



MARINE TRADES CHALLENGE 2017

School Information Pack



Welcome



Welcome to the 15th annual Marine Trades Challenge (MTC), brought to you by the NZ Marine and Composites ITO. In this event you will build and race a catamaran (defined as a vessel with two hulls side by side). This booklet contains information you will need to take part in this event. All participants should read this booklet thoroughly as there have been changes made to the event.

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Previous overall winners



Overview for Team Managers

It is the Team Managers' responsibility to ensure that every team member is aware of the MTC rules and their implementation.

Design

- Teams will use the "MTC One Design" for their boat (pg 10).
- You will receive A3 plans upon payment of entry.

Bridge-Deck

- Your team will be supplied with a MTC bridge-deck component.
- The bridge-deck structure will have to bolt to bulkheads at a set measurement fore and aft (this measurement will be provided as part of the rules).

Materials Supplied

- Refer to Materials list (pg 9).

You will need to bring, at a minimum

- Paddles or oars. These may be store bought.
- Putty knives
- Tape
- Saw horses, and hazard boards.
- Methylated spirits, cloths, and rubbish bags



What happens on the day?

8 April 2017

8.00am	Site open for team set up
9.00am	Welcome and teams briefing
9.30am	Makita toolkit briefing
9.45am	Judges briefing
10.00am	Start of boat building category
1.00pm	Finish of boat building category
1.15pm	Detailing of boat and site clean
1.45pm	Yamaha teams briefing (On-water category)
2.15 - 3.20pm	On-water event
3.20pm	Return lifejackets
3.30pm	Promotional photos
3.30 - 4.00pm	Break-down of gazebos/clean site - end of event
4.00 - 5.00pm	Prizegiving/Makita tools auction - results on site.

**Subject to change*

Where to go

The event will take place at NZ Marine's office located at:

85 Westhaven Drive, Westhaven, Auckland

There will be parking provided for all teams entered in the Marine Trades Challenge.



Team Checklist

Team Notes

Do you have a build plan with roles assigned?	
Do you have a timeline for the day?	
How will you track that your build is going to plan and is on time?	
Do you have access to saw horses and/or portable work tables so you can work at height?	
Do you have access to quick action clamps?	
What size screws and beads of sealant will you use? Which surfaces will need sealant?	
Can a team member tie a bowline, and set up the sail, and rigging?	
Do you have at least 2 sailors on your team?	
Do you have at least 2 team members able to start and steer a 2hp engine?	
Allow time in the 3 hours of build time to rig the boat.	

If you have any questions, give us a call for assistance.



Categories

Team Presentation/Support	20%	Maximum Points 20
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Gazebo presentation
Uniforms/costumes
Team support

Worksite Safety/Cleanliness	15%	Maximum Points 15
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Safe working practices
Health and safety obligations met
Cleanliness of work area
Cleanliness of products/tools
Safety on the water

Best Built Boat	30%	Maximum Points 30
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Quality of finished boat
Accuracy against plan
Built within time limit

On the Water Performance	30%	Maximum Points 30
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Position finished
Seamanship
Sportsmanship

100%	Maximum Points 100
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Note: The categories and points are definitive; other information is for your assistance.



Rules - Boat Build

The following rules are subject to change. All teams will be notified should this occur.

- 1.** All team members must attend the Makita tool kit briefing **and** the Yamaha Outboard briefing.
- 2.** Back-up **battery drills only** are permitted. Our sponsors are Makita, so please endeavour to use Makita tools at the event.
- 3.** The boat has been designed to carry two crew members and will be **paddled, sailed, and powered by 2h.p outboard.**
- 4.** Boat hulls and bulkheads must be built from materials provided (pg 9).
- 5.** Schools must supply their own hand tools (pg 12)
- 6.** Each team will be provided with a battery powered Makita drill.
- 7.** Each team is to consist of six students. Multiple schools may combine to form a team.
- 8.** North Sails have provided identical sails. They are to be fastened/controlled with the cordage provided. These sails are gennakers and are 3m x 3m x 3m.
- 9.** Southern Spars have supplied identical 3m carbon fibre spars with halyard sheave and cleat attached. These masts are 63mm O.D. and 56mm I.D.
- 10.** Saw horses and/or portable work tables are permitted.
- 11.** After 3 hours tools must be packed away. No further construction will be allowed. You will have 45 minutes of clean up time for the vessel and your site. **This event will place a strong emphasis on worksite safety and cleanliness.**
- 12.** With the officer of the day's permission, teams will be allowed to complete their vessel to a stage that they can compete in the on-water event. **This will impact on your Best Boat Build category points (pg 7).**
- 13.** The vessels are to remain in the construction area for judging and public viewing until contestants are advised of the commencement of the On Water event.
- 14.** Sponsorship signage will be a logo strip (approx 100mm wide) which must be displayed on the outer topsides of the vessel. Teams are encouraged to use graphics or vinyl wraps on the hull to identify/promote their team and company.
- 15.** Teams are personally responsible for their own tools, clothing and equipment. **Teams are responsible for the removal of their vessel after the event.**

Rules - On the Water

1. Approved life jackets are supplied to each team and these must be worn during the On Water event.
2. This event involves paddling, outboard motors, and sailing. Teams must be confident in the water.
3. All efforts will be made to provide a downwind sailing leg. This is dependent on the weather conditions. Further instructions will be issued at the On Water briefing.
4. All craft must have a 4 metre tow-line fastened through the top of the stem and be accessible in an emergency.
5. The bailer must be attached to the craft with a 1 metre lanyard which is provided.
6. Paddles or oars may be of any type. These do not have to be built by the team.
7. The outboards will have the float and cordage attached. Further outboard instructions will be given at the On Water briefing.
8. All rigging knots will be inspected. The best knot to use is a Bowline.
9. Vessels on the paddling leg will give way to vessels under sail. Outboard powered vessels will give way to paddling and sailing vessels.



Materials List

Plywood - Pre cut to plan

3 Sheets 6mm x 2440mm x 1220mm
1/2 Sheet 9mm x 2440mm x 1220mm

Timber

9 @ 3.6m 20mm x 20mm
1 @ 3.6m 45mm x 20mm
2 @ 1.0m 45mm x 20mm
2 @ 2.0m 45mm x 45mm

Adhesive

3 tubes Sealant

Cordage

Of which 4 metres must be tow rope

Bailer

Must be fastened to vessel with 1 metre lanyard

Note

It is only through industry support that this event can be held. Teams are asked to respect the tools, outboards, masts, rope, and sails provided. It is not appropriate for sponsors to see their products mis-handled or mis-used.

Fastenings

300 @ 20mm square drive screws, (#2)
25 @ 50mm square drive screws, (#2)
Bulk head bolts

Sail

1 North Sails Gennaker 3m x 3m

Outboard

1 2 hp Yamaha with float attached

Mast

3m Southern Spars - Carbon Fibre (with sheave and cleat incl.) 63 mm O.D.

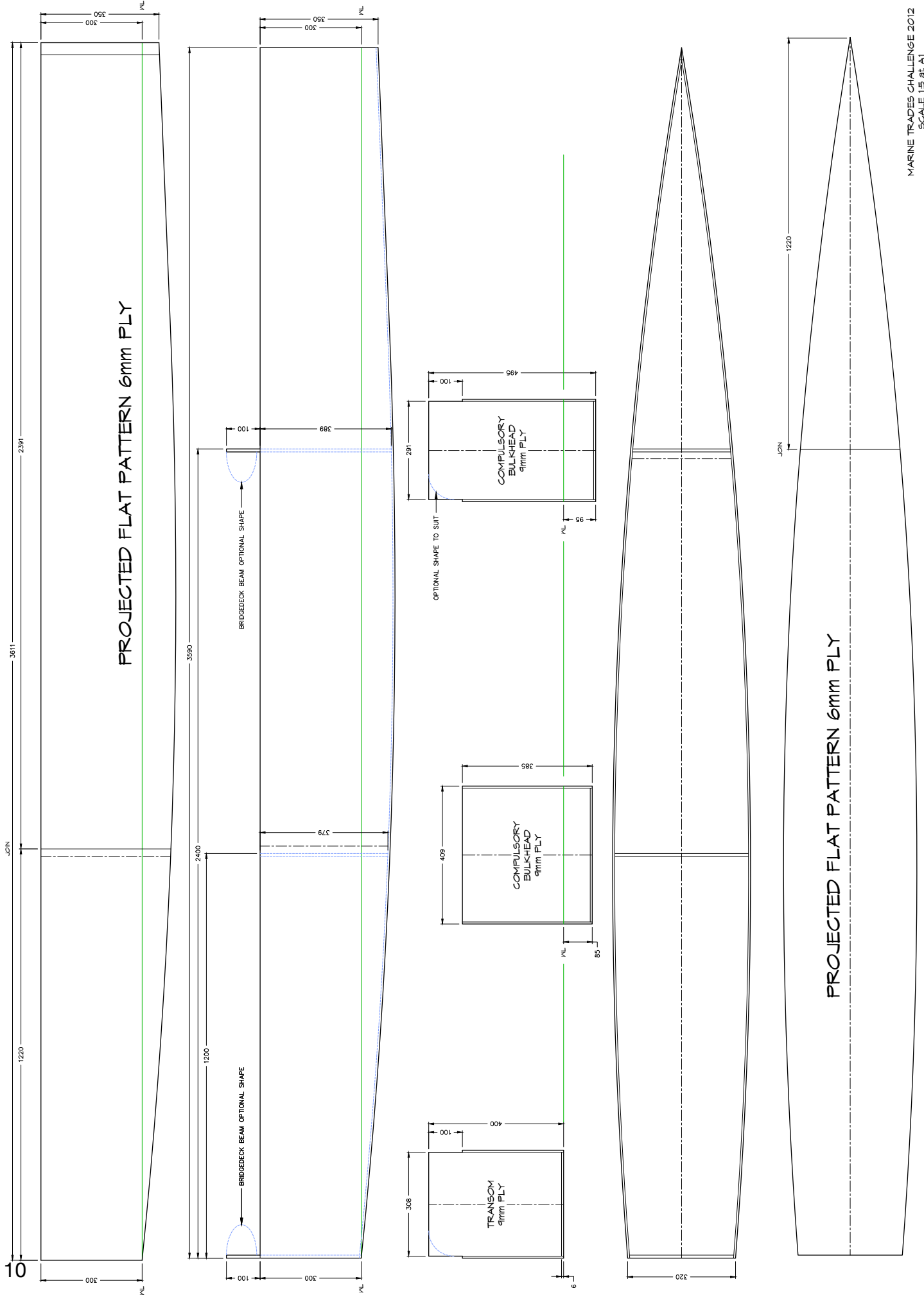
Component

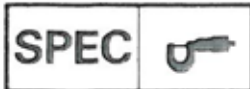
1 For teams using supplied component (this includes fastenings)



Supplied component

MTC One Design Plan





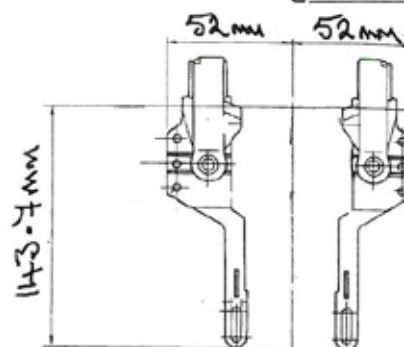
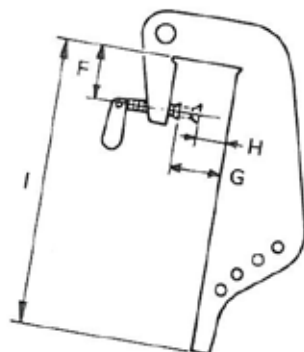
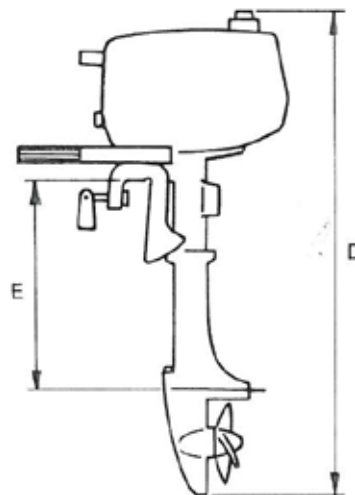
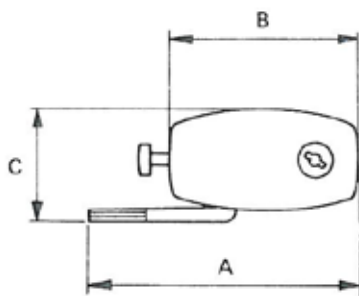
SPECIFICATIONS



YAMAHA

4 DIMENSION YAMAHA 2CMHS

Item	Unit	Model
		2C
A	mm (in)	605 (23.82)
B	mm (in)	360 (14.17)
C	mm (in)	185 (7.28)
D	S mm (in)	920 (36.22)
	L mm (in)	—
E	S mm (in)	381 (15.0)
	L mm (in)	—
F	mm (in)	35 (1.4)
G	mm (in)	60 (2.4)
H	mm (in)	14 (0.55)
I	mm (in)	145 (5.7)



Makita tool kits

Thanks to the continued support of Makita we would like to present:



The Boatbuilders' Tool Pack*

- BDF454RFE** **18 Volt Cordless Drill/Driver**
- BJV180Z** **18 Volt Cordless Jig saw**
- BGA452Z** **18 Volt 115mm Cordless Angle Grinder**
- BTD140Z** **18 Volt Cordless Impact Driver**

- 2 Lithium ion batteries with charger**

- 1 Wheeled Tool Case**

*Subject to change

These Boatbuilders' tool kits are a Marine Trades Challenge special. These cannot be bought as a standard option in retail stores.

These tool kits will be auctioned at the event. To buy these tools individually will cost you approximately \$1800. For further information on Makita please visit www.makita.co.nz

Previous Winners of the Secondary Schools Division

- 2011** **Glenfield College**
- 2012** **Mercury Bay Area School**
- 2013** **Tamatea High School**
- 2015** **Auckland Grammar School**
- 2016** **Auckland Grammar School**

