



Swimming Officials Group

Race Results Workbook

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## **Race Results Workbook**

These guidelines are to be used so that the areas of the syllabus can be covered with practical examples and solutions which will be developed by the candidates with the help of the tutor. This workbook has been compiled with the assistance of many individuals from the various home countries which together comprise to form British Swimming.

The Swimming Officials Group would value your feedback on the style and content of this document. There is little point in further development if it does not meet the candidates, i.e. your, needs.

This booklet is not intended to be a definitive guide to passing the examination. In conjunction with the FINA Swimming Rules and any home country advice it will assist. Determining race results, whether manual or AOE is a mechanical process. Once mastered, identifying and interpreting the race result from various sources of information will become a relatively standard procedure.

## MANUAL RESULTS

How placings are decided when AOE is not in use?

- The Finish Judges and the Referee decide the order of finishing independently.
- Where the finishing orders of the Finish Judges disagree in any way, their results and that of the Referee shall be considered, together with any other available evidence. The relative order of any two swimmers shall be determined by a majority decision.

### *Examples      Placing*

Judge A	2 7 6 5 4 1 3 8	Judge A	6 2 8 1 5 4 3 7
Judge B	2 7 5 6 4 1 8 3	Judge B	6 8 2 5 1 3 4 7
Referee	7 2 4 5 6 3 1 8	Referee	2 6 5 8 1 4 7 3
<b>Official Result</b>	<b>2 7 5 6 4 1 3 8</b>	<b>Official Result</b>	<b>6 2 8 5 1 4 3 7</b>
Judge A	8 6 7 5 4 2 3 1	Judge A	4 7 6 5 1 2 3 8
Judge B	7 6 8 5 3 4 2 1	Judge B	5 4 6 7 1 8 3 2
Referee	6 7 8 3 5 2 1 4	Referee	6 4 7 5 1 4 2 8
<b>Official Result</b>	<b>6 7 8 5 3 4 2 1</b>	<b>Official Result</b>	<b>4 6 7 5 1 2 3 8</b>

### *Example with places and times*

Judge A	1 5 6 3 8 7 2 4	Lane	Time
Judge B	5 1 6 3 7 8 4 2	1	57.16
Referee	6 1 5 3 4 7 8 2	2	59.47
Official Placings	1 5 6 3 7 8 4 2	3	57.89
		4	58.32
		5	57.10
		6	57.17
		7	58.34
		8	58.31

### **Official Result**

Position	Lane	Time
1	1	57.13 RD
2	5	57.13 RD
3	6	57.17
4	3	57.89
5	7	58.33 RD
6	8	58.33 RD
7	4	58.33 RD
8	2	59.47

**Exercise 1.**

Placings		Manual Times
Judge A	4 3 5 1 2 6	Lane 1      Time 1:23.67
Judge B	3 4 5 1 6 2	Lane 2      Time 1:23.66
Referee	3 5 4 1 6 2	Lane 3      Time 1:18.32
Official Placing	.....	Lane 4      Time 1:18.31
Official Result		Lane 5      Time 1:19.01
		Lane 6      Time 1:23.65

Position	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....

**Exercise 2.**

Placings		Manual Times
Judge A	4 3 5 6 2 1	Lane 1      Time 1:06.01
Judge B	4 5 3 1 2 6	Lane 2      Time 1:05.98
Referee	4 3 5 2 1 6	Lane 3      Time 1:05.38
<i>Lane 5 Disq at the start</i>		Lane 4      Time 1:05.29
		Lane 5      Time 1:05.52
		Lane 6      Time 1:06.09

Official Placing .....

Official Result

Position	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....

**Exercise 3.**

Placings			Manual Times
		Lane	Time
Judge A	3 6 2 4 5		1 No time
Judge B	6 3 2 5 4		2 1:09.83
Referee	3 6 2 5 4		3 1:08.21
			4 No time
<i>Lane 1 did not finish</i>			5 1:09.78
			6 1:08.17
Official Placing	.....		

Official Result

Position	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....

**Exercise 4**

Placings			Manual Times
		Lane	Time
Judge A	2 6 5 3 4 8 7 1		1 3:34.67
Judge B	2 5 6 3 8 4 7 1		2 2:56.79
Referee	6 5 2 3 7 4 8 1		3 3:05.54
			4 3:24.65
<i>Lane 3 disqualified at the start</i>			5 2:56.78
			6 2:56.77
			7 3:24.64
			8 No time
Official Placing	.....		

Official Result

Position	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....
7	.....	.....
8	.....	.....

## Exercise 5      Finals

On occasions where swimmers compete in heats followed by a final, the final competitors shall be allocated lanes in a 'spearhead' i.e. in a six lane pool the fastest qualifier allocated to lane 3 then 4,2,5,1,6 in the order fastest to slowest. In a pool with an odd number of lanes the centre lane would be allocated to the fastest qualifier.

### Heat 1

Placings		Swimmer	Lane	Time
Judge A	5 6 4 1 3 2	A	1	1:05.06
Judge B	5 4 6 1 2 3	B	2	1:05.11
Referee	4 6 5 1 3 2	C	3	1:05.06
		D	4	1:03.52
Official Placing	.....	E	5	1:03.55
		F	6	1:03.49

### Heat 2

Placings		Swimmer	Lane	Time
Judge A	3 4 2 5 1 6	G	1	1:05.11
Judge B	3 4 2 1 5 6	H	2	1:05.08
Referee	3 4 2 1 6 5	I	3	1:03.22
		J	4	1:03.17
Official Placing	.....	K	5	1:05.99
		L	6	1:05.96

**From the previous two heats arrange the swimmers in their Lanes for the final including the two reserves**

Lane	Swimmer
1	.....
2	.....
3	.....
4	.....
5	.....
6	.....
1 <sup>st</sup> Reserve	.....
2 <sup>nd</sup> Reserve	.....

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## Exercise 6      Semi finals

This exercise requires the qualifying swimmers to be allocated lanes for semi finals. The fastest swimmer is placed in the second semi-final in the fastest lane, the second fastest is placed in the fastest lane in the first semi-final, the third fastest swimmer is placed in the second semi-final in the second fastest lane and so on using the spearhead system.

Arrange the following swimmers below into two semi-finals

A      1:01.47  
B      1:01.49  
C      1:01.51  
D      1:01.54  
E      1:01.57  
F      1:01.58  
G      1:01.60  
H      1:01.67  
I      1:01.81  
J      1:01.98  
K      1:02.03  
L      1:02.47  
M      1:02.49  
N      1:02.51  
O      1:02.74  
P      1:02.81

### Semi Final One

L1 ..... L2 ..... L3 ..... L4 ..... L5 ..... L6 ..... L7 ..... L8 .....

### Semi Final Two

L1 ..... L2 ..... L3 ..... L4 ..... L5 ..... L6 ..... L7 ..... L8 .....



### Exercise 7.

From the following three heats select the swimmers for the semi-finals

#### Heat 1.

Place	Swimmer	Time
1	A	57.61
2	B	57.81
3	C	57.91
4	D	58.13
5	E	58.14
6	F	58.91
7	G	59.17
8	H	59.19

#### Heat 2

Place	Swimmer	Time
1	J	57.65
2	K	58.01
3	L	58.13
4	M	58.76
5	N	58.87
6	O	59.91
7	P	59.98
8	Q	1:01.01

#### Heat 3.

Place	Swimmer	Time
1	R	56.40
2	S	56.47
3	T	57.10
4	U	58.13
5	V	58.14
6	W	59.63
7	X	59.71
8	Z	59.81

#### Semi-finals

Semi-Final 1	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7	Lane 8
Swimmer								

Semi-Final 2	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7	Lane 8
Swimmer								

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## AUTOMATIC OFFICIATING EQUIPMENT (AOE)

### GENERAL INFORMATION

In the main there are three suppliers of AOE within British Swimming, Omega who supply the OSM6, which is being phased out and replaced by the ARES system, Colorado and Daktronics. Whilst the internal workings and facilities they offer may vary in capabilities remember the basics, which, as the saying goes 'ain't rocket science'.

- They start ***automatically*** when the starting signal is given (either acoustic start or transducer with a starting pistol).
- They stop ***automatically*** when the swimmer exerts sufficient pressure to activate the pad.
- They work out the time elapsed between start and finish.
- They place by elapsed time.
- As a 'back-up' there is often the facility for human operators to operate a secondary system when the swimmer finishes a race. This operation is carried out ***manually*** as the name implies, by the lane timekeepers pressing back-up buttons.

Please note the highlighted elements of the points – **if a human had a hand in the time it is MANUAL.**

Provided that the referee is satisfied with the operation of the AOE it shall be used to determine the order of finishing and the times of the competitors, subject only to the elimination of competitors who are disqualified.

### Order of times

**Primary ===== Backup ===== Hand Held Watch**

In the event of the timing system on a lane apparently not functioning correctly and the backup time and manual time contradicts the order of placings then the referee will adjust the back up time to fit the placings and write at the side the letters RD (referee's decision) as described later. This time cannot be used for British record purposes.

When you have an AOE back-up time which is inconsistent with the placings consider the manual time. If the manual time is consistent with the placings it should be inserted before considering a RD based on the Semi AOE time.

In the event that there are three manual times available for a lane then the official time for that lane shall be used for the purpose of placing the swimmer.

## **Colorado Time Systems**

### **General Information**

Times can be recorded to either 1/1000<sup>th</sup> second or in the normal case 1/100<sup>th</sup> second. This is done during the set-up procedure prior to the gala.

**1:26.547**

**1:35.60**

Like the Omega system the Colorado can be started manually this will be denoted on the print out by:

**Start Used : keyboard**

Located on the printout in the top right hand corner under the Race, Date and Time.

If there is a difference of +/-0.3 seconds between primary and back up time this will automatically be displayed on the printout alongside the lane number on the result sheet. This value is a preset value

<b>Place</b>	<b>Lane</b>	<b>Time</b>
<b>1</b>	<b>4</b>	<b>1:18.33</b>
<b>2</b>	<b>3</b>	<b>1:18.40</b>
<b>3</b>	<b>5</b>	<b>1:20.22</b>
<b>4</b>	<b>6</b>	<b>1:21.28 &lt; 1:20.91 &gt;</b>

The later Colorado systems can be set up to denote an early activation of the back up button by the lane timekeeper.

The printout can either be in Lane order, or Place order, or both.

All the information a Referee requires is on the A4 printout sheet except when the automatic relay judging system is being employed and this will be on a separate sheet to the race result.

## Sample results sheet

```

===== >RACE HISTORY< =====>Race 0013<=====
                                                Saturday 07-13-XX  11:15.34
|-----< Lane Number
| |-----< Lengths
| | |-----< Time

3) 02 29.13  4) 02 30.02  2) 02 30.07  1) 02 30.17  6) 02 30.38  5) 02 31.35
3) 04 59.55  5) 04 1:00.91  2) 04 1:01.10  4) 04 1:01.17  1) 04 1:01.61  6) 04 1:02.41

                Lane 1      Lane 2      Lane 3      Lane 4      Lane 5      Lane 6
BACKUP  1:01.25      1:01.09      59.52      1:01.45      1:00.62      1:02.40
=====

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```

=>RACE SUMMARY(byplace)<===== >Race 0013<=====
                                                Saturday 07-13-XX  11:15.34

                        Colorado Time Systems

100 Meters
EVENT:10      Heat: 6
[0013] Saturday 07-13-XX  11:13.45

                Place  Lane  Time
                1      3      59.55
                2      5      1:00.91
                3      2      1:01.10
                4      4      1:01.17
                5      1      1:01.61 <1:01.25>
                6      6      1:02.41
=====

```

The above printout illustrates the layout of the Colorado system of how the results are recorded of a race.

In the Race History you have all the information of what occurred during the race, even the lap times for each lane. This is dependent upon whether the swimmer activates the pad at the turn and finish. In the race above there were no problems.

The backup times for each lane are recorded and displayed in the race history section thus giving the referee all the information that is required from the system. However, any disqualifications will be made by the referee and any changes to the result.

The race is summarised as shown above, the result being displayed in place order

=>RACEHISTORY<=====>(Race 0013 )=====

Sunday 07-14-XX 12:45.56

|-----<Lane Number  
| |-----Lengths  
| | |-----Time

3) 02 30.00 4) 02 30.02 2) 02 30.09 1) 02 30.21 6) 02 30.50  
3) 04 58.99 5) 02 1:00.91 2) 04 1:01.08 4) 04 1:01.15 1) 04 1:02.13  
6) 04 1:02.57

	Lane 1	Lane 2	Lane 3	Lane 4	Lane 6
Backup	1:01.72	1:01.01	58.78	1:01.05	1:02.50

=>RACESUMMARY(byplace)<=====>(Race0013)=====

Sunday 07-14-XX 12:45.56

Colorado Time Systems

100 Meters			Place	Lane	Time
Event	20	Heat 1	1	3	58.99
			2	2	1:01.08
			3	4	1:01.15
(0013)	Sunday 07-14-XX	12:45.46	4	1	1:02.13 <1:01.72>
			5	6	1:02.57

The AOE Operator failed to notice that the swimmer in lane 5 failed to activate the touch pad at the 50m distance. There is also no backup time recorded for lane 5

If the swimmer does not activate the pad at a turn and the operator does not record it then the swimmer will not be placed. It is up to the referee to decide where that swimmer finished by consulting the manual placings. In the case above lane 5 time recorded for the second lap (02) is the time for the 100m distance so this is actually the primary time and will place lane 5 in second place. Note the AOE places swimmers on their primary time, if there is no primary time then that swimmer will not be placed.

In this instance, there is no Lane 5 Backup because the system thinks there is two lengths to go. The time at 2 lengths in the history would also be followed by an EARLY/ LATE indication if the T/K pressed the button at the end of the race.

The same race but the AOE operator has manually inserted a touch at the 50m distance

```

=====>RACEHISTORY<=====>(Race 0013 )=====
                                Sunday 07-14-XX      12:45.56

|-----<Lane Number
|      |-----Lengths
|      |      |-----Time

3) 02   30.00  4) 02   30.02  2) 02   30.09  1) 02   30.21  6) 02   30.50
5) 02           3) 04   58.99  5) 04   1:00.91  2) 04   1:01.08  4) 04   1:01.15
1) 04   1:02.13  6) 04   1:02.57

          Lane 1          Lane 2          Lane 3          Lane 4          Lane 5          Lane 6
Backup 1:01.72          1:01.01          58.78          1:01.05          Lane 5          Lane 6
          1:01.72          1:01.01          58.78          1:01.05          Lane 5          Lane 6

```

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=====>RACESUMMARY(by place)<===== (Race0013)=====
                                Sunday 07-14-XX      12:45.56

```

Colorado Time Systems

100 Meters			Place	Lane	Time
Event	20	Heat 1	1	3	58.99
			2	5	1:00.91
			3	2	1:01.08
			4	4	1:01.15
(0013)	Sunday 07-14-XX	12:45.46	5	1	1:02.13 <1:01.72>
			6	6	1:02.57

When the operator inserts a touch there is no time recorded as indicated above but the swimmer is placed second due to the primary time being recorded at the finish

**Modification of Primary Times**

The operator can modify the primary time by inserting the backup time in its place. The time will have an (\*) asterisk at the side of it, this an edited time.

1:23.56\*

Under the FINA rules a referee cannot accept such a time automatically as this has been used to determine the swimmer's place in the race. This time is not an automatic time, the Referee must consult the manual placings to ascertain where that swimmer was placed. The time awarded will be a manual time, amended as the case may be.

Colorado Time Systems

100 Meters		Place	Lane	Time
Event:	12 Heat: 7	1	3	58.44
		2	2	59.68
		3	4	1:02.21*
		4	1	1:02.31
[0023]	Saturday 07-13-XX 10:58.43	5	6	1:04.68
	(* =edited time)	6	5	1:06.88

=====  
The edited time may be the backup time

**Automatic Judging of Relays**

This piece of equipment judges the takeoff in relay events. It records the time difference from when the incoming swimmer touches and the outgoing swimmer leaves the starting platform

In the following example a decision has to be made by the referee as to which lanes' takeoff were legal.

A Referee should ascertain if the equipment has been calibrated before the start of the competition.

Equipment manufacturers calibrate equipment differently. Unless otherwise advised Omega is only illegal if the takeover time is more negative than -0.03 seconds (e.g-0.04). Any negative takeover time is considered illegal for Colorado. A definitive statement with regards to the accuracy of take over times recorded by Daktronics Timing as awaited from the manufacturer.

In the following case Lanes 4 & 5, being the only lanes with a negative takeover, should be disqualified.

====>RACE HISTORY<=====>Race0004<=====  
 Sunday 07-14-XX 10:10.34

200 METERS BOYS MEDLEY RELAY

Event: 4 Heat: 3

-----<Lane Number		-----<Lengths		-----<Time	
1) 02	31.54	1) LATE	.09	2) 02	33.94
2) LATE	.02	3) 02	36.46	2) LATE	.02
3) RELAY OK		5) 02	39.23	4) 02	40.90
4) LATE	.01	5) LATE	.03	4) 02	40.90
6) 02	43.53	6) LATE	.01	1) 04	1:14.82
1) LATE	.01	1) 04	1:14.82	1) LATE	.01
3) 04	1:24.36	3) LATE	.03	5) 04	1:30.14
2) LATE	.01	5) 04	1:30.14	5) LATE	.10
4) 04	1:35.88	6) 04	1:42.18	6) LATE	.02
1) LATE	.03	6) LATE	.02	1) 06	2:10.64
2) 06	2:20.12	2) LATE	.03	3) 06	2:26.08
3) LATE	.09	3) 06	2:26.08	3) LATE	.09
5) 06	2:31.98	5) EARLY	.04	4) 06	2:36.81
4) EARLY	.02	4) 06	2:36.81	4) EARLY	.02
6) RELAY OK		4) EARLY	.02	6) 06	2:35.80
1) 08	2:49.34	6) 06	2:35.80	6) 06	2:35.80
2) 08	2:52.80	2) 08	2:52.80	4) 08	2:53.01
4) 08	2:53.01	4) 08	2:53.01	3) 08	2:56.37
5) 08	2:57.04	3) 08	2:56.37	3) 08	2:56.37
6) 08	2:56.37	6) 08	2:56.37		

	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6
Backup	2: 49.15	2: 52.65	2:56.20	2:52.83	2:56.90	2:59.91

====> RelayJudging Exchanges<=====>Race0004<=====  
 Sunday 07-14-XX 10:10.34

200 METERS BOYS MEDLEY RELAY

Event: 4 Heat: 3

Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6
OK	EARLY	OK	EARLY	EARLY	EARLY

====>RELAY EXCHANGE SUMMARY<=====>Race 004<=====  
 Sunday 07-14- XX 10:10.34

200 METERS BOYS MEDLEY RELAY

Event: 4 Heat: 3

	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6
50m	+.09	+.02	+.00	+.01	+.03	+.01
100m	+.01	+.01	+.03	+.03	+.10	+.02
150m	+.03	+.03	+.09	-.02	-.04	+.00
Place	<1>	<2>	<4>	<3>	<5>	<6>
Finish	2:49.34	2:52.80	2:56.37	2:53.01	2:57.04	3:00.02
Xchange	OK	OK	OK	EARLY	EARLY	OK

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## Exercise 8

=>RACEHISTORY<=====>(Race0009)<=  
Sunday 07-14-XX      12:00.34

----Lane Number										
-----Lengths	START USED : keyboard									
-----Time										
4) 02    34.67	3) 02    34.70	5) 02    35.12	2) 02    36.06	6) 02    36.74						
1) 02    37.78	4) 04    1:10.45	3) 04    1:14.35	2) 04    1:16.33	6) 04    1:17.67						
5) 04    1:18.24	4) 06    1:50.87	3) 06    1:56.44	2) 06    1:59.01	6) 06    2:00.01						
5) 06    2:00.03	1) 04    2:01.87	4) 08    2:22.45	3) 08    2:26.45	5) 08    2:30.13						
6) 08    2:35.67	1) 06    2:40.40	1) EARLY 0.16	2) 08    2:40.54							

	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6
Backup	2:40.36	2:26.04	2:22.32	2:30.00	2:35.50

====>Race Summary (by place)===== Race 0009<=====  
Sunday 07-14-XX      12:00.34

200 Meters Backstroke		Place	Lane	Time
Event : 7	Heat: 4	1	4	2:22.45
		2	3	2:26.45 <2:26.04>
		3	5	2:30.13
(0009) Saturday 07-14-XX	12:00.34	4	6	2:35.67
<backup time>	(*edited time)	5	2	2:40.54
			1	

Given the above print out together with the manual placings and times below what is the official result?

### Manual Placings and Times

Place	Lane	Time
1	4	2:22.22
2	3	2:25.99
3	5	2:29.90
4	6	2:35.57
5	1	2:40.30
6	2	2:40.30

### Official Result

Place	Lane	Time
1	.....	.....
2.	.....	.....
3.	.....	.....
4.	.....	.....
5.	.....	.....
6.	.....	.....

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## Exercise 9

====>Race History<=====>Race 0003<====																							
Sunday 07-14-XX 09:45.67																							
-----Lane Number																							
-----Lengths																							
-----Time																							
5)	02	27.95	4)	02	28.80	8)	02	29.01	2)	02	29.09	7)	02	29.87	3)	02	30.17						
1)	02	30.24	4)	04	58.81	5)	04	58.84	8)	04	59.30	6)	02	59.31	6)	EARLY	.12						
7)	04	59.31	2)	04	1:01.29	1)	04	1:02.35	3)	04	1:02.49												
		<b>Lane 1</b>			<b>Lane 2</b>			<b>Lane 3</b>			<b>Lane 4</b>			<b>Lane 5</b>			<b>Lane 7</b>			<b>Lane 8</b>			
		Backup			1:02.23			1:01.10			1:02.40			58.71			58.80			59.25			59.25

## ====>RACE SUMMARY<=====>Race 0003<====

### Colorado Time Systems

100 METERS Freestyle		Place	Lane	Time
		1	4	58.81
		2	5	58.84
Event 4	Heat 3	3	8	59.30
		4	7	59.31
		5	2	1:01.29
		6	1	1:02.35
		7	3	1:02.49

### Official Result

Place	Lane	Time
1	.....	.....
2.	.....	.....
3.	.....	.....
4.	.....	.....
5.	.....	.....
6.	.....	.....
7.	.....	.....
8.	.....	.....

Explain how you came to your answer

.....

.....

.....

.....

.....

## Exercise 10

No disqualifications had been reported to the referee. The AOE operator informed the referee that the swimmer in lane 6 had failed to register a 50m time but in his opinion no other problems had occurred with the AOE

### Manual Results

Lane	Time	Placings:	
1	1:02.47	Judge A	5 4 8 6 7 2 1 3
2	1:01.39	Judge B	5 4 6 7 8 2 1 3
3	1:02.61	Referee	4 5 7 6 8 2 1 3
4	58.99		
5	58.95		
6	59.29		
7	59.38		
8	59.42		

### ====>RACE SUMMARY (by place)=====

Saturday 12-11-XX 18:39.28

#### Colorado Timing Systems

100 Meters				Place	Lane	Time
Event 16	Heat 5			1	4	58.81
				2	5	58.84
				3	8	59.30
				4	7	59.31
(0023)	Saturday	12-11-XX	18: 39.28	5	2	1:01.29
				6	1	1:02.35
				7	3	1:02.49

### ====>Splits Summary<=====

Saturday 12-11-XX

#### Colorado Timing Systems

100 Meters								
Event 16 Heat 5								
	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7	Lane 8
50 Meter	30.24	29.09	30.17	28.80	27.95	59.31	28.97	29.01
100 Meter	32.11	32.20	32.32	30.01	30.89		30.34	30.29
50 Meter	30.24	29.09	30.17	28.80	27.95	59.31	28.97	29.01
	1:02.35	1:01.29	1:02.49	58.81	58.84		59.31	59.30
Place	<6>	<5>	<7>	<1>	<2>		<4>	<3>
	1:02.35	1:01.29	1:02.49	58.81	58.84		59.31	59.30

Official Result

Place	Lane	Time
1.	.....	.....
2.	.....	.....
3.	.....	.....
4.	.....	.....
5.	.....	.....
6.	.....	.....
7.	.....	.....
8.	.....	.....

Explanation

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# Exercise 11

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====> RACE HISTORY<=====Race 0002<=
                                     Saturday 06-01-XX 19:08.00
                                     START USED : keyboard
Backup   Lane 1  Lane 2  Lane 3  Lane 4  Lane 5  Lane 6  Lane 7  Lane 8
        25.86  26.61  24.99  26.22  24.97  25.90  25.49  25.55
    
```

```

====> RACE SUMMARY(by place)<=====Race 0002<=
                                     Saturday 06-01-XX 19:08.00
                                     Colorado Time Systems
                                     50 METERS
                                     Event 02 heat 01
                                     Place  Lane  Time
                                     1      3     25.10
                                     2      5     25.18
                                     3      8     25.55
                                     4      7     25.56
                                     5      1     25.90
Saturday 06-01-XX 19:09.42          6      6     26.00
                                     7      4     26.20
                                     8      2     26.30 <26.61>
    
```

Manual Results			Official Result		
Place	Lane	Time			
1	5	25.95	1	.....	.....
2	3	26.00	2	.....	.....
3	7	26.42	3	.....	.....
4	8	26.51	4	.....	.....
5	1	26.86	5	.....	.....
6	6	26.98	6	.....	.....
7	4	27.17	7	.....	.....
8	2	27.29	8	.....	.....

What is the reason for the two times being recorded for lane 2 in the race summary?

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**Exercise 12**

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===== > RACE HISTORY <===== > RACE 0003 <=====
                                Saturday 12-12-XX 16:08.00
                                START USED :Keyboard

Backup      Lane 1  Lane 2  Lane 3  Lane 4  Lane 5  Lane 6  Lane 7  Lane 8
            24.87  25.62  24.00  25.23  23.98  24.91  24.50  24.56
    
```

```

===== > RACE SUMMARY (by place) <===== > Race 0003 <=====
                                Saturday 12-12-XX 16:08.00

                                Colorado Time Systems

                                50 METERS
                                Event 03 Heat 04

Saturday 12-12-XX 16:46.42
(* edited time)

                                Place  Lane  Time
                                1      3    24.11
                                2      5    24.19
                                3      7    24.50*
                                4      8    24.57
                                5      1    24.91
                                6      6    25.01
                                7      4    25.21
                                8      2    25.31 <25.62>
    
```

Manual Result			Official Result		
Place	Lane	Time	Place	Lane	Time
1	5	24.06	1	.....	.....
2	3	24.11	2	.....	.....
3	8	24.49	3	.....	.....
4	7	24.50	4	.....	.....
5	1	25.57	5	.....	.....
6	6	25.99	6	.....	.....
7	4	26.18	7	.....	.....
8	2	26.30	8	.....	.....

Why is there an asterisk at the side of lane 7 in the results summary?

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### Exercise 13

====>RACE HISTORY<=====> Race 021 <==  
 Monday 10-14-XX 12:11.47

Lane Number		Lengths		Time										
3)	02	29.13	5)	02	29.76	4)	02	30.02	2)	02	30.07	1)	02	30.17
6)	02	30.38	3)	04	59.55	2)	04	1:01.10	1)	04	1:01.61	4)	04	1:01.62
6)	04	1:02.41	5)	04	1:02.91									

	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6
Backup	1:01.35	1:01.09	59.52	1:01.09	1:02.86	1:02.40

====>RACE SUMMARY<=====> Race 021 <==  
 Monday 10-14-XX 12:11.47

			Colorado Time Systems		
100METERS			Place	Lane	Time
Event: 34 Heat: 1			1	3	59.55
			2	2	1:01.10
			3	1	1:01.61
			4	4	1:01.62<1:01.09>
(0021) Monday 10-14-XX 12:11.47			5	6	1:02.41
			6	5	1:02.91

#### Manual Placings

Judge 1	3 4 2 1 6 5
Judge 2	3 4 2 1 6 5
Referee	3 4 2 1 6 5

#### Manual Times

Lane	Time
1	1:01.51
2	1:01.05
3	59.48
4	1:01.06
5	1:08.85
6	1:02.85

Official Result

Place	Lane	Time
1.	.....	.....
2.	.....	.....
3.	.....	.....
4.	.....	.....
5.	.....	.....
6.	.....	.....

Explanation

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## Exercise 14

=====> RACE SUMMARY (by place)<=====>Race0022<=  
 Saturday 07-20-XX 19:46.42

### Colorado Time Systems

100 METERS		Place	Lane	Time
Event 27	Heat 02	1	6	2:09.55<2:09.22>
		2	2	2:11.10
		3	4	2:12.18
		4	1	2:13.61*
[0022]	Saturday 07-20-XX 19:46.42	5	3	2:13.71
	[* edited time <backup time>]	6	5	2:14.91

#### Manual Results

Place	Lane	Time
1	6	2:09.26
2	2	2:11.00
3	4	2:12.27
4	3	2:11.64
5	1	2:13.72
6	5	2:14.88

#### Official Result

Place	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....

#### Explanation

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**Exercise 15**

=====> RACE HISTORY <=====> Race 0030 <====

Saturday 07-27-XX 20:46.31

START USED : keyboard

|-----Lane Number  
| |-----Lengths  
| | |-----Time

3) 02 29.13 5) 02 29.76 4) 02 30.02 2) 02 30.07 1) 02 30.17 6) 02 30.38  
3) 04 59.55 2) 04 1:01.10 4) 04 1:01.17 1) 04 1:01.61 6) 04 1:02.41 5) 04 1:02.91

Backup	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6
	1:01.25	1:01.09	59.52	1:01.45	1:02.86	1:02.40

=====> RACE SUMMARY (by place) <=====> Race 0030 <====

Saturday 07-27-XX 20:46.42

Colorado Time Systems

100 METERS			Place	Lane	Time
Event 34 Heat 01			1	3	0:59.55
0030  Saturday 07-27-XX 20:46.42			2	2	1:01.10
			3	4	1:01.17
			4	1	1:01.61
			5	6	1:02.41
			6	5	1:02.91

Manual Results

Place	Lane	Time
1	3	59.61
2	4	1:01.17
3	2	1:01.23
4	1	No Time
5	6	1:02.37
6	5	1:02.96

Official result

Place	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....

Explanation

.....  
 .....  
 .....  
 .....  
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**Exercise 16**

=====> RACE HISTORY<=====>Race 0013<=====  
 Monday 11-04-XX 11:19.24

|-----<Lane number  
 | |-----< Lengths  
 | | |-----< Time

3) 02 39.70 4) 02 44.50 2) 02 45.49 5) 02 46.09 1) 02 46.38 6) 02 46.60

	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6
Backup	45.95	45.49	39.68	44.37	46.04	46.71

=====>RACE SUMMARY (by place)<=====>Race 0013<=====  
 Monday 11-04-XX 11:19.24

Colorado Time Systems

50 METERS				Place	Lane	Time
Event 23	Heat 01			1	3	39.70
				2	4	44.50
				3	2	45.49
				4	5	46.06
[0013]	Monday 11-04-XX	11:19.24		5	1	46.38 <45.95>
	[ <backup time >]			6	6	46.60

Manual Results

Official Result

Place	Lane	Time	Place	Lane	Time
1	3	39.46	1	.....	.....
2	4	44.21	2	.....	.....
3	2	45.44	3	.....	.....
4	1	45.67	4	.....	.....
5	5	46.00	5	.....	.....
6	6	46.51	6	.....	.....

Explanation

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## Exercise 17

====> Race History<=====						====>Race 0002<====	
						Saturday 12-08-XX 16:08.00	
	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	
Backup	44.63	42.76	42.69	43.14		42.78	

===== >Race Summary (by place) <=====						====>Race 0002<====	
						Saturday 12-08-XX 16:08.00	
Colorado Time Systems							

50 METERS			Place	Lane	Time
			1	3	42.66
			2	6	42.74
Event	15	Heat 04	3	2	42.80
			4	4	43.12
			5	1	44.61
			6		

Manual Results			Official result		
Place	Lane	Time	Place	Lane	Time
1	3	42.64	1	.....	.....
2	6	42.68	2	.....	.....
3	5	42.69	3	.....	.....
4	2	42.74	4	.....	.....
5	4	43.02	5	.....	.....
6	1	44.51	6	.....	.....

### Explanation

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Summary of printout indications between OSM6 & Colorado

<b>OMEGA OSM6/Ares</b>	<b>COLORADO</b>
<b>AOE not started by starting signal</b>	
EVENT 00003 HEAT P L.L           13:22:54.02M A.A.L        07/10/XX C.N.A E.E.P	START USED: keyboard
<b>Lap Time not recorded by pad</b>	
EVENT 00003 HEAT P L.L           13:22:54.02M A.A.L        07/10/XX C.N.A E.E.P  1.4.1        1:24.20M	<pre>           ----- Lane Number           ----- Lengths           ----- Time           4) 02         </pre>
<b>Finish not recorded</b>	
EVENT 00003 HEAT P L.L           13:22:54.02M A.A.L        07/10/XX C.N.A E.E.P  1.4.2        3:36.06M	Finish cannot be simulated from the keyboard <3:04.48> <backup time>
<b>Edited Time</b>	
OSM6 3:24.78* ARES 3:24.78B(ackup) ARES 3.24.78E(dited)	3:24.78* (* = edited time)
<b>Difference of 0.3 between AOE and semi AOE</b>	
Not available(OSM6) Time highlighted on computer screen (Ares)	1:56.49 <1:56.18> <backup time>
<b>No primary time</b>	
:--:--	<2:46.79> <backup time>

# OMEGA OSM6

## OMEGA PRINTOUT

Example printout – set to 1/1000<sup>th</sup> second and to 1/100<sup>th</sup> second

EVENT :	010	HEAT :	02	EVENT :	010	HEAT :	02
P		10.09:20.25		P		10.09:20.25	
L	L			L	L		
A	A	L	01/04/XX	A	A	L	01/04/XX
C	N	A		C	N	A	
E	E	P	RESULT	E	E	P	RESULT
1	2	2	2:41.656	1	2	2	2:41.65
2	3	2	2:42.542	=2	3	2	2:42.54
3	4	2	2:42.547	=2	4	2	2:42.54
4	6	2	2:45.611	4	6	2	2:45.61
5	5	2	2:50.622	5	5	2	2:50.62
6	1	2	2:50.752	6	1	2	2:50.75

### Explanation of an Omega AOE timing slip

	EVENT	004	HEAT	: 03	
	P				11 . 10 : 42. 20 ← Time
	L	L			
	A	A	L	02/06/XX ← Date	
	C	N	A		
	E	E	P	BACKUP	
	1	4	1	1: 09. 87	
	2	2	1	1: 11. 08	
	3	3	1	1: 11. 32	
	1	4	2	2: 24. 09	
	2	2	2	2: 24. 50	
	3	3	2	2: 25. 50	
	1	4	2	2: 24. 09	
		4	2	2: 24. 17	
	2	2	2	2: 24. 50 M	
		2	2	2: 24. 62	
	3	3	2	2: 25. 32 *	
		3	2	2: 25. 32	

Laps completed

Backup time

M ---- time inserted by operator

\* ---- edited time i.e. backup time

## System Started by the Operator

In the event of the system not started by the starting signal then if told to do so the operator can set the system in motion. This applies to both Omega and Colorado systems. This then enables the places to be recorded but the times cannot be used and the manual times obtained from the lane timekeepers will be required. To identify that this has happened the following will be found on the printed slip for that race.

Event : 019 Heat : 03

P 10 . 53: 25 M ← System started by the operator  
 L L  
 A A

### Example

P  
 L L  
 A A L  
 C N A Backup  
 E E P

1	4	1	1:05.57
	4	1	1:05.63
2	2	1	1:06.16
	2	1	1:06.26
3	5	1	1:06.89
	5	1	1:06.99
4	6	1	1:07.24
	6	1	1:07.29
5	1	1	1:07.38
	1	1	1:07.46
6	3	1	1:01.64M
	3	1	1:06.19

### Manual Results

Place	Lane	Time
1	4	1:05.44
2	3	1:06.05
3	2	1:06.12
4	5	1:06.80
5	1	1:07.32
6	6	1:07.34

Official Result		
Place	Lane	Time
1	4	1:05.44
2	3	1:06.05
3	2	1:06.12
4	5	1:06.80
5	6	1:07.33 RD
6	1	1:07.33 RD

**Exercise 18**

<b>P</b>			
<b>L</b>	<b>L</b>		
<b>A</b>	<b>A</b>	<b>L</b>	<b>backup</b>
<b>C</b>	<b>N</b>	<b>A</b>	
<b>E</b>	<b>E</b>	<b>P</b>	
<b>1</b>	<b>4</b>	<b>2</b>	<b>2:14.11</b>
	<b>4</b>	<b>2</b>	<b>2:14.16</b>
<b>2</b>	<b>5</b>	<b>2</b>	<b>2:16.09</b>
	<b>5</b>	<b>2</b>	<b>2:16.09</b>
<b>3</b>	<b>3</b>	<b>2</b>	<b>2:17.23</b>
	<b>3</b>	<b>2</b>	<b>2:17.06</b>
<b>4</b>	<b>2</b>	<b>1</b>	<b>2:15.25</b>
	<b>2</b>	<b>1</b>	<b>2:15.18</b>

Manual results

Place	Lane	Time
1	4	2:13.99
2	2	2:15.31
3	5	2:15.99
4	3	2:17.10

Official Result		
Place	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....

Complete the official result

### Exercise 19

Event 19 Heat 01

P L A C E	L A N E	L A N E	Result	Place	Lane	Time
1	4	2	00.58.20	1	.....	.....
2	2	2	00.58.46	2	.....	.....
3	1	2	00.59.15	3	.....	.....
4	3	2	00.59.20	4	.....	.....
5	6	2	01.00.20	5	.....	.....
6		-	... ..	6	.....	.....

### Manual Results

Place	Lane	Time
1	4	58.15
2	2	58.40
3	5	59.20
4	1	59.25
5	3	59.40
6	6	01:00.10

### Exercise 20

At the end of a race you are given the following information on an AOE slip and confirm that the AOE is operating correctly. Complete the official result

Event 20		Heat 02					
P L A C E	L A N E	L A N E	P O S T	RESULT	Place	Lane	Time
1	3	1	1	00:17.254	1	.....	.....
2	1	1	1	00:18.113	2	.....	.....
3	4	1	1	00:18.205	3	.....	.....
4	6	1	1	00:18.208	4	.....	.....
5	2	1	1	00:19.102	5	.....	.....
6	5	1	1	00:19.113	6	.....	.....

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**Exercise 21**

In this race the back-up times are available along with manual times. From the information provided give the official result.

**Event 21 Heat 03**

**P**

**L**

**L**

**A**

**A**

**L**

**C**

**N**

**A**

**E**

**E**

**P**

**Back up**

**Manual Results**

<b>1</b>	<b>5</b>	<b>2</b>	<b>00. 56. 24</b>			
	<b>5</b>	<b>2</b>	<b>00. 56. 29</b>	<b>Place</b>	<b>Lane</b>	<b>Time</b>
<b>2</b>	<b>3</b>	<b>2</b>	<b>00. 56. 26</b>	<b>1</b>	<b>5</b>	<b>56.32</b>
	<b>3</b>	<b>2</b>	<b>00. 56. 39</b>	<b>2</b>	<b>3</b>	<b>56.30</b>
<b>3</b>	<b>4</b>	<b>2</b>	<b>00. 57. 28</b>	<b>3</b>	<b>6</b>	<b>57.26</b>
	<b>4</b>	<b>2</b>	<b>00. 57. 39</b>	<b>4</b>	<b>4</b>	<b>57.31</b>
<b>4</b>	<b>1</b>	<b>2</b>	<b>00. 57. 31</b>	<b>5</b>	<b>1</b>	<b>57.36</b>
	<b>1</b>	<b>2</b>	<b>00. 57. 37</b>	<b>6</b>	<b>2</b>	<b>57.56</b>
<b>5</b>	<b>2</b>	<b>2</b>	<b>00. 57. 46</b>			
	<b>2</b>	<b>2</b>	<b>00. 57. 55</b>			
<b>6</b>	<b>6</b>	<b>2</b>	<b>01. 03. 13M</b>			
	<b>6</b>	<b>2</b>	<b>00. 57. 29</b>			

**Official Result**

<b>Place</b>	<b>Lane</b>	<b>Time</b>
<b>1</b>	.....	.....
<b>2</b>	.....	.....
<b>3</b>	.....	.....
<b>4</b>	.....	.....
<b>5</b>	.....	.....
<b>6</b>	.....	.....

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**Exercise 22**

In a relay event the starting blocks are fitted with electronic takeoff equipment. The slips you have received, heat results and the lap 2 takeoffs shown below have been confirmed by yourself as satisfactory, and the equipment has functioned correctly.

The turn judge has reported an incorrect takeoff on lane 1 at the end of the second lap.

Give the official result.

Event 22 Heat 04			
P	L	A	RESULT
C	N	A	
E	E	P	
	1	3 2	00.52.61
	2	6 2	00.53.40
	3	4 2	00.54.01
	4	2 2	00.55.11
D		3 2	+00.10
	5	7 2	00.56.20
D		6 2	+00.14
D		4 2	-00.11
	6	1 2	00.56.40
	7	5 2	00.57.23
D		2 2	+00.30
	8	8 2	00.57.80
D		7 2	+00.28
D		1 2	00.00
D		5 2	+00.21
D		8 2	+00.32

Event 22 Heat 04			
P	L	A	Result
C	N	A	
E	E	P	
	1	3 4	01.45.26
	2	2 4	01.45.63
	3	6 4	01.46.35
	4	4 4FD	01.47.01
	5	5 4	01.47.26
	6	8 4	01.47.67
	7	7 4	01.48.10
	8	1 4	01.49.21

Official Result

Place	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....
7	.....	.....
8	.....	.....

**Exercise 23**

The AOE equipment has provided the backup times.

Complete the official result.

Event 24			Heat 05
<b>P</b>			
<b>L</b>	<b>L</b>		
<b>A</b>	<b>A</b>	<b>L</b>	
<b>C</b>	<b>N</b>	<b>A</b>	
<b>E</b>	<b>E</b>	<b>P</b>	<b>BACK UP</b>
<b>1</b>	<b>1</b>	<b>2</b>	<b>00.52.14</b>
	<b>1</b>	<b>2</b>	<b>00.52.30</b>
<b>2</b>	<b>4</b>	<b>2</b>	<b>00.52.41</b>
	<b>4</b>	<b>2</b>	<b>00.52.50</b>
<b>3</b>	<b>3</b>	<b>2</b>	<b>00.53.76</b>
	<b>3</b>	<b>2</b>	<b>00.53.87</b>
<b>4</b>	<b>2</b>	<b>2</b>	<b>00.53.84</b>
	<b>2</b>	<b>2</b>	<b>00.53.87</b>
<b>5</b>	<b>5</b>	<b>2</b>	<b>00.53.87*</b>
	<b>5</b>	<b>2</b>	<b>00.53.87</b>
<b>6</b>	<b>6</b>	<b>2</b>	<b>00.56.03</b>
	<b>6</b>	<b>2</b>	<b>00.56.08</b>

Manual Placings

Place	Lane	Time
1	1	52.23
2	4	52.58
3	3	53.70
4	5	53.73
5	2	53.92
6	6	56.40

Official Result

Place	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....

**Exercise 24**

The AOE equipment did not start when the starting signal was given, but was started by the AOE operator.

Complete the official result for the race

Event 25			Heat 06
<b>P</b>			
<b>L</b>	<b>L</b>		
<b>A</b>	<b>A</b>	<b>L</b>	
<b>C</b>	<b>N</b>	<b>A</b>	
<b>E</b>	<b>E</b>	<b>P</b>	<b>Result</b>
<b>1</b>	<b>5</b>	<b>1</b>	<b>00.20.00</b>
<b>2</b>	<b>4</b>	<b>1</b>	<b>00.21.32</b>
<b>3</b>	<b>3</b>	<b>1</b>	<b>00.21.50</b>
<b>4</b>	<b>1</b>	<b>1</b>	<b>00.21.53</b>
<b>5</b>	<b>2</b>	<b>1</b>	<b>00.22.11</b>
<b>6</b>	<b>6</b>	<b>1</b>	<b>00.23.02</b>

Manual Results		
Place	Lane	Time
1	5	56.09
2	3	57.47
3	4	57.50
4	2	58.30
5	1	58.33
6	6	59.40

Official Result

Place	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....

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**Exercise 25**

In this event lane 6 received no primary, backup or manual time.

Complete the official result.

Event 26			Final
<b>P</b>			
<b>L</b>	<b>L</b>		
<b>A</b>	<b>A</b>	<b>L</b>	
<b>C</b>	<b>N</b>	<b>A</b>	
<b>E</b>	<b>E</b>	<b>P</b>	<b>Result</b>
<b>1</b>	<b>4</b>	<b>2</b>	<b>00.40.14</b>
<b>2</b>	<b>3</b>	<b>2</b>	<b>00.41.10</b>
<b>3</b>	<b>5</b>	<b>2</b>	<b>00.42.29</b>
<b>4</b>	<b>2</b>	<b>2</b>	<b>00.42.50</b>
<b>5</b>	<b>1</b>	<b>2</b>	<b>00.44.10</b>
<b>6</b>	<b>.</b>	<b>.</b>	<b>.. .. ..</b>

Manual Results		
Events 26	Final	
Place	Lane	Time
1	4	40.11
2	6	.
3	3	41.03
4	5	42.31
5	2	42.56
6	1	44.12

**Official Result**

Place	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....

**Exercise 26**

The following are the results of the two heats of an event where only manual times and places are available, owing to the malfunction of the AOE.

The swimmer in lane 5 was disqualified for a faulty start

Give the official results

Placing

Judge A 4 3 5 6 2 1  
 Judge B 4 3 5 1 2 6

Referee 4 3 5 2 1 6

Times:

Swimmer	Lane	Time
A	1	1:06.01
B	2	1:05.98
C	3	1:05.38
D	4	1:05.29
E	5	1:05.52
F	6	1:06.09

Official Result

Place	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....

The swimmer in lane 1 did not complete the course.

Placing

Judge A 3 6 2 4 5  
 Judge B 6 3 2 5 4

Referee 3 6 2 5 4

Times

Swimmer	Lane	Time
G	1	No time
H	2	1:09.83
I	3	1:08.21
J	4	1:09.82
K	5	1:09.78
L	6	1:08.17

Official Result

Place	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....

Place the swimmers into a final selecting two reserves

Final	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6
Swimmer						

Reserves 1<sup>st</sup> .....

2<sup>nd</sup> .....

### Exercise 27

In the boys 100m Butterfly event both the AOE and manual results are given. Both turn judges report a stroke violation for lane 2 which is accepted by the referee.

Decide and record the official result

**Event 110 Heat 08 14-04-03**  
**16:23.45.01 M**

**Manual Result**

				<b>Place</b>	<b>Lane</b>	<b>Time</b>
<b>P</b>				<b>1</b>	<b>6</b>	<b>1:04.26</b>
<b>L</b>	<b>L</b>			<b>2</b>	<b>8</b>	<b>1:05.31</b>
<b>A</b>	<b>A</b>	<b>L</b>		<b>3</b>	<b>2</b>	<b>1:05.73</b>
<b>C</b>	<b>N</b>	<b>A</b>		<b>4</b>	<b>7</b>	<b>1:08.79</b>
<b>E</b>	<b>E</b>	<b>P</b>	<b>Result</b>	<b>5</b>	<b>5</b>	<b>1:08.88</b>
<b>1</b>	<b>6</b>	<b>2</b>	<b>1:04.335</b>	<b>6</b>	<b>3</b>	<b>1:08.99</b>
<b>2</b>	<b>8</b>	<b>2</b>	<b>1:05.386</b>	<b>7</b>	<b>1</b>	<b>1:13.15</b>
<b>3</b>	<b>2</b>	<b>2</b>	<b>1:05.854</b>	<b>8</b>	<b>4</b>	<b>1:13.18</b>
<b>4</b>	<b>5</b>	<b>2</b>	<b>1:08.933</b>			
<b>5</b>	<b>7</b>	<b>2</b>	<b>1:08.937</b>			
<b>6</b>	<b>3</b>	<b>2</b>	<b>1:09.335</b>			
<b>7</b>	<b>4</b>	<b>2</b>	<b>1:13.154</b>			
<b>8</b>	<b>1</b>	<b>2</b>	<b>1:13.233</b>			

Official Result

Place	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....
7	.....	.....
8	.....	.....

**Exercise 28**

Determine the official result of the results of the printout and manual times below. Explain how you came to your decision.

				Manual Result		
P	L			Place	Lane	Time
A	A	L		1	4	2:33.30
C	N	A		2	5	2:35.50
E	E	P	<b>Backup</b>	3	2	2:36.21
				4	1	2:36.21
1	4	2	<b>2:33.39</b>	5	6	2:41.00
	4	2	<b>2:33.56</b>	6	7	2:41.01
2	2	2	<b>2:36.34</b>	7	3	2:40.99
	2	2	<b>2:36.37</b>	8	8	2:46.45
3	7	2	<b>2:41.01</b>			
	7	2	<b>2:41.25</b>			
4	6	2	<b>2:41.05</b>			
	6	2	<b>2:41.19</b>			
5	3	2	<b>2:41.21</b>			
	3	2	<b>2:41.20</b>			
6	8	2	<b>2:46.72</b>			
	8	2	<b>2:46.76</b>			
	1	2	-----			
	1	2	<b>2:36.33</b>			
7	5	1	<b>2:35.54</b>			
	5	1	<b>2:35.75</b>			

  

			Official Result		
Place	Lane		Place	Lane	Time
1	.....		1	.....	.....
2	.....		2	.....	.....
3	.....		3	.....	.....
4	.....		4	.....	.....
5	.....		5	.....	.....
6	.....		6	.....	.....
7	.....		7	.....	.....
8	.....		8	.....	.....

Explanation

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## OMEGA ARES 21

Omega timing systems have superseded the OSM6 timing system with a replacement PC based timing system - ARES (Advanced Result Entry Station).

Whilst the ARES has increased functionality beyond the OSM6 its basic function is the same. It places swimmers based on the elapsed time between the starting signal and the swimmer exerting sufficient pressure on the touchpad at the end of the race to stop the timer.

Printouts from ARES can be in two forms.

- A till roll style similar to the OSM6 printed on plain paper rather than the grey thermopaper. or
- A4 via a conventional text file sent to a PC printer.

The below example illustrates a typical A4 style layout. This would normally be laid out within a landscape format. The example also includes indicators of operator or backup usage:

### ARES print out - A4 layout

#### National Age Groups

#### 35 Final Boys 50m Freestyle

Started at 16:15:24.86M<-----Manual Start

Dist	Lane1	Lane2	Lane3	Lane4	Lane5	Lane6	Lane7	Lane8
50m	32.48	34.25	33.45E	35.62	38.34	36.75B	39.41	40.23

Rank	Lane	Time	Backup time	
1	1	32.48	----	No backup time recorded
2	3	33.45E	34.10	E denotes edited time manually inputted
3	2	34.25	34.30	
4	4	35.62	35.71	
5	6	36.75B	36.75	B backup time inserted as a primary time
6	5	38.34	38.45	
7	7	39.41	39.53	
8	8	40.23	----	

Dependant upon the version of software in use, should the difference between the primary and back up times exceed .3 second the Rank lane and times line will be highlighted

The following example shows the result of a 100m event. Intermediate distance times are entered line by line dependant upon the pool configuration and installation of touch pads

**Event 45**                      **Heat 2**  
**Started at**                    **12:10:11.45**

<b>Dist</b>	<b>Lane 1</b>	<b>Lane 2</b>	<b>Lane 3</b>	<b>Lane 4</b>	<b>Lane 5</b>	<b>Lane 6</b>	<b>Lane 7</b>	<b>Lane 8</b>
100m	-----	1:04.67	1:00.29	1:00.69	1:00.24E	59.34	1:00.36	-----

<b>Rank</b>	<b>Lane</b>	<b>Time</b>	<b>Backup time</b>
1	6	59.34	59.56
2	3	1:00.29	1:00.30
3	5	1:00.34E	1:00.28
4	7	1:00.36	1:01.43
5	4	1:01.69	1:01.68
6	2	1:04.67	-----

Manual Placings	
Judge 1	635742
Judge 2	653742
Referee	653742

**Official Result**

Place	Lane	Time
1	6	59.34
2	5	1:00.28
3	3	1:00.29
4	7	1:00.36
5	4	1:01.69
6	2	1:04.67

The edited time for lane 5 cannot be used. The Manual result placed lane 5 second. The swimmer therefore is placed second, in this instance the Backup time for lane 5 of 1:00.28 is consistent with this placing and is inserted. If for example the backup time was 1:00.30 then lane 5 would still be placed second but reference made to the handheld time if that was consistent with the placing it would be used. If neither 'real' time were acceptable then a time equal to that with which it was in conflict either 1:29.00 or 1:00.36 would be allocated with an RD (Referees Decision) at the side. Whilst a time could be manually inserted the RD would have to be a written remark. It cannot be generated by the system.

The following example displays the information provided from a 800m race in a 50m pool with pads installed only at the start/finish end. Lanes 1,2,7 & 8 were not in use.

**Event 67                      Womens 800m Freestyle**

**Started at                      10:19:57.30**

<b>Dist</b>	<b>Lane 1</b>	<b>Lane 2</b>	<b>Lane 3</b>	<b>Lane 4</b>	<b>Lane 5</b>	<b>Lane 6</b>	<b>Lane 7</b>	<b>Lane 8</b>
100m	--	--	1:05.43	1:06.09	1:07.34	1:06.94	--	--
200m	--	--	2:18.01	2:20.55	2:19.85	2:18.79	--	--
300m	--	--	3:32.26	3:35.02	3:33.45	3:32.53	--	--
400m	--	--	4:47.85	4:49.90	4:47.44	4:45.92	--	--
500m	--	--	6:04.95	6:04.49	6:01.66	5:59.61	--	--
600m	--	--	7:21.16	7:28.58	7:15.94	7:14.22	--	--
700m	--	--	8:37.63	8:36.50	8:29.55	8:29.98	--	--
800m	--	--	9:52.92	9:49.01	9:40.76	9:42.49	--	--

<b>Rank</b>	<b>Lane</b>	<b>Time</b>	<b>Backup time</b>
1	5	9:40.76	9:40.94
2	6	9:42.49	9:42.47
3	4	9:49.01	9:49.11
4	3	9:52.92	9:52.98

**Exercise 29**

The extract from a result below are from an event. It was suggested by the AOE operator that there could have been a malfunction of the system on Lane 4 at the finish.

Rank	Lane	Time	Backup	Manual Result	
1	5	32.81	32,83	Finish Judge A	567834
2	6	33.61	33.75	Finish Judge B	567483
3	7	33.63	33.71	Referee	576843
4	8	33.87	33.96		
5	3	34.47	34.50		
6	4	34.60	33.79	Hand held time for Lane 4	33.70

Using the information provided

- i. Decide the official result
- ii. Explain how you reached your decision

I	Official Result
Place	Lane Time
1	.....
2	.....
3	.....
4	.....
5	.....
6	.....

ii.....  
.....  
.....  
.....  
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**Exercise 30**

The result of the boys 50m Butterfly are given below. There is only one timekeeper operating on each lane

Dist	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7	Lane 8
50m	56.74B	1:09.19	47.41	34.16E	31.39	41.67	56.82	34.17

Rank	Lane	Time	Backup time
1	5	31.39	-----
2	4	34.16E	34.25
3	8	34.17	34.25
4	6	41.67	41.64
5	3	47.41	47.42
6	1	56.74B	56.74
7	7	56.82	-----
8	2	1:09.19	1:09.20

Manual Placings	
Judge1	58463712
Judge 2	54863712
Referee	58463172
Manual Times	
Lane 1	56.72
Lane 2	1:09.10
Lane 3	47.40
Lane 4	33.99
Lane 5	31.88
Lane 6	41.63
Lane 7	56.66
Lane 8	34.68

i. Determine the official result

Place	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....
7	.....	.....
8	.....	.....

ii. What do the letters E and B indicate at the side of the time for that swimmer

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.....

iii. Explain briefly how you arrived at your result

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**Exercise 31**

The following results are from a 100m freestyle event

Event 81		Heat 2						
Started at		10:15:06M						
Dist	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7	Lane 8
100m	58.52	58.50	56.41	57.00	53.30E	53.27	--	--

Rank	Lane	Time	Backup time
1	6	53.27	53.19
2	5	53.30E	53.28
3	3	56.41	56.40
4	4	57.00	56.92
5	2	58.50	58.29
6	1	58.52	58.50

Manual Placings		
Place	Lane	Time
1	6	1:00.26
2	5	1:00.27
3	3	1:02.41
4	4	1:02.48
5	1	1:04.13
6	2	1:04.15

i. determine the official result

Rank	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....

ii. What does the letter E indicate at the side of Lane 5

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iv. Explain briefly how you arrived at your result

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**Exercise 32**

Determine the official result from the information handed to the referee below.  
 Explain briefly how you arrive at your result

Event 21		Heat 8						
Started at		09:00:26 M						
Dist	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7	Lane 8
50m	--	42.86	40.42	43.34	47.35	48.01	--	--

Rank	Lane	Time	Backup time
1	3	40.42	40.51
2	2	42.86	42.80
3	4	43.34	43.37
4	5	47.35	47.30
5	6	48.07	47.92
6	1	-----	44.21

Manual Placings	
Judge 1	321456
Judge 2	321456
Referee	324156
Manual Times	
Lane	Time
1	53.29
2	50.45
3	50.14
4	53.43
5	No Time
6	58.62

Determine the official result

Rank	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....

Explanation

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### Exercise 33

The result of a Girls 100m Breaststroke race are given below. Lane 6 did not complete the course.

Event 01		Heat 01						
Started at		10:04:65						
Dist	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7	Lane 8
50m	--	32.475	33.001	34.146	33.478	33.716	--	--
100m	--	1:06.423	1:06.420	1:07.192	1:07.206	-----	--	--

Rank	Lane	Time	Backup time
1	3	1:06.420	-----
2	2	1:06.423	-----
3	4	1:07.192	-----
4	5	1:07.206	-----

i. Determine the official result

Rank	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....

ii What action if any should the referee take prior to the start of the next race?

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**Exercise 34**

Below are the results of the Womens 400m Freestyle race

Event 301		Heat 02						
Started at		10:05:13						
Dist	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7	Lane 8
100m	--	--	1:05.43	1:06.90	1:07.34	1:06.94	--	--
200m	--	--	2:18.01	2:20.55	2:19.85	2:18.17	--	--
300m	--	--	3:32.36	4:49.90	3:33.45	3:32.53	--	--
400m	--	--	4:47.45	-----	4:47.44	4:50.57	--	--

Rank	Lane	Time	Backup time
1	5	4:47.44	4:47.51
2	3	4:47.45	4:47.99
3	6	4:50.57	4:50.67
4	4	-----	4:50.00

**Manual Placings**

**Official Placing 3546**

i. Determine the official result

Rank	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....

ii Explain briefly how you arrived at your result

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### Exercise 35

The result of the Mens 400m Individual Medley is shown below.

Event 201		Heat 05						
Started at		09:01.20.34						
Dist	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7	Lane 8
100m	1:02.20	1:00.32	1:00.94	59.64	1:01.00	59.70	58.82	58.95
200m	2:07.94	2:03.34	3:09.20	2:03.01	2:05.19M	2:03.03	2:02.61	2:03.30
300m	3:14.72	3:07.73	4:12.21	3:06.76	3:08.86	3:07.18	3:06.07	3:06.98
400m	4:22.33	4:13.39	-----	4:10.31	4:12.24	4:10.89	4:10.27E	4:10.70

Rank	Lane	Time	Backup time
1	7	4:10.27E	4:10.31
2	4	4:10.31	4:10.34
3	8	4:10.70	4:10.79
4	6	4:10.89	4:10.98
5	5	4:12.24	4:12.30
6	2	4:13.39	4:13.40
7	1	4:22.33	4:22.37
8	3	-----	4:12.30

#### Manual Placings

<b>Judge 1</b>	74863521
<b>Judge 2</b>	47863521
<b>Referee</b>	47865321

i. determine the official result

Rank	Lane	Time
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
6	.....	.....
7	.....	.....
8	.....	.....

ii. Explain how you arrived at the result

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iii Explain what the letters E and M indicate adjacent to the time on particular lanes

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