



MARINE TRADES CHALLENGE 2017

Team Information Pack



8 April 2017

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.

Page

2	Overview for Team Managers
4	What happens on the day?
5	Where to go?
6	Team checklist
7	Categories
8	Rules - Power Play & Boat Build
9	Rules - On Water
10	Rules - Company Designed Boats
11	Rules - Component
12	Materials list
13	MTC One Design
14	Yamaha motor specs
15	Makita tool kits
16	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

Option 1 - MTC One Design

- Teams may design their own vessel or use the MTC One Design. On your entry form you must indicate your preference.
- Teams building the **MTC One Design** will be supplied with plans and Mylar templates upon payment of entry. This design is compatible with either a team built or MTC supplied bridge-deck component.

Option 2 - Design your Own Boat

- If your team is designing your own boat, you must supply a copy of the design plans to be cleared by your Field Officer by the 31st March 2017.

Construction

- Vessels must be constructed from the 3 sheets of 6mm ply and the ½ sheet of 9mm ply. The transom and main bulkhead must be made from the 9mm ply.
- Teams may use cardboard or Mylar templates to assist construction.

Bridge-Deck Component

Option 1 - MTC Supplied bridge-deck component

- Teams may use a MTC supplied bridge-deck component.
- This will impact on your *Innovation/Development* category points (pg 7)

Option 2 - Team built bridge-deck component

- The team built bridge-deck component will need to be pre-built before the challenge.
- The team built bridge-deck can be any width and be built of any material.
- No part of the bridge-deck can provide buoyancy that affects the displacement of the vessel.
- The bridge-deck can have the mast step and outboard mount integrated as part of the structure.
- The bridge-deck component will have to bolt to bulkheads at a set measurement fore and aft. This measurement will be provided. (pg 11)

Materials Supplied

- Refer to Materials List (pg 12).

You will need to bring, at a minimum

- Team built bridge-deck component (if indicated on entry form).
- Paddles or oars. These may be store bought.
- Putty knives, tape, methylated spirits, cloths, rubbish bags, saw horses, and hazard boards.

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 tool kit 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 Outboard 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	Prize giving/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**

Parking:

There will be limited parking provided for all teams.



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 your Field Officer a call for assistance.



Categories

Team Presentation/Support	10%	Maximum Points 10
----------------------------------	------------	--------------------------

Gazebo presentation
Uniforms/costumes
Team support

Innovation/Development	15%	Maximum Points 15
-------------------------------	------------	--------------------------

Components rule (pre-build)
All innovations during build

Worksite Safety/Cleanliness	15%	Maximum Points 15
------------------------------------	------------	--------------------------

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
------------------------	------------	--------------------------

Quality of finished boat
Accuracy against plan
Built within time limit

On Water Performance	30%	Maximum Points 30
-----------------------------	------------	--------------------------

Position finished
Seamanship
Sportsmanship

100%	Maximum Points 100
-------------	---------------------------

Note: The categories and points are definitive; other information is for your assistance. The 'innovation' judges will spend a small amount of time with each team so that your developments can be discussed.

Rules - Power Play (New Rule)

Team Managers will have the option of the **Power Play**. This allows the Team Manager to be involved in a hands on capacity for **one hour**.

This may be either the **first hour** or **third hour**.



Team Managers will be required to:

- Register their power play hour choice **before build time commences** with the officer of the day.
- Wear "Hi-Vis" vests supplied during their power play hour .
- Display the "Power Play" card on the marquee during their power play hour.

At all other times during the build Team Managers will be **hands off all materials and tools**.

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 before the event begins **and** the Yamaha Outboard briefing prior to the on-water event.
- 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 12).
- 5.** Component Rules must be complied with (pg 11).
- 6.** Teams must supply their own hand tools (pg 12)
- 7.** Each team will be provided with a selection of 18volt Lithium, battery powered Makita tools (pg 15).
- 8.** Each team is to consist of three people. **Two of the team must be NZ Marine and Composites Industry Training Organisation apprentices**. Multiple companies may combine to form a team.
- 9.** 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.
- 10.** 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.
- 11.** Saw horses and/or portable work tables are permitted.

- 12.** 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.**
- 13.** 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).**
- 14.** 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.
- 15.** 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.
- 16.** 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 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.



Rules - Company designed boats

This is optional for teams. Teams can choose the MTC One Design Plan (pg 13)

1. Materials for the build will be supplied by the MTC (pg 12).
2. Apart from your bridge-deck component (pg 11), **your design must be built from the supplied materials.**
3. Templates or building patterns (**Mylar, cardboard, or paper only**) are allowed.
4. The vessel must be able to carry two crew members and be sailed, paddled, and capable of being powered by a 2h.p. outboard **safely.**
5. The vessel must meet all **Boat Build** and **On Water Rules** (pg 8,9).
6. The bridge-deck component must conform to the **Bridge-Deck Component Rules.** (pg 11)
7. To ensure your design remains within the Rules please clarify any innovation/developments with your Field Officer **by the 31st March 2017.**
8. A **separate** set of identifiable plans must be presented to your Field Officer **by the 31st March 2017.**

All teams will compete in the same categories.

For planning purposes, teams must indicate if they are using **MTC One Design** or **Design your Own Boat** when entering.



Rules - Component

MTC recommends using a team built bridge-deck component rather than the MTC supplied bridge deck component. This is an opportunity to use innovative ideas.

The bridge-deck component:

- can not provide any buoyancy.
- must be built by **team members only** although total company input or ideas are encouraged.
- must be **custom made** i.e. not from existing moulds.
- must bolt through the transom and a bulkhead. The measurement between the two internal faces of these items is **2382mm**.
- may be built from **any material** and be **any width**.
- may have the mast step (mast section is 63mm O.D.) and outboard mount integrated.

Other:

- **All associated systems such as sail controls, rigging, and rowlocks must be made from the materials supplied by MTC (pg 12).**
- Craft must be able to float in 500 mm of water with crew aboard.
- The transom and bulkhead will be 9mm plywood. **Teams are to provide their own fastenings.**

It is the intention of the Component Rule to encourage innovation. This will allow more time for the building of the vessel on the day, and for teams to showcase their specialist skills. The judging for the Component is included in the **Innovation/Development** category (pg 7).



Materials List

Plywood

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

Fastenings

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

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)

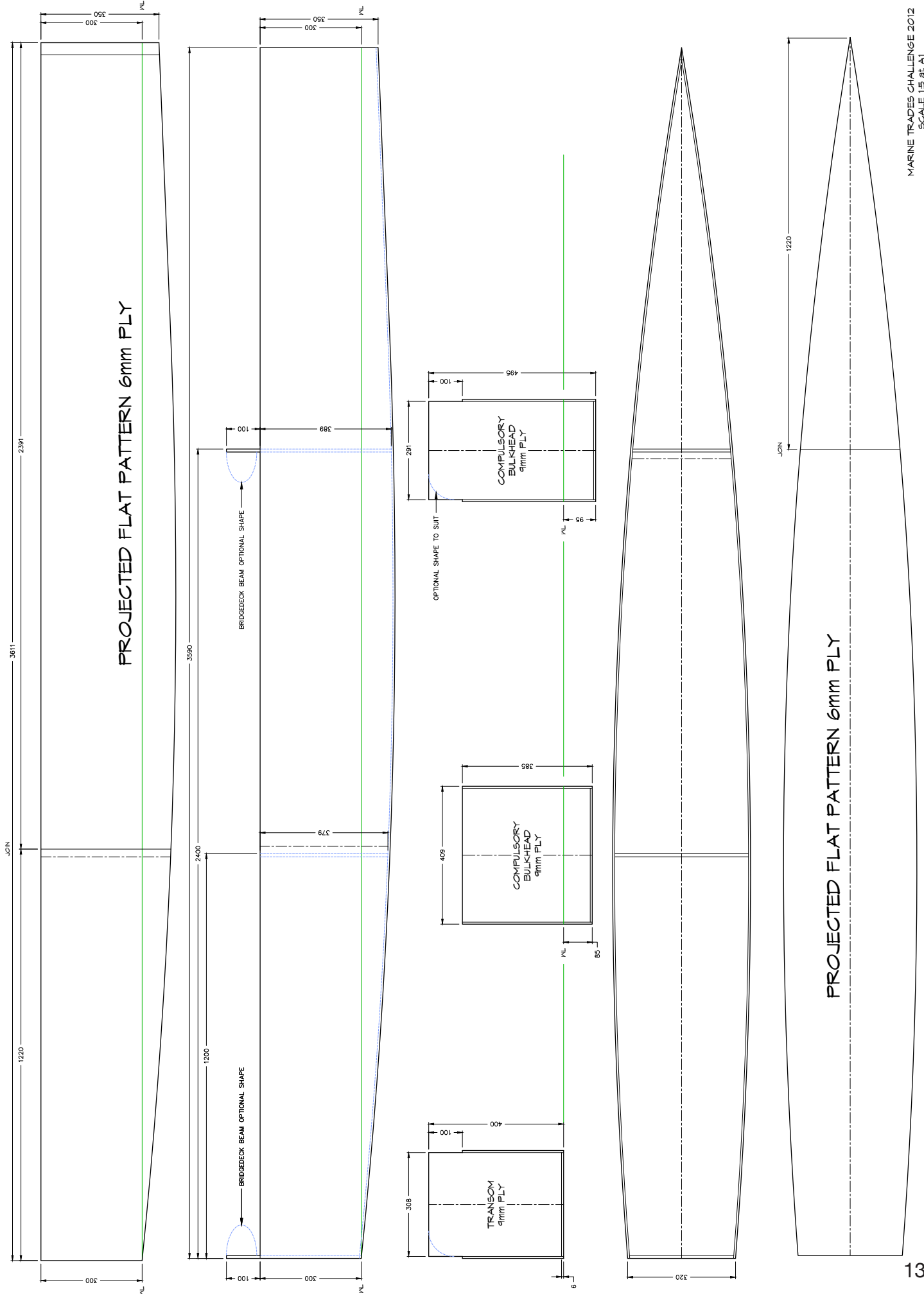
Note

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.



Supplied component

MTC One Design Plan





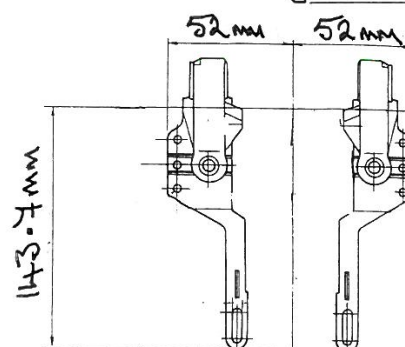
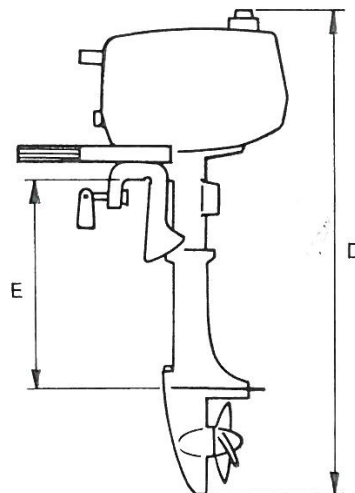
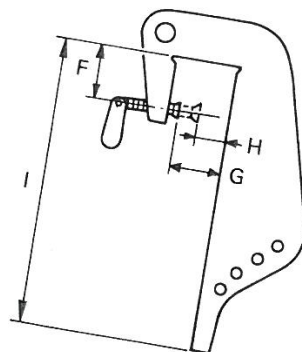
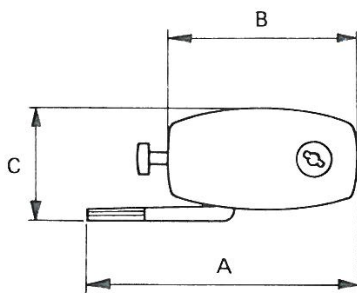
SPECIFICATIONS



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	920 (36.22)
	L	—
E	S	381 (15.0)
	L	—
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

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

**Subject to change*



Previous Overall Winners

2001	McMullen & Wing Ltd
2002	McMullen & Wing Ltd
2004	Yachting Developments
2005	Dickson Marine (Refits) Ltd
2006	Yachting Developments
2007	Sounds Marine Services/Franklins of Waikawa
2008	Cookson Boats Ltd
2009	Cookson Boats Ltd
2010	Yachting Developments
2011	Southern Ocean Marine Ltd
2012	C-Quip
2013	Alloy Yachts International
2015	Southern Spars Ltd
2016	Orakei Marine

