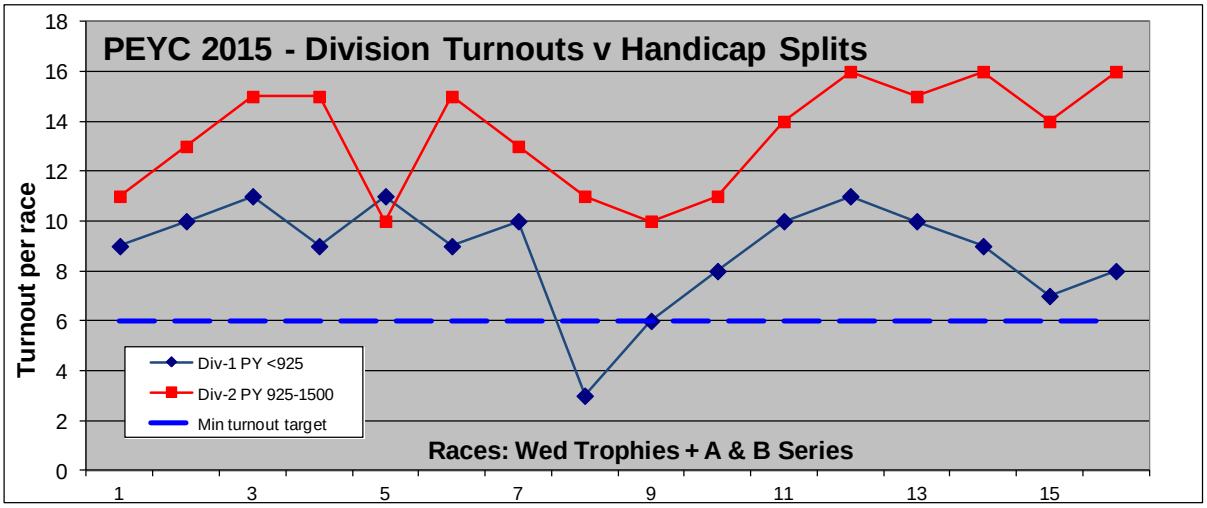
PEYC Yacht Divisions - Options for 2016

Introduction:

For 2016 it has been suggested that yacht racing should be in three divisions with smaller handicap ranges to promote closer racing that is less susceptible to 'dying' wind and strong tide conditions. In practice, this probably applies only to the Wednesday trophy races and the A & B series since the Easter & Sunday series attendances are too low. Turnout for these races in 2015 to the end of the B-series has been analysed on a 'what if' basis.

Option A: Two Divisions with 924/925 Handicap Split (Current situation):

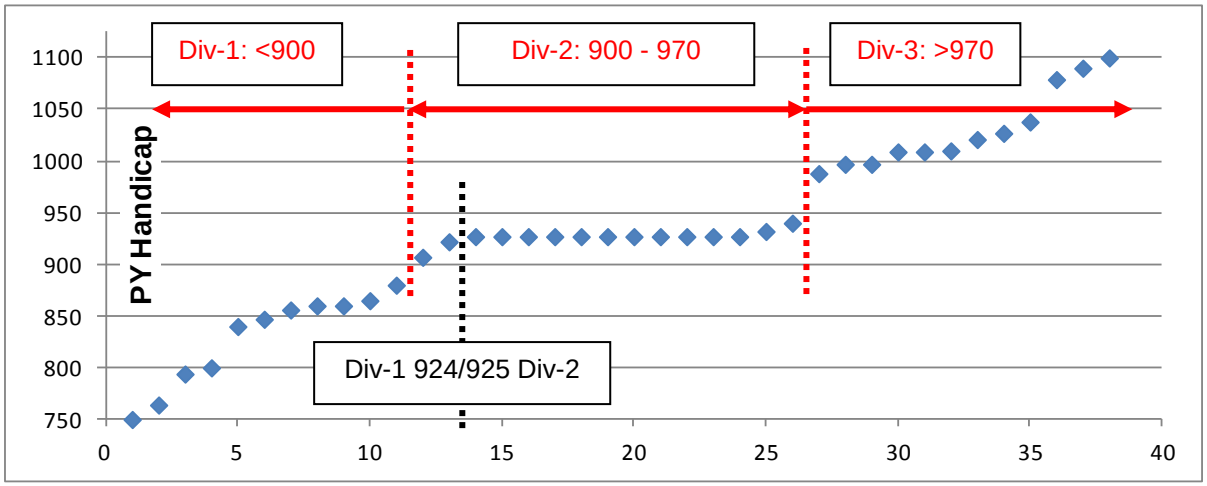
	< PY limit	Number of races	Yacht starts	Average turnout	Races <6 yachts	PY min H/cap	PY max H/cap	Average H/cap	H/cap spread
Div-1	925	16	141	8.8	1	750	922	849	20%
Div-2	1500	16	215	13.4	0	927	1105	982	18%
Total		**32**	**356**	**22.3**	**1**				



PEYC 2015 Yacht Fleet:

To date in 2015, 38 yachts have competed in club races with an average 59% turnout in the Wednesday trophies and A & B series. At a handicap split at 924/925, there are 13 yachts in Div-1 and 25 in Div-2 with average turnouts of 8.8 and 13.4. There has been only one race out of 32 (3%) with a turnout below a minimum target of 6 yachts in any race for sensible competition.

A fairly obvious option would be to create a new division covering the handicap range 900 – 970 that would include all the Hunter 707 yachts. These three divisions would have had fleets of 11, 15 & 12 yachts respectively in 2015. Would the race turnouts have been satisfactory?



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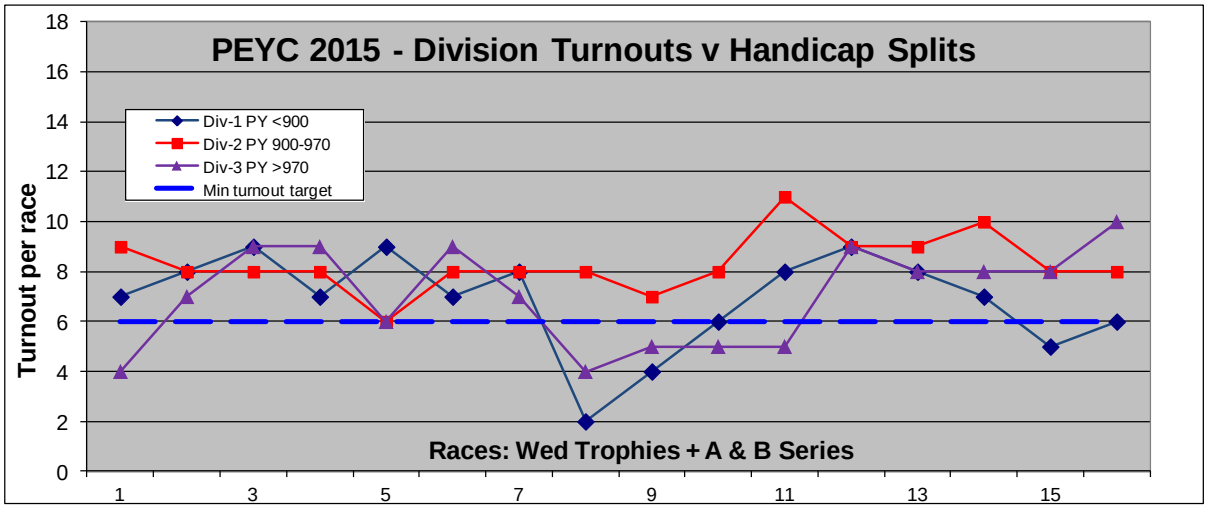
Option B: Three Divisions with 899/900 & 969/970 Handicap Splits:

	< PY limit	Number of races	Yacht starts	Average turnout	Races <6 yachts	PY min H/cap	PY max H/cap	Average H/cap	H/cap spread
Div-1	900	16	110	6.9	3	750	880	831	16%
Div-2	970	16	133	8.3	0	907	940	926	4%
Div-3	1500	16	113	7.1	5	988	1105	1025	11%
Total		**48**	**356**	**22.3**	**8**				



Average turnouts for the three divisions would have been 6.9, 8.3 and 7.1 respectively but with 8 races out of 48 (17%) below the minimum target of 6 yachts in each race (3 in Div-1; 5 in Div-3) including one in Div-1 with only two yachts. Handicap ranges would reduce from 20% to 16% in Div-1, 18% to 11% in Div-3 and be only 4% in Div-2, which would make for fairer racing in tidal currents.

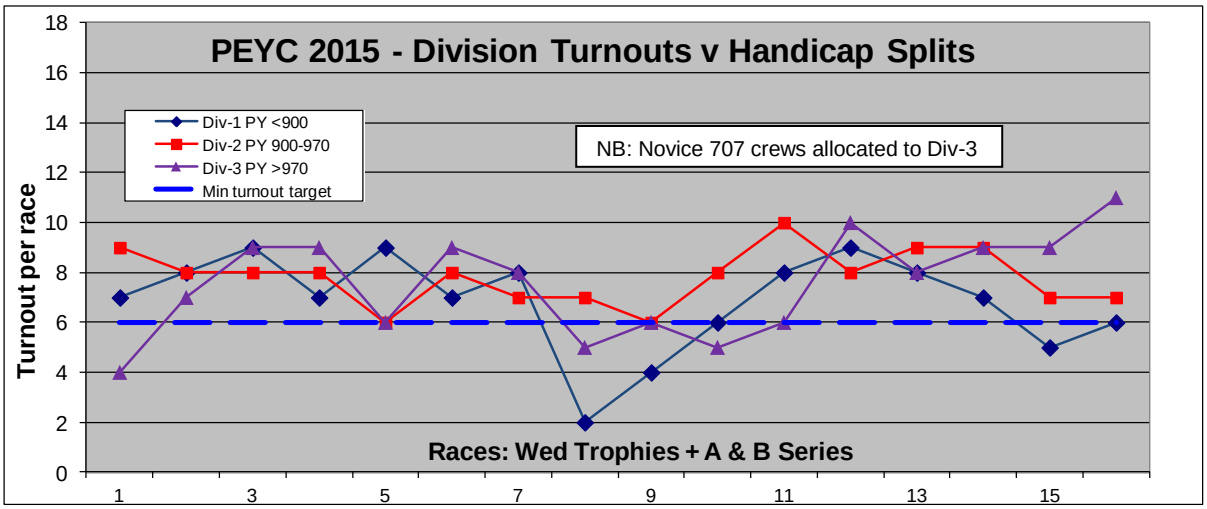
Option C: Introduce Hunter 707 Class:

It is suggested that we now have enough Hunter 707 yachts for class racing. So far in 2015, eleven 707s have competed but the average turnout has been only 4.5, with a minimum of 2 and a maximum of 7. Insufficient in my opinion to justify a separate class. There is also a big performance differential between experienced and novice crews, hence they may not collectively find class racing satisfactory. One of the arguments for moving the novice 707 crews into Div-2 was that they would still be racing in company with other, albeit nominally slower yachts, rather than watching Div-1 disappear over the horizon. And finally, if we had a separate 707 class, the 17.8 average turnout of the remainder would not support three further divisions.

Option D: Three Divisions with Separation of Experienced & Novice 707s:

One way of providing encouragement to the novice 707 crews might be to allocate them to Div-3 in a three division arrangement. If the more experienced crews (e.g. Braveheart, Chaos, Code X, Code Z, Jalapeno, Synchro & Valhalla) had raced in Div-2 and the novice crews (e.g. Apollo, Apollo-R, Baltika & Eh!; handicapped at 970 PY) in Div-3, then the distribution would have been as follows. Note that this affects only 8 results out of 72 results for Hunter 707s.

	< PY limit	Number of races	Yacht starts	Average turnout	Races <6 yachts	PY min H/cap	PY max H/cap	Average H/cap	H/cap spread
Div-1	900	16	110	6.9	3	750	880	831	16%
Div-2	970	16	125	7.8	0	907	940	926	4%
Div-3	1500	16	121	7.6	3	970	1105	1022	13%
Total		**48**	**356**	**22.3**	**6**				

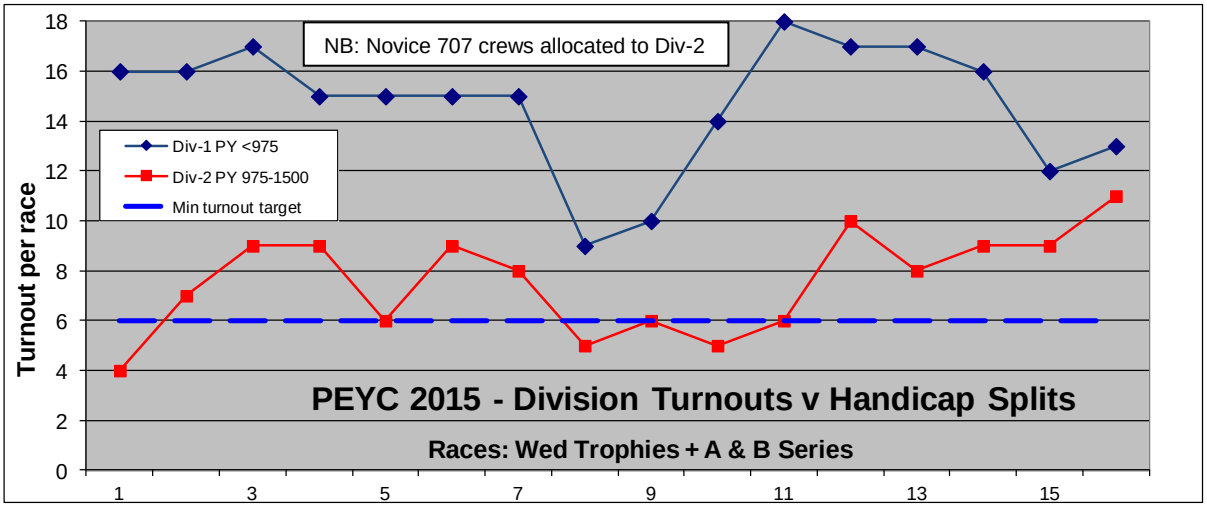


This option would have improved the average turnout distribution between Div-2 & Div-3 to 7.8 & 7.6. We would need to find someway of identifying different 707s in the database so that they are allocated to the intended race divisions. However, some people will argue that all Hunter 707s should be racing in the same division, irrespective of crew skill levels.

Option E: Two Divisions with 974/975 Split and Separation of Experienced & Novice 707s:

An alternative approach would be to revert to the 974/975 split used by PEYC from 2007 to 2012, and currently by the FYCA for FIG races, but with the novice Hunter 707 crews allocated to Div-2. Note that this affects only 8 results out of 72 results for Hunter 707s. The distribution would have been:

	< PY limit	Number of races	Yacht starts	Average turnout	Races <6 yachts	PY min H/cap	PY max H/cap	Average H/cap	H/cap spread
Div-1	975	16	235	14.7	0	750	940	882	22%
Div-2	1500	16	121	7.6	3	975	1105	1022	13%
Total		**32**	**356**	**22.3**	**3**				



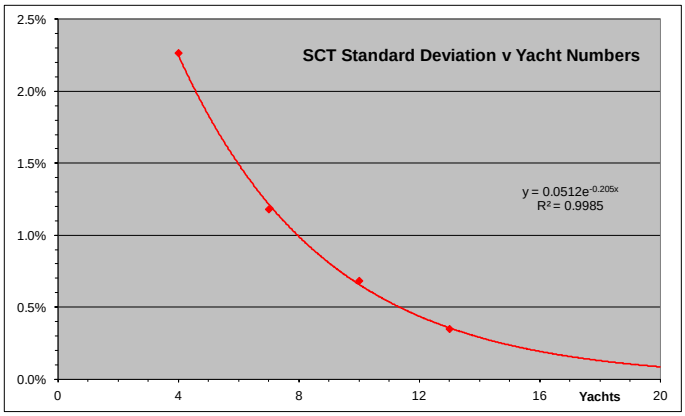
This option, identical to Div-1 at ECSF in August 2015, would increase the Div-1 handicap spread from 20% to 22% while reducing Div-2 from 18% to 13%. Compared to Div-1, the performance of Div-2 yachts is more affected by tidal currents since their absolute speed through the water is lower for any given wind speed. The effect of tidal currents on performance across a handicap spread of 13% in Div-2 is virtually the same as for a 22% range in Div-1, across a wide range of wind speeds. Hence the level of 'unfairness' caused by racing in tidal currents would be similar across Div-1 and Div-2.

Arguments For Three Divisions:

- Closer competition between yachts with similar handicaps in narrower handicap ranges in each division.
- Reduced effect of tidal currents across narrower handicap ranges in the divisions gives fairer racing.
- Reduced effect of dying evening winds due to the smaller spread of race durations across any division.

Arguments Against Three Divisions:

- Higher risk of races with low turnout numbers. With the current average turnout of ~22 yachts, the best we could hope to achieve would be an average of ~7 yachts in each division provided we are lucky in selecting the optimum handicap split points.
- Higher risk of poor turnouts due to individual owners temporarily sailing elsewhere, going on holiday, insufficient crew available, etc. With only ~11-15 yachts in each division, we would need ~50% of them regularly participating in each division if we are to maintain a minimum turnout of 6 yachts per race to provide an acceptable standard of competition.
- The quality of achieved performance measurements, essential for running the PEYC Rolling Handicap system and adjusting the FYCA base handicaps, will be poorer due to the smaller numbers of yachts contributing to the SCT (Standard Corrected Times) of races. The graph below shows how the SCT uncertainty, and thus achieved performance estimation accuracy, deteriorates exponentially as the number of yachts in a race is reduced.



Other Considerations:

- If option D was chosen (Three divisions with separation of experienced & novice 707s), the benchmark yachts would be 831 PY for Div-1, 926 PY for Div-2 & 1022 PY for Div-3. Hence the course length ratios relative to Div-3 should be 1.10 for Div-2 and 1.23 for Div-1. Rather than redesign the paired 1.15 ratio courses, I would suggest using the current Div-1 paired courses for both Div-1 & Div-2, assuming that Div-1 would normally complete the 3rd round.
- If either option A or E was chosen (Two divisions), I would suggest increasing the current 30% time limit extension to give more opportunity for the slower end of each fleet to finish. This would also reduce race durations pro rata. I would also suggest that we always round up time limit extensions to the nearest 5 minutes to guarantee a minimum percentage.
- To address the 'dying wind' syndrome, we could consider advising race officers to select hybrid courses for multi-division races if the wind is forecast to drop dramatically on a Wednesday evening. All yachts in each division would then sail in the same conditions for roughly the same time. It would imply pairing hybrid courses or doing mark clash checks.

Jim Scott - PEYC Sailing Secretary - 13th Sept 2015