

## 4.5 SEAT RACING FOURS

Seat racing is a term used to describe the process of selecting a crew by having athletes race against each other for their seat in the boat. Seat racing provides a comparison of the athletes' boat moving ability relative to other athletes within a group. There are numerous methods of switching athletes within boats to compare results. The following is an outline for racing eight athletes (4 ports, 4 starboards) in two fours over a total of six races.

The total of the race finish times for each athlete will provide the comparative result. The athlete with the lowest total race time has shown to have a better boat moving ability. Boat and athlete times are totaled and averaged to allow further athlete/crew analysis.

### 4.5.1 Seat Race Matrix

This seat racing matrix rotates athletes through the two shells over six races as shown in Figure 4.5.1a.

Figure 4.5.1a

Race Matrix

Race 1	
Boat 1	Boat 2
2	3
B	C
1	4
A	D

Race 2	
Boat 1	Boat 2
4	1
A	D
2	3
C	B

Race 3	
Boat 1	Boat 2
2	1
B	A
3	4
C	D

Race 4	
Boat 1	Boat 2
1	3
C	A
2	4
D	B

Race 5	
Boat 1	Boat 2
4	3
D	C
2	1
B	A

Race 6	
Boat 1	Boat 2
2	4
D	B
3	1
A	C

Through the rotation starboard and port side athletes race with other athletes an equal number of times. Every athlete races twice with athletes rowing on the same side of the boat and three times with athletes on the opposite side of the boat. Figure 4.5.1a details the matrix rotation of athletes through the seat races.

The **Seat Race Matrix** outlined above in Figure 4.5.1a designates each athlete as a letter or number. Reading the table down from bow to stroke shows athletes A, B, C and D on port side in a standard rigged boat. Reading the table down from stroke to bow designates A, B, C and D as starboard side athletes.

The athletes designated with letters row in both boats an equal number of times as shown above. Athletes designated with numbers row in one boat four times and the other boat twice except for athlete number 2. Athlete 2 will row in the same shell for all six races while 1, 3 and 4 row are in the other boat four races and athlete 2's boat twice. For this reason it is important to use boats that are the same size and have the same rigging. However, since the boats are not exactly the same a straight comparison can be made between athletes 1, 3 and 4 while further analysis of the results should be made to review athlete number 2.

The boats must be rigged and checked prior to starting the seat racing. It is also important that the two coxies be the same weight to maximize the similarity of the shells. Rigging and rowing the shells in workouts prior to seat racing will provide the opportunity to insure they are in good racing order. For the best comparison of starboard side athletes use letters and read the table down from stroke to bow. The best port results are found by reading the table down from bow to stroke.

### 4.5.2 Seat Race Method

Prior to seat racing, designate athletes with a number or letter and record their name on the Race Sheet. Allowing athletes to select their own number or letter will demonstrate the fairness of the matrix.

The **warm-up** before the first race must be thorough and include rowing at seat race pace.

The following is an outline of the seat race format:

- 1) The seat racing distance of 1500m or 1000m is common depending on conditions and time available.
- 2) Races will start at the 500m or 1000m mark with both crews rowing through the start line together at race speed. Races can also be head style if preferred.
- 3) Start times if not even (one boat ahead) will be recorded and finish times will be adjusted accordingly.
- 4) A maximum rate of **32 spm** allowed. This will control fatigue and limit the stroke man's control of the rhythm.
- 5) The coxie will only provide the stroke rate and not count or motivate the crew.
- 6) Time penalties may be assessed for interference or rowing above maximum stroke rates.
- 7) Any unordinary situations during the race will be recorded on the race sheets and athletes can talk to the coaches after each race to voice their concerns.
- 8) Crews will dock at the finish line dock at the end of each seat race. Race times will not be available until the completion of seat racing.
- 9) The coaches will assign seats for the second and subsequent races as per matrix.

- 10) The second race will run similar to the first as above.
- 11) There will be six races.
- 12) The boats will be in their same lanes for all races.

The coach must ensure the fairness in all races. There are six race sheets provided in the following pages to assist coaches in recording seat racing results.

### **4.5.3 Notes for Athletes**

Seat racing can be highly stressful for the athlete who feels their future in the crew is dependent on their performance.

- 1) Bring a water bottle or two.
- 2) Focus on each race. Do not get distracted and never give up.
- 3) Don't sweat the small stuff and don't let yourself be convinced that someone else has an advantage over you in a race.
- 4) Confidence is a factor in racing. You should convince the crew before the race that you have been waiting to row with them against the other four and that you think this is the best combination and can win... share confidence don't bring your group down.

### **4.5.4 Seat Race Record Sheets**

Coaches should use the predesigned Race Record Sheets provided on the following pages to record race related times and data. These pages outline the race matrix as well as provide areas to record all race information.

**Race # 1**

Date		Time		
		Lane 4		Lane 6
Boat				
Bow	Stroke	<b>2</b>	<b>3</b>	
2	3	<b>B</b>	<b>C</b>	
3	2	<b>1</b>	<b>4</b>	
Stroke	Bow	<b>A</b>	<b>D</b>	
Start Time		-	-	
Stroke Rates				
0				
250				
500				
750				
1000				
1250				
1500				
Finish Time				
Start Time (-)				
Penalty (+)				
Overall Time				
Steering Good/Fair/Poor				
Race Notes				
Timers				

**Race # 2**

Date		Time		
		Lane 4		Lane 6
Boat				
Bow	Stroke	<b>4</b>	<b>1</b>	
2	3	<b>A</b>	<b>D</b>	
3	2	<b>2</b>	<b>3</b>	
Stroke	Bow	<b>C</b>	<b>B</b>	
Start Time		-	-	
Stroke Rates				
0				
250				
500				
750				
1000				
1250				
1500				
Finish Time				
Start Time (-)				
Penalty (+)				
Overall Time				
Steering Good/Fair/Poor				
Race Notes				
Timers				

**Race # 3**

Date		Time		
		Lane 4		Lane 6
Boat				
Bow	Stroke	<b>2</b>	<b>1</b>	
2	3	<b>B</b>	<b>A</b>	
3	2	<b>3</b>	<b>4</b>	
Stroke	Bow	<b>C</b>	<b>D</b>	
Start Time		-	-	
Stroke Rates				
0				
250				
500				
750				
1000				
1250				
1500				
Finish Time				
Start Time (-)				
Penalty (+)				
Overall Time				
Steering Good/Fair/Poor				
Race Notes				
Timers				

**Race # 4**

Date		Time		
		Lane 4		Lane 6
Boat				
Bow	Stroke	<b>1</b>	<b>3</b>	
2	3	<b>C</b>	<b>A</b>	
3	2	<b>2</b>	<b>4</b>	
Stroke	Bow	<b>D</b>	<b>B</b>	
Start Time		-	-	
Stroke Rates				
0				
250				
500				
750				
1000				
1250				
1500				
Finish Time				
Start Time (-)				
Penalty (+)				
Overall Time				
Steering Good/Fair/Poor				
Race Notes				
Timers				



**Race # 5**

Date		Time		
		Lane 4		Lane 6
Boat				
Bow	Stroke	<b>4</b>	<b>3</b>	
2	3	<b>D</b>	<b>C</b>	
3	2	<b>2</b>	<b>1</b>	
Stroke	Bow	<b>B</b>	<b>A</b>	
Start Time		-	-	
Stroke Rates				
0				
250				
500				
750				
1000				
1250				
1500				
Finish Time				
Start Time (-)				
Penalty (+)				
Overall Time				
Steering Good/Fair/Poor				
Race Notes				
Timers				

**Race # 6**

Date		Time		
		Lane 4		Lane 6
Boat				
Bow	Stroke	<b>2</b>	<b>4</b>	
2	3	<b>D</b>	<b>B</b>	
3	2	<b>3</b>	<b>1</b>	
Stroke	Bow	<b>A</b>	<b>C</b>	
Start Time		-	-	
Stroke Rates				
0				
250				
500				
750				
1000				
1250				
1500				
Finish Time				
Start Time (-)				
Penalty (+)				
Overall Time				
Steering Good/Fair/Poor				
Race Notes				
Timers				

### **4.5.6 Results**

The results of seat racing using this format provide a comparison between the athletes on each side of the boat.

- 1) The athletes will be ranked by comparing their total time for all six races.
- 2) Results of each race will be compared against theoretical projected results using the average times of the athletes in each both crews.
- 3) Shell averages will be compared with crew averages to evaluate boat inconsistencies.
- 4) A spreadsheet is available for result analysis.
- 5) Final comparison will be as a percentage above the lowest total time. The lowest time will be a 100% score. The difference between the lowest and highest time will be multiplied by six and calculated as a percentage of the lowest time.

### **4.5.6 Analysis**

A review of the total times gives the best comparison of each athlete's boat moving ability.

The spreadsheet also checks the finish times of each race and compares the finish times with theoretical times from the crew average projected times. The spreadsheet provides an "under" or "over" projected time and the actual difference. The "Under" notes that the crew has rowed faster than the projected time. If a crew is under projected by a substantial amount (4+ seconds) it could mean any of a number of factors:

- 1) This is a strong combination.
- 2) The other crew is a weak combination.
- 3) Something went wrong, timing, bad strokes...

Further analysis of large under over times is required. Go back to the race sheet to see if there was a factor. Review times and check to see that this race caused a shift in the comparison. That is to say, without this race would the ratings still be the same?

Review the results to determine the difference in the boat times. Review races 1 vs 4, 2 vs 5 and 3 vs 6. The boatings for these races are the same except for two athletes on one side of the boat. Race results should match the differences of the average of the two athletes.

Results of each race and the total time for each athlete should be posted for all athletes to see. The analyses spreadsheet should be posted and provide visible results to show the objective results.

**RESULTS**

Port	Total Time	Starboard	Total Time
Athlete A		Athlete 1	
Athlete B		Athlete 2	
Athlete C		Athlete 3	
Athlete D		Athlete 4	

**RACE SHEETS**

	RACE 1	RACE 2	RACE 3	RACE 4	RACE 5	RACE 6	TOTAL	AVERAGE
Athlete A								
Race Time								
Crew Avg.								
Boat 2 Avg.								
± over/under								
Athlete B								
Race Time								
Crew Avg.								
Boat 2 Avg.								
± over/under								
Athlete C								
Race Time								
Crew Avg.								
Boat 2 Avg.								
± over/under								
Athlete D								
Race Time								
Crew Avg.								
Boat 2 Avg.								
± over/under								
Athlete 1								
Race Time								
Crew Avg.								
Boat 2 Avg.								
± over/under								
Athlete 2								
Race Time								
Crew Avg.								
Boat 2 Avg.								
± over/under								
Athlete 3								
Race Time								
Crew Avg.								
Boat 2 Avg.								
± over/under								
Athlete 4								
Race Time								
Crew Avg.								
Boat 2 Avg.								
± over/under								

# Coaching (Seat Racing)

## Example Results Analysis

	RACE 1	RACE 2	RACE 3	RACE 4	RACE 5	RACE 6	TOTAL	Average
<b>Tim</b>	<b>A</b>							
CREW TIME	03:22.0	03:29.5	03:26.8	03:31.5	03:39.1	03:35.5	21:04.4	03:30.7
OTHER TIME	03:26.0	03:33.8	03:29.8	03:32.6	03:30.2	03:30.3		
CREW AVG.	03:30.3	03:30.2	03:30.3	03:30.5	03:31.3	03:31.0		
OTHER AVG.	03:30.9	03:30.9	03:30.8	03:30.7	03:29.8	03:30.2		
OVR/UND	UNDER	UNDER	UNDER	UNDER	OVER	OVER	<b>OVER</b>	
TIME	00:03.3	00:03.6	00:02.5	00:00.9	00:07.4	00:04.3	<b>00:01.4</b>	
<b>Scott</b>	<b>B</b>							
CREW TIME	03:22.0	03:33.8	03:29.8	03:31.5	03:30.2	03:30.3	20:57.6	03:29.6
OTHER TIME	03:26.0	03:29.5	03:26.8	03:32.6	03:39.1	03:35.5		
CREW AVG.	03:30.3	03:30.9	03:30.8	03:30.5	03:29.8	03:30.2		
OTHER AVG.	03:30.9	03:30.2	03:30.3	03:30.7	03:31.3	03:31.0		
OVR/UND	UNDER	OVER	UNDER	UNDER	UNDER	UNDER	<b>UNDER</b>	
TIME	00:03.3	00:03.6	00:02.5	00:00.9	00:07.4	00:04.3	<b>00:09.9</b>	
<b>Tom</b>	<b>C</b>							
CREW TIME	03:26.0	03:29.5	03:29.8	03:31.5	03:39.1	03:30.3	21:06.2	03:31.0
OTHER TIME	03:22.0	03:33.8	03:26.8	03:32.6	03:30.2	03:35.5		
CREW AVG.	03:30.9	03:30.2	03:30.8	03:30.7	03:31.3	03:30.2		
OTHER AVG.	03:30.3	03:30.9	03:30.3	03:30.5	03:29.8	03:31.0		
OVR/UND	OVER	UNDER	OVER	UNDER	OVER	UNDER	<b>OVER</b>	
TIME	00:03.3	00:03.6	00:02.5	00:01.3	00:07.4	00:04.3	<b>00:04.0</b>	
<b>Mark</b>	<b>D</b>							
CREW TIME	03:26.0	03:33.8	03:26.8	03:31.5	03:30.2	03:35.5	21:03.8	03:30.6
OTHER TIME	03:22.0	03:29.5	03:29.8	03:32.6	03:39.1	03:30.3		
CREW AVG.	03:30.9	03:30.9	03:30.3	03:30.7	03:29.8	03:31.0		
OTHER AVG.	03:30.3	03:30.2	03:30.8	03:30.5	03:31.3	03:30.2		
OVR/UND	OVER	OVER	UNDER	UNDER	UNDER	OVER	<b>OVER</b>	
TIME	00:03.3	00:03.6	00:02.5	00:01.3	00:07.4	00:04.3	<b>00:00.0</b>	
<b>Brian</b>	<b>1</b>							
CREW TIME	03:22.0	03:33.8	03:26.8	03:31.5	03:39.1	03:30.3	21:03.5	03:30.6
OTHER TIME	03:26.0	03:29.5	03:29.8	03:32.6	03:30.2	03:35.5		
CREW AVG.	03:30.3	03:30.9	03:30.3	03:30.7	03:31.3	03:30.2		
OTHER AVG.	03:30.9	03:30.2	03:30.8	03:30.5	03:29.8	03:31.0		
OVR/UND	UNDER	OVER	UNDER	UNDER	OVER	UNDER	<b>UNDER</b>	
TIME	00:03.3	00:03.6	00:02.5	00:01.3	00:07.4	00:04.3	<b>00:00.5</b>	
<b>Stu</b>	<b>2</b>							
CREW TIME	03:22.0	03:29.5	03:29.8	03:31.5	03:30.2	03:35.5	20:58.5	03:29.7
OTHER TIME	03:26.0	03:33.8	03:26.8	03:32.6	03:39.1	03:30.3		
CREW AVG.	03:30.3	03:30.2	03:30.8	03:30.7	03:29.8	03:31.0		
OTHER AVG.	03:30.9	03:30.9	03:30.3	03:30.5	03:31.3	03:30.2		
OVR/UND	UNDER	UNDER	OVER	UNDER	UNDER	OVER	<b>UNDER</b>	
TIME	00:03.3	00:03.6	00:02.5	00:01.3	00:07.4	00:04.3	<b>00:08.8</b>	
<b>John</b>	<b>3</b>							
CREW TIME	03:26.0	03:33.8	03:29.8	03:31.5	03:39.1	03:35.5	21:15.7	03:32.6
OTHER TIME	03:22.0	03:29.5	03:26.8	03:32.6	03:30.2	03:30.3		
CREW AVG.	03:30.9	03:30.9	03:30.8	03:30.5	03:31.3	03:31.0		
OTHER AVG.	03:30.3	03:30.2	03:30.3	03:30.7	03:29.8	03:30.2		
OVR/UND	OVER	OVER	OVER	UNDER	OVER	OVER	<b>OVER</b>	
TIME	00:03.3	00:03.6	00:02.5	00:00.9	00:07.4	00:04.3	<b>00:20.2</b>	
<b>Dan</b>	<b>4</b>							
CREW TIME	03:26.0	03:29.5	03:26.8	03:31.5	03:30.2	03:30.3	20:54.3	03:29.0
OTHER TIME	03:22.0	03:33.8	03:29.8	03:32.6	03:39.1	03:35.5		
CREW AVG.	03:30.9	03:30.2	03:30.3	03:30.5	03:29.8	03:30.2		
OTHER AVG.	03:30.3	03:30.9	03:30.8	03:30.7	03:31.3	03:31.0		
OVR/UND	OVER	UNDER	UNDER	UNDER	UNDER	UNDER	<b>UNDER</b>	
TIME	00:03.3	00:03.6	00:02.5	00:00.9	00:07.4	00:04.3	<b>00:15.4</b>	