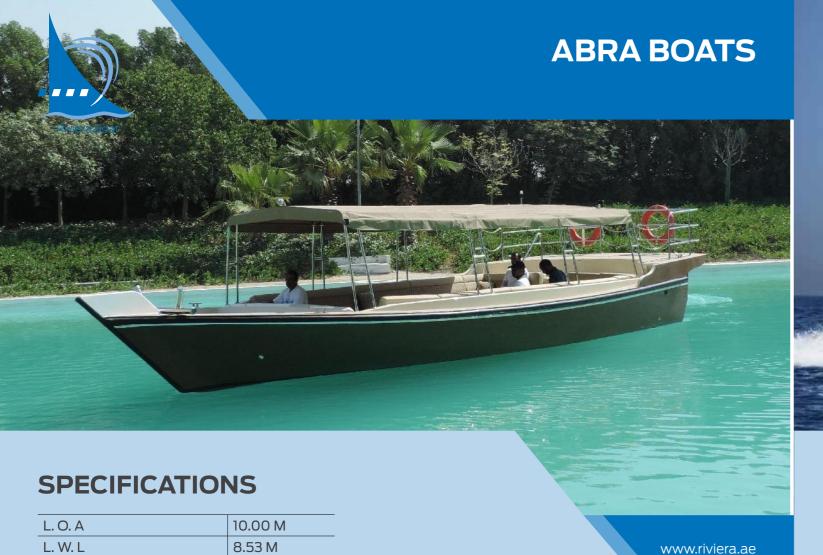
DESIGN DRAFT

10.00 M

8.53 M

3.84 M

0.60 M



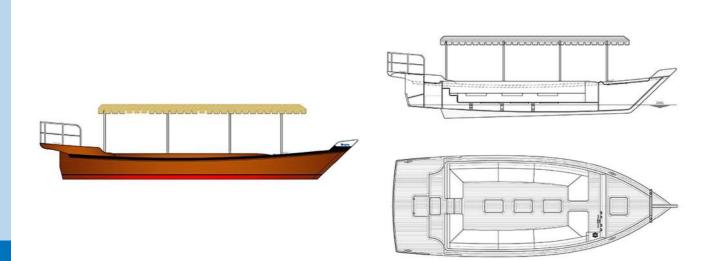


# 20M SUPPORT FISHING BOAT



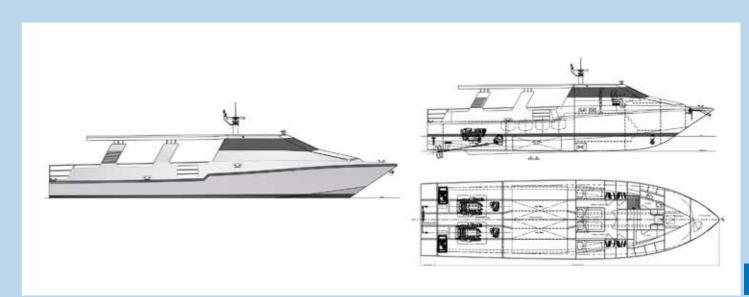
	T
L. O. A	20.75 M
L. W. L	17.71 M
BEAM (MOULDED)	5.50 M
DISPLACEMENT	50.00 TONS (APPROX.)
MAXIMUM SPEED	32 KNOTS @ HALF LOAD CONDITION
FUEL TANKS	10,000 LTRS.
WATER TANKS	800 LTRS.
BAIT HOLD CAPACITY	6,184 LTRS. TOTAL

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3.84 M

0.60 M



BEAM (MLD)
DESIGN DRAFT

# **RESTAURANT BOAT**

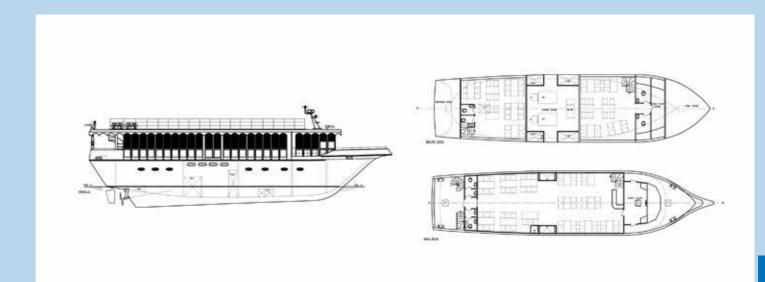


# **SPECIFICATIONS**

L. O. A (M)	27.80
L. W. L (M)	21.00
BEAM (M)	6.54
DEPTH (M)	3.40
DRAFT – AT MIDSHIP (LIGHT) (M)	1.75
DRAFT – AT MIDSHIP (LOADED)(M)	1.90

27.80		
21.00		www.riviera.ae

	Siller manufacture and story
	HIBOND MODEL
OUTBOARD PROFILE	
	BELOW DECK



**SPECIFICATIONS** 

23.30 M 18.60 M

6.40 M

12 KNOTS

30.00 TONS (APPROX.)

L.O.A

L. W. L

BEAM (MOULDED)

DISPLACEMENT

**MAXIMUM SPEED** 



L. W. L 21.00 M

BEAM (MOULDED) 6.20 M

DISPLACEMENT 90.00 TONS (APPROX.)

**MAXIMUM SPEED** 

12 KNOTS

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L. W. L (M)

BEAM (M)

DEPTH (M)

DRAFT - AT MIDSHIP (LOADED)(M)

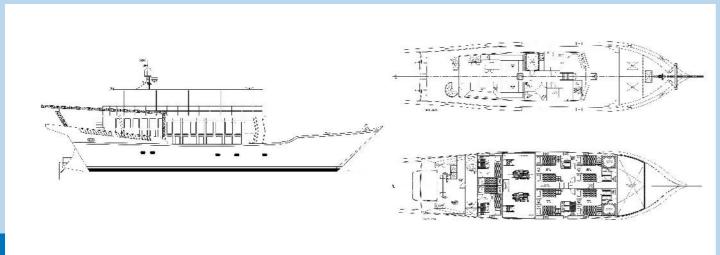


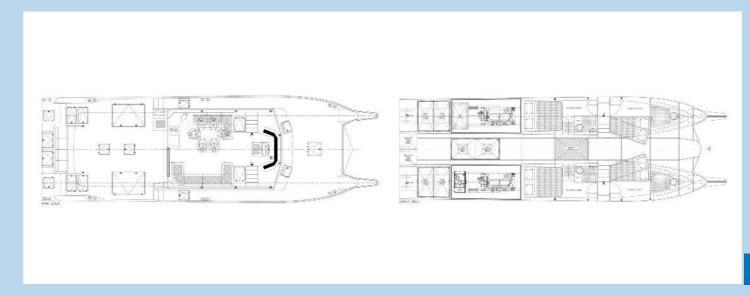
13.73

5.42

3.40

1.40





### **Material Evaluation for Small Crafts**

(Especially Pilot Boats and Fast Patrol Boats of length less than 25 m and a displacement below 35 ft.)

Wish evaluation considers only the suitability of mild steel, alluminium alloy and GRP as hull material for pilot boats and small fast patrol boats operating in the Arabic Gulf and adjacent waters.

**Strength:** Although steen has about double tensile and shear strength than normal GRP structures this advantage of steel can't be exploited due to the fact, that for blister resistance of steel panels the thickness of steel plates have to be about 3-4 mm taking into account also a rust increase of thickness as corrosion reserve. AL is in the strength values at about the same level as GRP. As far as structural strength is concerned the respective hull materials are equally suitable.

**Weight:** For crafts upto 20 m length the hull weight of GRP structures is considerably less than steel structures and again similar to AL.

Corrosion: Significant advantages of GRP: GRP has no electrochemical corrosion with adjacent metallic material. Steel has to be carefully protected against rust (more regular maintenance). As far as hull maintenance is concerned many positive points in favour of GRP.

**Repair:** The envisaged materials are easy to be repaired. Welding of steel and AL is without any problem, while requirement for machinery such as welding machines is necessary to carry out the repairs as well as qualified personnel to perform welding and denting. GRP repair can be carried out by any GRP manufacturer, as well as training of the maintenance crew of the boat to carry out such repairs with custom tool without requirement for specialised machinery is quite easy solution for the GRP repair.

Impact and fire Resistance: In this aspect the high elasticity and deformation properties of steel in case of heavy collision have to be considered as an advantage, on the other hand the GRP structures withstands less severe collision and impacts without any damage while for the same impact steel structures are deformed. As far as fire hazard is concerned Steel vessels have advantages but this advantage cannot be seriously considered specially when considering the very small probability

of such an event taking place, this fact is reflected clearly in considerable numbers of small fire fighting vessels have been built recently in GRP in different parts of the worlds proving that fire hazard is not a problem for GRP vessels.

Building Costs: As far as cost aspects are concerned

					Contract Service and Contract of Contract	1.0	
Fig. 48 Compara	tive imp	act resi	stance	- 10-50	ght of CSM g/m²	5000	Τ
	Thick-	Weight	Impact energy	-	kness mm	1-3	_
Material	ness mm	g:m²	4	280	ght of CSM g/m² kness mm	1-6	
18 s.w.g. mild steel	1-3	9800	No damage	Wei	ght	1035	Т
14 s.w.g. aluminium	2.0	5400	Small dent	com	parison	1-0	_
Asbestos cement sheet	6-3	10700	Fractured	bremereu			
Hardboard	3.2	3400	No damage	No damag slight marking	ge Fractured		
FRP.							
2 layers - 2:1 450 g. m²	1-9	2700	No damage	No damag	e Slight crazing	Slight crazing	
2 layers -3:1 600 g/m²	3-6	4900	Slight crazing	crazing	crazing	General	

building of GRP craft up to 20m length is the most economical material as soon as a series production of the vessels hull is possible.

**Performance:** The steel and GRP crafts are equally suitable in performance wise, on the other hand when considering the weight savings of GRP boats in comparison to mild steel have also some other very favourable side effects for the operation of the boat.

• Less weight means less power demand for the same speed.

A pilot boat of the same dimensions and same performance needs about 25% less power to reach 30km and that means that instead of 2 x 850 Kw, 2 x 600 Kw are sufficient to operate the boat above 30 Kn.

Since the engines are of less power they are far lighter, the whole impact on the system is really snow balling.

- Lighter boat needs less power.
- Less power means lighter engines
- Lighter engines need less fuel.
- · Less fuel saves costs and weight

Finally one has more reserves in cost, maintenance and operation time.

**Conclusion:** All materials are suitable with advantages for GRP as far as durability, maintenance, handling, weight and costs are concerned. For the local conditions in the Arabic Gulf and adjacent waters all aspects favour GRP due to the following reasons.

- Maintenance and repair are easier to be conducted due to local manufacturers
- $\bullet \quad$  Price of GRP boats is better than those of mild steel.
- Local supplier can be within few hours at the operators site.
- Boats are of proven design.
- A high number of pilot boats of GRP are being run in different ports in the region successfully.

	Steel	Aluminium	Chopped strand mat laminate			
			25% glass 3/1	33% glass 2/1	50% glass 1/1	
Modulus GN/m²	210	68	612	8-3	(12/4)	
Weight of CSM g/m² Thickness mm	0.8	1-1	2.5	1050	4650 2	
Weight of CSM g/m². Thickness mm	1-0	1-4	3-2-	1350	2000	
Weight of CSM g/m <sup>2</sup> Thickness mm	1-3	1.8	13500 4010	3:70	(2500- 313)	
Weight of CSM g/m² Thickness mm	1-6	2-3	61200 5120	4:250 4:20	412	
Weight comparison	1-0	0.5	0 67	0:65	0166	



### **CERTIFICATIONS**







**BSCIC ISO 14001** 

BSCIC OHSAS 18001





TUV ISO 9001: 2015

SHOP APPROVAL



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