

ROYAL PERTH YACHT CLUB



# Time Triallers Guide

2023 RPYC Guide to Time Trialling

RPYC Boating Department,  
Rev1, May 2023



# Time Triallers Guide


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ROYAL PERTH YACHT CLUB

# TIME TRIALLING CALENDAR 2023



DAY	DATE	RPYC HEATS	CPYA STATE HEATS	LOCATION
Saturday	27th May	#1	#1	SoPYC
Sunday	11th June	#2	#2	CYC - Lloyd Anderson
Saturday	24th June	#3	#3	RPYC - Seafarer
Saturday	15th July	#4	#4	RFBYC
Saturday	29th July	#5	#5	SoPYC - Ti Tu
Sunday	6th August	#6	-	PFSYC - Cork Evans
Saturday	12th August	#7	#6	RPYC
Sunday	27th August	#8	#7	RFBYC - Kylie Cup
Saturday	9th September	#9	#8	CYC



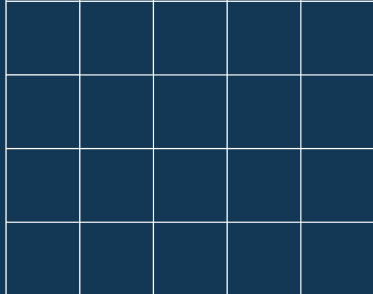
CPYA NOR, SI'S,  
Handbook



RPYC  
Registration Link

For more information  
email Jodi

[boatingadmin@rypc.com.au](mailto:boatingadmin@rypc.com.au)

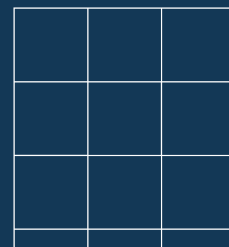


# 2023 CPYA Fixtures

DATE	EVENT TITLE	COURSE	START TIMES
27/05/2023	CPYA State Heat 1	6	14:00:00
11/06/2023	CPYA State Heat 2 & Lloyd Anderson	322	09:30:00
24/06/2023	CPYA State Heat 3 & Seafarer Invitational	122	14:00:00
15/07/2023	CPYA State Heat 4	8	14:00:00
29/07/2023	CPYA State Heat 5 & Ti Tu Invitational	412	14:00:00
12/08/2023	CPYA State Heat 6	9	14:00:00
27/08/2023	CPYA State Heat 7 & Kylie Cup Invitational	221	09:30:00
09/09/2023	CPYA State Heat 8	10	14:00:00

*Please note - PFSYC Invitational 'Cork Evans' is not included as a CPYA Heat but it is included as a Heat event for RPYC.*

*Cork Evans information coming soon...*





# What is Time Trialling?

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.

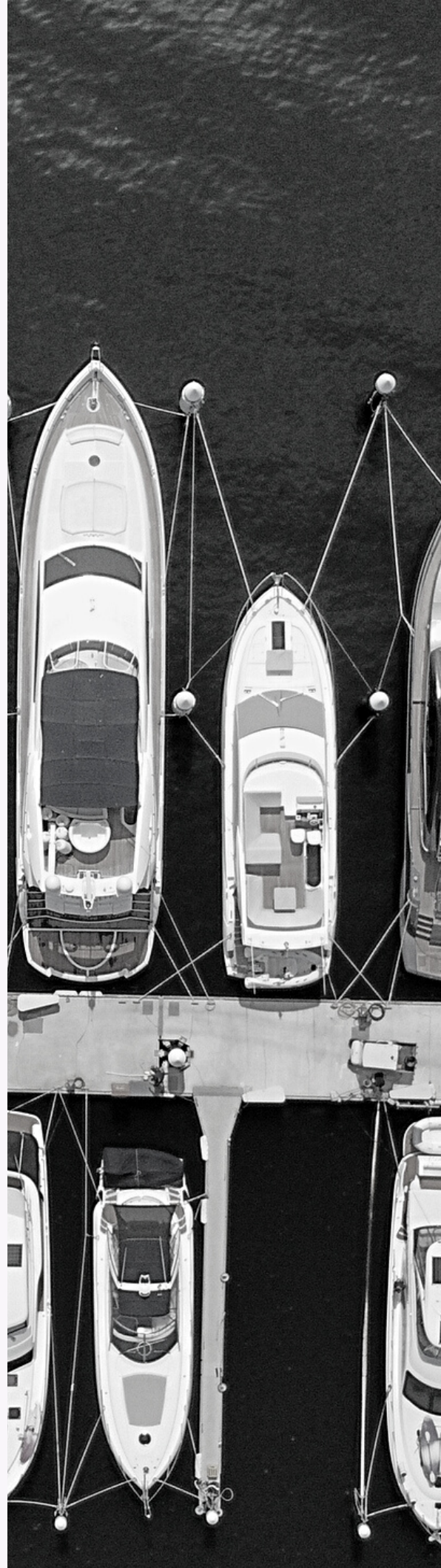
The concept of powerboat time trialling is like a water-based version of car 'road rallies.' The aim is to be the fastest around the course by using strategy, not speed.

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!

# 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


## STEP ONE

### 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.

## STEP TWO

### 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.





# Getting Started

pg.2

## STEP THREE

### 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.



## STEP FOUR

### 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.





# Getting Started

pg.3

## STEP FIVE

### 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

# Essential Equipment

## **Timing Device/s**

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 requirement 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 and 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.

pt. 1

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.

pt. 2

## 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.

## 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.

## 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.

pt.3

## Time to Next Mark

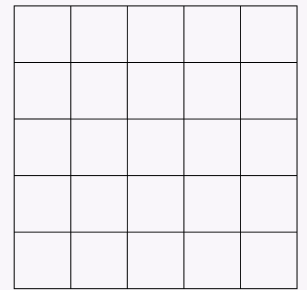
To calculate this you simply subtract the ETA from the previous mark from the ETA from the current mark.

## 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.



## 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)

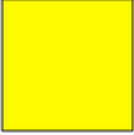



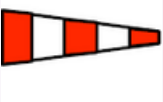



OFFICIAL CPYA TIME CLOCK



LOCAL PERTH TIME CLOCK

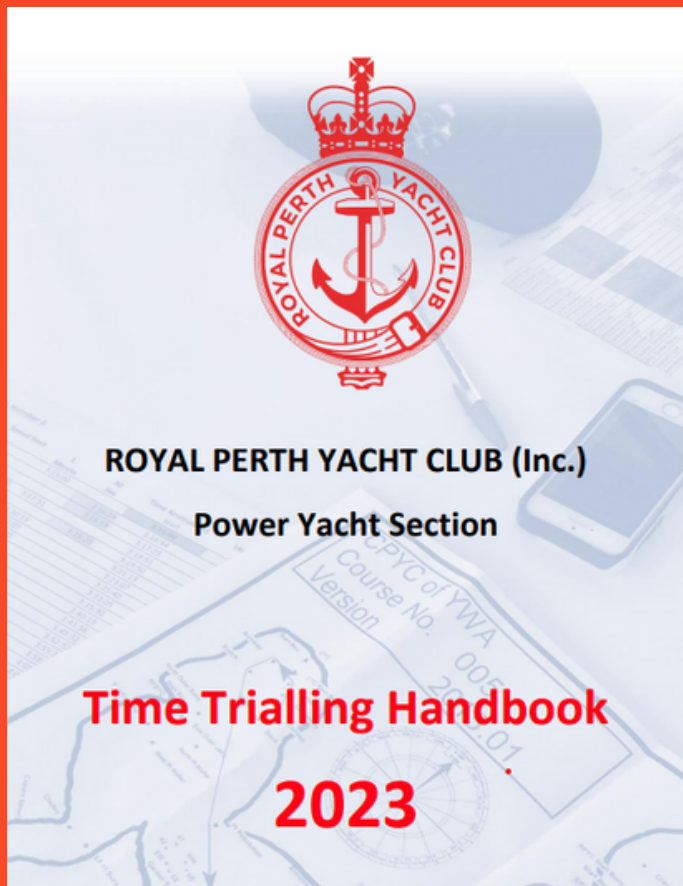


# Flags to Familiarise

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

# 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  
Here



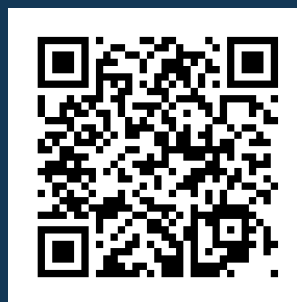
This handbook is updated yearly for the upcoming season, and covers all essential information about time trialling at Royal Perth Yacht Club, including conduct, scoring, change of ownership, handicaps and insurance.

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

# Key How-To's

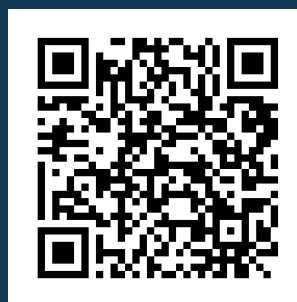
## Register

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.



## 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.

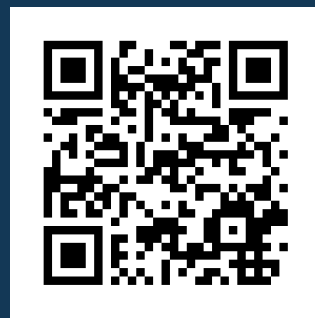




# Additional Resources



RPYC Website  
Time Trialling page



Time Trialling Results  
on Sportspage



Time Trialling  
Explanatory Video  
(Courtesy SoPYC)



Check Point  
Explanatory Video



# Key Contacts

**Travis Burtenshaw**

Boating Operations Manager

[boatingoperations@rpyc.com.au](mailto:boatingoperations@rpyc.com.au)

9389 1555

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**Jodi Daly**

Assistant Boating Operations Manager

[boatingadmin@rpyc.com.au](mailto:boatingadmin@rpyc.com.au)

9389 1555

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**Royal Freshwater Bay Yacht Club**

[power@rfbyc.asn.au](mailto:power@rfbyc.asn.au)

9286 8200

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**South of Perth Yacht Club**

[poweradmin@sopyc.com.au](mailto:poweradmin@sopyc.com.au)

9364 5844

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**Claremont Yacht Club**

[reception@claremontyachtclub.org.au](mailto:reception@claremontyachtclub.org.au)

9384 8226

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**Perth Flying Squadron Yacht Club**

[reception@pfsyc.com.au](mailto:reception@pfsyc.com.au)

9386 6437

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# Example Speed Charts pt. 1

## 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*

# Example Speed Charts **pt. 2**

## Speed Range 2: 10 – 15 Knots

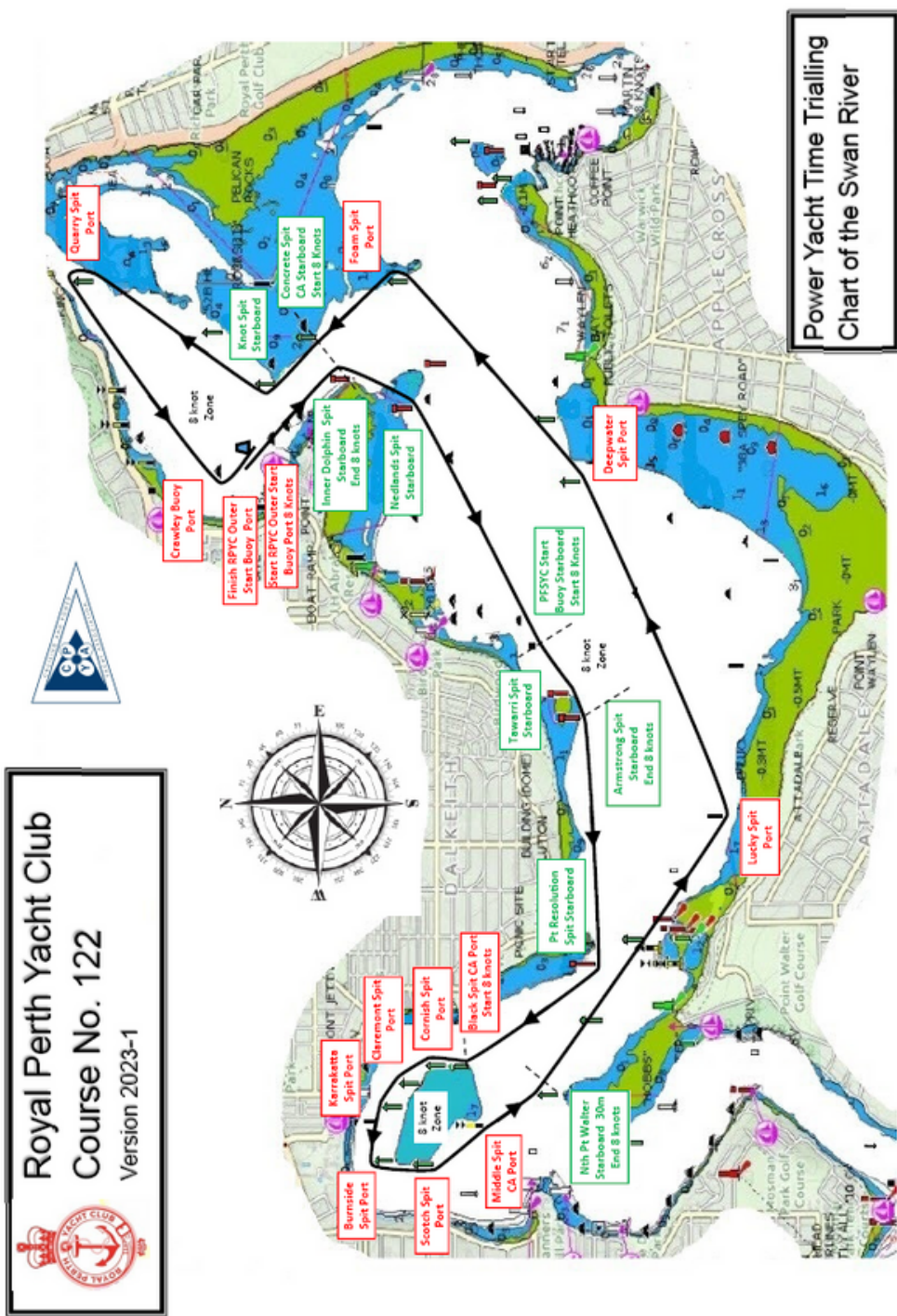
### Royal Perth Yacht Club

#### Course No 122

Mark	Round	Max Speed	Dist.	10 Knots	11 Knots	12 Knots	13 Knots	14 Knots	15 Knots
RPYC TT Outer Start Buoy	Port		0.0	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
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



# SEAFARER 2023 POWER TIME TRIALLING

TIME TRIAL & DINNER



## SAVE THE DATE

# SATURDAY 24TH JUNE

**This could be you!**  
(last years winner)





