

RPYC
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RPYC POWER SEASON

*2024
TIME TRIALLERS
GUIDE*



ROYAL PERTH YACHT CLUB

RPYC Boating Department,
Rev2, February 2024



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- A grayscale background image of a harbor scene. In the foreground, a large, light-colored buoy with a logo on its top is floating in the water. In the background, several sailboats are visible on the water, and a line of trees and buildings is visible on the shore under a cloudy sky.

TIME TRIALLING CALENDAR 2024



MAY

CPYA HEAT #1

25

SOPYC

JUNE

CPYA HEAT #2 | LLOYD ANDERSON

09

CYC

JUNE

CPYA HEAT #3 | SEAFARER

22

RPYC

JULY

CPYA HEAT #4

13

RFBYC

JULY

CPYA HEAT #5 | TITU

27

SOPYC

AUG

CPYA HEAT #6

10

RPYC

AUG

CPYA HEAT #7 | KYLIE CUP

25

RFBYC

SEPT

CPYA HEAT #8

07

CYC



DATE	EVENT TITLE	COURSE	LOCATION	START TIME
25/05/2024	CPYA State Heat 1		SoPYC	
09/06/2024	CPYA State Heat 2 & Lloyd Anderson		CYC	
22/06/2024	CPYA State Heat 3 & Seafarer Invitational		RPYC	
13/07/2024	CPYA State Heat 4		RFBYC	
27/07/2024	CPYA State Heat 5 & Ti Tu Invitational		SoPYC	
10/08/2024	CPYA State Heat 6		RPYC	
25/08/2024	CPYA State Heat 7 & Kylie Cup Invitational		RFBYC	
07/09/2024	CPYA State Heat 8		CYC	

2024 CPYA FIXTURES



Time Trialling is a tactical sport: skippers put their boating skills to the test by following a designated course at a pre-determined speed.

Skippers and Navigators work together to calculate their boat's anticipated arrival time at each checkpoint mark on the course. Success is achieved with teamwork before boats even cross the start line.

The concept of powerboat time trialling is like a water-based version of car 'road rallies. The aim is to be the most precise around the course by using strategy and not speed to get the least number of point penalties.

Boats of all sizes, and crew of all skill-levels, can be successful in this friendly, yet competitive, sport. So go on, get out there!

WHAT IS TIME TRIALLING?

BENEFITS

There are a multitude of benefits to participating in time trialling with RPYC, including:

- Better understanding of your boat's performance
- Increased confidence in your own boating skills
- Expanded knowledge of local cruising waters
- Sharpened navigation skills
- Maintenance benefits by keeping your boat in service during the Winter months
- Opportunities for increasing social interactions with other RPYC Members and Members from other Clubs
- Opportunities to learn more about, and visit, other Clubs along the Swan River
- Time Trial events are often followed by a function at the hosting Club with great food and great company!
- PLUS, you may bring home a trophy or two!



GETTING STARTED

1

CHOOSING A SPEED

Step one is determining what speed you need to do. Best to have a complete RPM speed curve which is limited from 5-15knots. Choose a comfortable speed for you, the speed that you normally use for cruising is best. During the course you will need to decrease and increase your speed to compensate for turns, the tide, or the wind. A key point to keep in mind is that you will need to choose a speed with room to decrease and increase speed, that does not significantly alter the altitude of your boat. If you have a planing hull, you need to select a speed which is a couple knots above the speed which the boat planes.

2

RUNNING THE MILE

Your local chart will show the measured nautical mile course in your vicinity. The course end points will usually be identified by a set of markers or some other fixed object, such as a breakwater or pier. The best time to run the mile is in the morning before the course becomes congested with other boats and the winds kick up a chop. Set your throttle(s) carefully and run the course noted on the chart in both directions without stopping or changing your RPM. Use a stopwatch to measure the exact time it takes you to travel the mile in each direction. The times you record for each direction will probably be different due to wind and current that might be present. Times for multiple runs in the same direction should be nearly the same.

3

CALCULATING AVERAGE SPEED

You will now want to determine the average speed of your boat in seconds per nautical mile (sec./nm). To do this, first convert the times you recorded for each direction into seconds (example: 4 minutes and 25 seconds = 265 seconds). Now, add the times from each direction and divide by two to determine the average speed in seconds per nautical mile (example: $265 + 281$ divided by $2 = 273$ sec./nm). Divide the number of seconds into 1 nautical mile (6075 ft) in this case $6075/273 = 22.25$ ft per second. Look up the chart in the Time Trialling Rules and the closest are $21.96 = 13$ knots and $22.8 = 13.5$ knots.

It is possible to do the same by running between any two marks on the course where the distance is known. For example: Applecross Spit and Deepwater spit are 449 metres apart and at 15 knots it takes 59 seconds = 7.62 m/sec.

4

PLOTTING THE COURSE

The next step is to plot the contest course. The contest instructions will list the start, intermediate marks, and finish points as well as the side to which they are to be left. Once you have identified these points on your chart, draw the course lines interconnecting them. Now note the heading for each leg.

5

LEG TIMES

The issued course sheets show the cumulative times for each mark. The leg time can be calculated by subtracting these times. Remember that each leg is from mark to mark and does not include the time taken to turn after reaching the mark therefore compensation must be made by increasing the speed for the next leg. Below is an example of turn times at a constant speed. You should of course calculate your own.

<u>Turn Angle</u>	<u>Time Taken</u>
0 to 60 degrees	0 seconds
60 to 90 degrees	5 seconds
90 to 110 degrees	10 seconds
110 to 125 degrees	15 seconds
125 to 140 degrees	20 seconds
140 to 150 degrees	25 seconds
150 to 165 degrees	30 seconds

GETTING STARTED

ESSENTIAL EQUIPMENT

LEG TIMES

The major piece of equipment needed for this sport is a reliable and accurate clock or timing device since you are competing to see how close you can get to the exact time you nominated for completion of each stage of the course. Competitors typically use a main clock, in addition to some sort of backup clock, as well as stop watches. We are now seeing some Apps that have been created to assist with the recording of time trialling results.

STOP WATCH

A stop watch is very handy for timing practice runs between marks and also for the measured mile.

BACKUP CLOCK

Anything can go wrong with a clock during an event and stories abound of them being dropped, batteries falling out, and clocks simply malfunctioning. You can minimise the impact of these unplanned mishaps by carrying a back up clock or watch pre-set to the correct time.

RADIO

Carrying either a fitted radio, or handheld radio, is essential for time trialling. Race management will advise the frequency to use on the day.

NOTEPAD AND PENCIL

For manual calculations, bring a notepad and have spare pencils sharpened.

PFD'S

A requirements of RPYC is for all participating vessels to have sufficient PFD's on board for all crew incase of an emergency.

WATER, SNACKS, SUNGLASSES, HAT & SUNSCREEN

Although the Time Trialling session is estimated to only take an hour, we encourage all RPYC competitors to be SunSmart, and have ample water and snacks.

RULES, TIPS, ETC.

HERE ARE SOME OF THE KEY RULES TO BE AWARE OF WHEN TIME TRIALLING!

PASSING A MARK TO THE WRONG SIDE

If a mark is passed on the wrong side, you may continue on with your cruise but your boat will incur a 10 point penalty.

TRUE COURSE

A true course is the shortest distance between two marks, remember to sail a true course, if you do not, it may result in you receiving penalties.

RETIREMENT

If you are unable to finish, and need to retire, please inform the start personally on the selected channel. You cannot retire when another vessel is approaching the finish line,

INTERFERENCE

If you have to slow down to give another vessel right-of-way near a mark, fly your protest flag as soon as possible, when you finish notify the start or RO.

RULES OF THE ROAD

Time trialling and the yellow competition flag do not give you any extra rights on the river. Remember you must still obey the 'rules of the road'. You must pass vessels on the correct side and you must give way as required by the rules of regular on water activity.

COUNTING DOWN

When you reach a mark the skipper calls "NOW", you then enter the time on your running sheet as seconds early or late or zero. You can then add the total points at the end of the event. This enables you to check with the actual result given on the official score sheet which is displayed after the Results are announced. On short legs, you may want to count up instead of down.



**CPYA FULL
RULE BOOK
HERE**

RULES, TIPS, ETC.

CHANGING SPEED

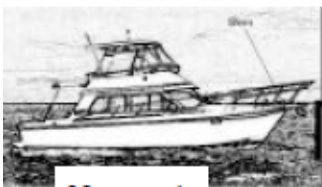
Most penalties result from Speed Changes. When you change your speed, 3 points are added to your score. Speed Changes can be easily detected by RO's.

SPEED RESTRICTIONS

There are some speed restrictions on the river and therefore in our courses. These are generally 8 knot areas and they are marked on the course instructions at the mark at which the speed restriction finishes. Heathcote 8KT means there is an 8 knot limit from SoPYC Start Line, the mark prior to Heathcote, to Heathcote.

THE MARKING SYSTEM

Around the course there are check point recorders who mark the time you pass the mark. They are equipped with a clock, which has been set against the master clock, and a tape recorder. One of the recorders counts the time from the clock as you approach the mark, one calls when you pass the mark and the other records the time on a sheet. Your time is recorded when the stem of the boat reaches the mark. Technically it is the last second called before the stem reaches the mark (see illustration below where the time would be 39 seconds not 40). Competitors gain a point for each second early or late at the mark. These points are cumulative and do not cancel each other out. The object is to score as few points as possible. There have been a few zero points lost. Tapes are replayed when the starting team notice any large discrepancy.



RULES, TIPS, ETC.

TIME TO NEXT MARK

To calculate this you simply subtract the ETA from the previous mark from the ETA from the current mark.

CHART MARKING

If you draw your course to leave the marks on the actual side they are to be left you can then colour them in red and green to make it easier to see at a glance whether they are to be left to port or starboard. You can then calculate the bearings to each check point and enter the bearings on the running sheet. Having a bearing to the check point makes it less likely to head for the wrong mark.

SETTING THE CLOCK

Set your clocks against the CPYA OFFICIAL TIME Clock on Sportspage and reset if necessary. Check for notices, your start time and the course number.

**OFFICIAL
CPYA TIME
CLOCK**



CHECKING THE CALL

Prior to the event the skipper and the navigator should get together.

The navigator should call a practice time with the skipper looking over the shoulder so that the skipper is aware of exactly how the navigator is calling their time. Skippers watch to see if the call is before, on or after the second.

COURSE AND MARKS REFERENCES

PT = Port

STB = Starboard

CA-PT = Close Abeam Port

CAS-TB = Close Abeam Starboard











ST(20M) = Leave at least 20metres between you and the mark on your starboard sides.

TRANSIT= Transit (an imaginary line between two fixed marks)



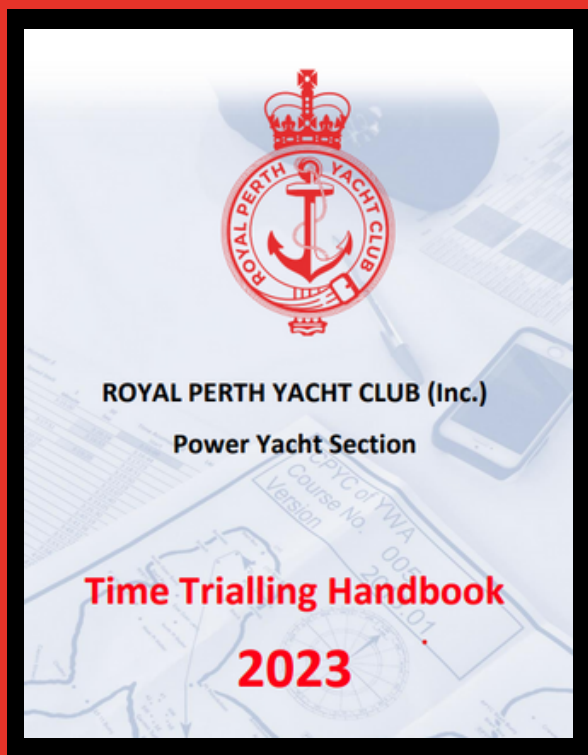
**LOCAL
PERTH TIME
CLOCK**

FLAGS TO FAMILIARISE

FLAG	MEANING
	Class Flag not less than 300mm by 200mm flown below Club burgee during competition. Raised during starting sequence at the start.
	Line In Use - Raised on the start line to indicate line in use. Lowered after last boat starts.
	"P" - Preparatory signal: "The class designated by the warning signal will start in 5 minutes."
	"B" - Protest signal when flown means "I intend to lodge a protest."
	"L" flown ashore means "A notice to competitors has been posted." When flown afloat means "come within hail" or "Follow me."
	Answering Pennant - Postponement signal <ul style="list-style-type: none"> • Alone means all events not started are postponed • Over 1 ball or shape means racing is postponed for 15 minutes • Over numeral pennant means postponed that number of hours • Over class flag means postponed until a later date
	"N" Abandonment signal "The event is abandoned." Over the first substitute means "The event is cancelled"
	First Substitute—When flown under "N" means "The event is cancelled"
	"Y" Life jackets - means "Life jackets should be worn by all competitors."
	"M" Mark Signal means "Round or pass the object displaying this signal instead of the mark it replaces."

RPYC 2023 HANDBOOK

An essential download for all competitors is our 2023 Time Trialling Handbook, which you can directly download from the RPYC Website or simply scan the QR code below.



**DOWNLOAD
HANDBOOK
HERE**



This handbook is updated yearly for the upcoming season, and covers all essential information about time trialling at Royal Perth Yacht Club, including conduct, scoring, change of ownership, handicaps and insurance.

We recommend competitors keep either a printed copy on their vessel or an easily accessible downloaded copy.

REGISTRATION

As an RPYC Member all you need to do is scan the QR code to register. There is no cost in registering. You then have an option as to which Races you choose to participate in.

Races need to be individually entered into, this is organised by the hosting Club and opens closer to each heat.



***2024 RPYC
REGISTRATION
LINK***

CPYA WEBSITE

Scan this QR Code to go straight to the CPYA website to access the NOR, SI's and Handbook. Most of this information is also in this handbook.



CPYA WEBSITE



KEY HOW-TO'S

ADDITIONAL RESOURCES



**RPYC WEBSITE TIME
TRIALLING PAGE**



**TIME TRIALLING
RESULTS ON
SPORTSPAGE**



**TIME TRIALLING
EXPLANATORY VIDEO
(FROM SOPYC)**



**CHECK POINT
EXPLANATORY VIDEO**



KEY CONTACTS



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Speed Range 1: 5 – 9 Knots

Royal Perth Yacht Club

Course No 122

Mark	Round	Max Speed	Dist.	5 Knots	6 Knots	7 Knots	8 Knots	9 Knots
RPYC TT Outer Start Buoy	Port		0.0	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
Inner Dolphin Spit (16)	Starboard	8	854.7	00:05:32	00:04:37	00:03:57	00:03:28	00:03:28
Nedlands Spit (26)	Starboard		1363.1	00:08:50	00:07:22	00:06:19	00:05:31	00:05:17
PFSYC Outer Start Buoy 32A	Starboard		3252.4	00:21:04	00:17:34	00:15:03	00:13:10	00:12:06
Tawarri Spit (32)	Starboard	8	3625.6	00:23:30	00:19:35	00:16:47	00:14:41	00:13:36
Armstrong Spit (36)	Starboard	8	3789.7	00:24:33	00:20:28	00:17:32	00:15:21	00:14:16
Pt Resolution Spit	Starboard		5398.7	00:34:59	00:29:09	00:24:59	00:21:52	00:20:04
Black Spit (54)	CA Port		6575.6	00:42:36	00:35:30	00:30:26	00:26:38	00:24:18
Cornish Spit	Port	8	6750.1	00:43:44	00:36:27	00:31:14	00:27:20	00:25:00
Claremont Spit (56)	Port	8	6980.0	00:45:14	00:37:41	00:32:18	00:28:16	00:25:56
Karrakatta Spit	Port	8	7183.2	00:46:33	00:38:47	00:33:15	00:29:05	00:26:45
Burnside Spit (58)	Port	8	7544.2	00:48:53	00:40:44	00:34:55	00:30:33	00:28:13
Scotch Spit (57)	Port	8	7847.3	00:50:51	00:42:22	00:36:19	00:31:47	00:29:27
Middle Spit (55)	CA Port	8	8304.8	00:53:49	00:44:51	00:38:26	00:33:38	00:31:18
Lucky Spit (51)	Port		11033.0	01:11:29	00:59:34	00:51:04	00:44:41	00:41:07
Deepwater Spit (37)	Port		13486.9	01:27:23	01:12:49	01:02:25	00:54:37	00:49:57
Foam Spit (18)	Port		15360.7	01:39:32	01:22:56	01:11:06	01:02:12	00:56:42
Concrete Spit (15)	CA Starboard		16162.2	01:44:43	01:27:16	01:14:48	01:05:27	00:59:35
Knot Spit (14)	Starboard	8	16580.8	01:47:26	01:29:32	01:16:44	01:07:09	01:01:17
Quarry Spit (1)	Port	8	18126.6	01:57:27	01:37:53	01:23:54	01:13:24	01:07:32
Crawley Buoy	Port	8	19688.7	02:07:34	01:46:19	01:31:07	01:19:44	01:13:52
RPYC TT Outer Start Buoy	Port	8	19974.8	02:09:26	01:47:51	01:32:27	01:20:53	01:15:01

Last updated 09/05/2023

Speed Range 2: 10 – 15 Knots

Royal Perth Yacht Club

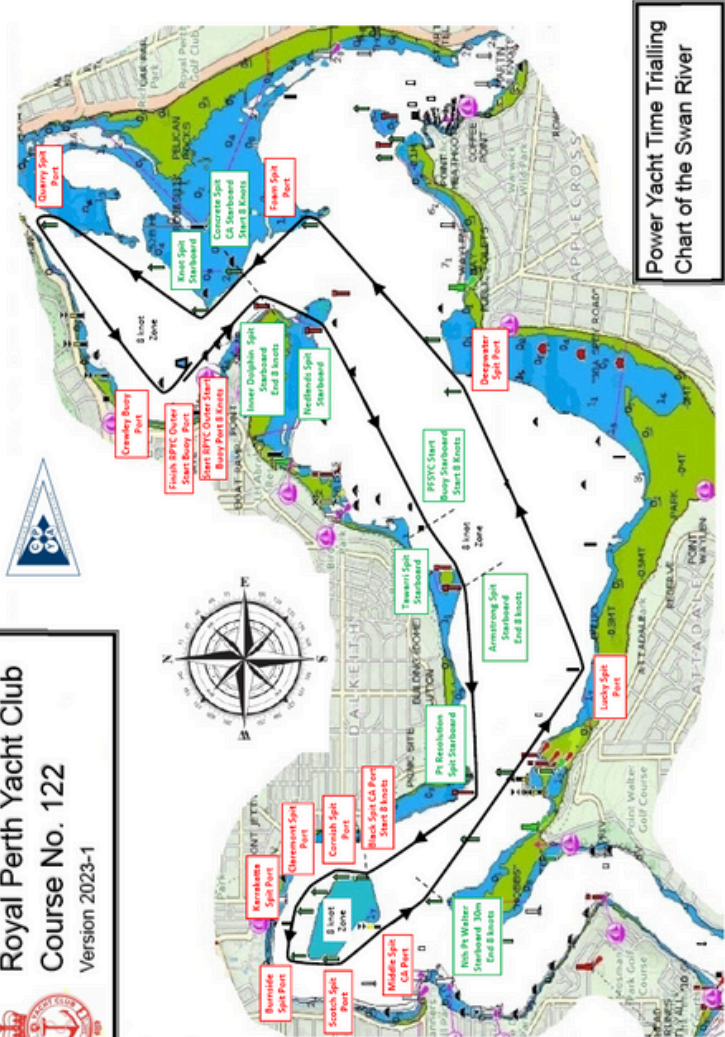
Course No 122

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Inner Dolphin Spit (16)	Starboard	8	854.7	00:03:28	00:03:28	00:03:28	00:03:28	00:03:28	00:03:28
Nedlands Spit (26)	Starboard		1363.1	00:05:07	00:04:58	00:04:50	00:04:44	00:04:38	00:04:34
PFSYC Outer Start Buoy 32A	Starboard		3252.4	00:11:14	00:10:31	00:09:56	00:09:26	00:09:01	00:08:38
Tawarri Spit (32)	Starboard	8	3625.6	00:12:44	00:12:02	00:11:27	00:10:57	00:10:31	00:10:09
Armstrong Spit (36)	Starboard	8	3789.7	00:13:24	00:12:42	00:12:07	00:11:37	00:11:11	00:10:49
Pt Resolution Spit	Starboard		5398.7	00:18:37	00:17:26	00:16:27	00:15:37	00:14:55	00:14:17
Black Spit (54)	CA Port		6575.6	00:22:26	00:20:54	00:19:38	00:18:33	00:17:38	00:16:50
Cornish Spit	Port	8	6750.1	00:23:08	00:21:37	00:20:20	00:19:16	00:18:20	00:17:32
Claremont Spit (56)	Port	8	6980.0	00:24:04	00:22:32	00:21:16	00:20:12	00:19:16	00:18:28
Karrakatta Spit	Port	8	7183.2	00:24:53	00:23:22	00:22:06	00:21:01	00:20:06	00:19:18
Burnside Spit (58)	Port	8	7544.2	00:26:21	00:24:50	00:23:33	00:22:29	00:21:33	00:20:45
Scotch Spit (57)	Port	8	7847.3	00:27:35	00:26:03	00:24:47	00:23:42	00:22:47	00:21:59
Middle Spit (55)	CA Port	8	8304.8	00:29:26	00:27:54	00:26:38	00:25:33	00:24:38	00:23:50
Lucky Spit (51)	Port		11033.0	00:38:16	00:35:57	00:34:00	00:32:21	00:30:57	00:29:44
Deepwater Spit (37)	Port		13486.9	00:46:13	00:43:10	00:40:37	00:38:28	00:36:38	00:35:02
Foam Spit (18)	Port		15360.7	00:52:18	00:48:41	00:45:41	00:43:09	00:40:58	00:39:05
Concrete Spit (15)	CA Starboard		16162.2	00:54:53	00:51:03	00:47:51	00:45:08	00:42:49	00:40:48
Knot Spit (14)	Starboard	8	16580.8	00:56:35	00:52:45	00:49:33	00:46:50	00:44:31	00:42:30
Quarry Spit (1)	Port	8	18126.6	01:02:51	00:59:00	00:55:48	00:53:06	00:50:46	00:48:46
Crawley Buoy	Port	8	19688.7	01:09:10	01:05:20	01:02:08	00:59:25	00:57:06	00:55:05
RPYC TT Outer Start Buoy	Port	8	19974.8	01:10:20	01:06:29	01:03:17	01:00:35	00:58:15	00:56:15

Last updated 09/05/2023

EXAMPLE COURSES


Royal Perth Yacht Club
Course No. 122
Version 2023-1



Power Yacht Time Trialling
Chart of the Swan River

ROYAL PERTH YACHT CLUB

2024 CPYA TIME TRIAL SEASON HEAT #3



ROYAL PERTH YACHT CLUB | CRAWLEY

SEAFARER TIME TRIAL

SAVE THE DATE SATURDAY 22ND OF JUNE 2024



ROYAL PERTH YACHT CLUB



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ROYAL PERTH
YACHT CLUB

