

# **SWIMMING NEW SOUTH WALES LTD AUTOMATIC OFFICIATING EQUIPMENT OPERATOR TRAINING NOTES**

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## **INTRODUCTION**

As there are a number of companies who manufacture sports electronic timing equipment which include Omega (Swatch Timing), Daktronics, Colorado and Take Your Marks this document will not attempt to describe the set up or operating procedures used by each individual system but will provide sufficient information to enable you to efficiently carry out all of the duties and responsibilities which relate to the automatic officiating equipment (AOE) functions.

As Omega Timing is the most widely used timing equipment at the higher level swimming competition in Australia any essential examples of "printout slips" or procedures used to describe or clarify certain situations will reflect what would normally be used by this manufacturer.

When the automatic timing equipment is associated with the use of touchpads it is called the "PRIMARY" timing system. The timing for this is started electronically in conjunction with the "starting signal" and is terminated by the swimmer/s applying pressure to the touchpads.

Semi-Automatic Timing (SAT) is called the "BACKUP" when used to complement a timing system using touchpads. It is also started electronically in conjunction with the "starting signal" but is terminated by Timekeepers operating a "*manual sensing device*" often called a SAT button or plunger.

SAT can also be used as the PRIMARY timing system when touchpads are not used and in this case a manual stopwatch is sometimes used as a backup in the unlikely case of the SAT failure.

## **GENERAL**

These notes detail the responsibilities, duties and procedures of the;

- ☞ Automatic Officiating Equipment Supervisor,
- ☞ Automatic Officiating Equipment Operator, and
- ☞ Semi-Automatic Timing Equipment Operator.

Should there not be an AOE Supervisor actually appointed for the meet then both the AOE and SAT Operators should take responsibility to ensure that the Supervisor's functions are fully and correctly carried out.

As part of the automatic timing function you should report to the Referee at least one (1) hour prior to the advertised starting time of the meet.

This allows the Referee to:

- give you a program; and
- mark you present against the official's appointment roster.

The hour will also allow you to,

- meet other officials who will be involved with the timing/results areas. E.g. Chief Recorder, Meet Manager computer operators,
- familiarise yourself with the pool layout,
- familiarise yourself with the operation of the timing equipment,

It will also allow sufficient time for any necessary programming, setting up and testing of the timing equipment that is pertinent to that particular swimming meet.

#### **EQUIPMENT:**

The equipment that you will need is somewhat minimal with pencils and or biros being essential but it is suggested that you should also provide,

- a stapler and staples, and
- bull dog clips or some other method of securing the AOE and SAT printout slips.

#### **SET UP and TESTING:**

The setting up and testing of the timing equipment may vary immensely from location to location and even the circumstances under which the meet is to be conducted.

At some venues it is the responsibility of the pool or council staff to ensure that the timing equipment is properly set up and operational. When this is the case it is important not to interfere with, or alter any of the configurations that the responsible pool staff has made. If unauthorised changes are made it may breach the agreement between the hirer of the pool complex and the pool management and place the responsibility of any malfunctions of the timing equipment back onto the Organising Committee/AOE Operators.

Although the following is not all encompassing the main points that should be checked prior to the start of the meet are.

#### **When the setting up and testing is the responsibility of the pool complex staff:**

Check that,

- each touchpad registers a "touch" by physically making contact with each touchpad in turn. If this is done sequentially (e.g. lanes 1- 8 or 8 - 1) this will also ensure that each "lane module" is configured correctly.
- each SAT button registers when pressed. This should also be done sequentially as per the point above.
- there is communication between the timing equipment and any computer program that the results will be automatically downloaded to. (e.g. Hy-Tek Meet Manager)
- when required, the events (and swimmers' names) can be uploaded from the results computer.
- if a scoreboard is being used, ensure that it is functioning correctly.
- both the primary and backup timing consoles are synchronised.
- the starting equipment is operating correctly. If there is to be starts from both ends of the pool, both starting devices should be tested individually.
- the starting signal will activate both the PRIMARY and BACKUP consoles.

**When the setting up and testing is the responsibility of the actual operators then the following guidelines should be considered. This assumes that all necessary pool deck equipment has been connected to the timing consoles.**

***If AOE (touchpads) and SAT is being used.***

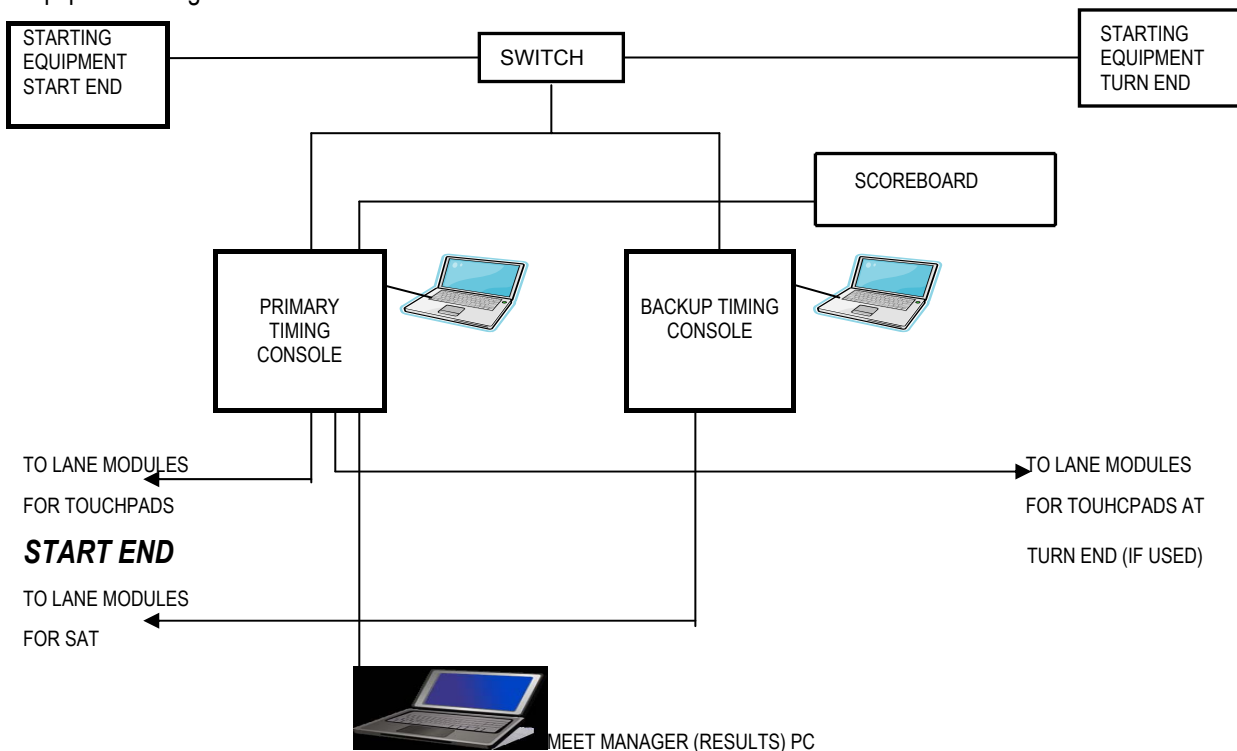
Check that the programmings of both timing consoles are correct.

- ✓ the console to be used as the PRIMARY is set to activate on one (1) touch. That is, the console would be waiting for one (1) registration and not three (3) as per the BACKUP console. (see point 5 below)
- ✓ if touchpads are to be used at **both** ends of the pool, the console to be used as the PRIMARY is programmed for this situation.
- ✓ the PRIMARY console will allow data to be sent to a scoreboard if required.
- ✓ there is communication between the PRIMARY console to the results computer for both downloading and uploading data if necessary.
- ✓ the console to be used as the BACKUP is set to activate on three (3) SAT buttons.
- ✓ both consoles have been programmed for the correct number of lanes that will be used.
- ✓ both consoles have been programmed to record times to 1/100 second. (Refer SW11.2)
- ✓ the start pulse is connected to both the PRIMARY and BACKUP consoles.
- ✓ both the PRIMARY and BACKUP consoles are synchronised with each other. That is the date and time is exactly the same on both consoles.
- ✓ the "ARM DELAY" is set correctly on both consoles.

If only touchpads **or** semi-automatic timing is being used then the points applicable to that setup will need to be checked for correct operation.

**Pool deck equipment set up.**

Below is a sketch for a typical setup that could be utilised when using touchpads as the primary and SAT as backup. There could also be computers associated with the "timing consoles" depending on the brand or style of timing equipment being used.



## **SUPERVISORS/OPERATORS RESPONSIBILITIES:**

### **Before the start of the session.**

The AOE Supervisor should ensure that all testing has been completed well before the scheduled start of the session to allow adequate time for any corrective actions to be done, in particular if pool staff has to be involved. If there is a possibility that the start of the session could be delayed due to timing equipment malfunction the Referee should be advised so that the appropriate personnel can become involved in corrective action.

Once it is clear that all testing has been successful the AOE Supervisor should inform the Referee/s that the timing equipment is fully functional and operational and present any available evidence of this, such as AOE/SAT printout slips.

### **Immediately before and during the race.**

All officials involved in the electronic timing function should be fully concentrating on their duties during the whole race. Points that should be considered include,

- ♣ that both consoles are ready for the start of a new race. (Refer "Missed Start" below)
- ♣ that both consoles are set for the correct event and heat.
- ♣ that the PRIMARY console is set for the correct distance. (i.e. the number of touches)
- ♣ after the start, note empty lanes.
- ♣ check and ensure that both consoles have received the start signal.
- ♣ if empty lanes are to be "deleted" on the timing consoles cross check to ensure that the correct lane numbers have been deleted. (NOTE 1)
- ♣ if a scoreboard is being used check that it is functioning and is displaying the correct information.
- ♣ observe all lanes through the event to note any swimmer/s who did not finish.
- ♣ the PRIMARY operator to observe all turns to ensure correction of any missed touches.
- ♣ observe and delete any accidental touches or SAT buttons being operated too early.
- ♣ judge the finish of the race in an attempt to pickup "soft touches".

NOTE 1. It is usually the practice to only delete the vacant lanes on the PRIMARY console so that if an incorrect lane should be deleted the swimmer will still be able to be credited with the backup time.

### **Missed Starts.**

If either the PRIMARY or BACKUP consoles were not ready to receive the start pulse and therefore the "start was missed" the operators must be aware of how to recover a missed start.

The procedures when using **Omega ARES** is,

- from the "**RACE**" window, select "**Actions**"
- select "**Missed start**". (shortcut **F2**)
- a list showing all the start pulses that have been received during the session will be displayed. Choose the time that is the same as the time that has been printed by the alternative console. This is usually the first time displayed on the list. When the required time is selected the console will be running at the correct time.

Care should be taken to ensure that the "arm delay" is not longer than the time remaining to swim the rest of the race so that the touchpads or SAT buttons will be armed. To arm the touchpads or SAT buttons,

- from the "**RACE**" window, select "**Actions**"
- select "**Arm ON**". (shortcut **ctrl Q**) and the touchpads or SAT buttons will be armed.

If using **Omega OSM 6**

- select **"INS"**
- select **"START"**
- the display will show **"no time"**.
- select **"ENTER"** to confirm that this is the required function.
- select **"LAST"** . Check that this is the last time printed on the other console and select **"ENTER"**.

Care should also be taken here to ensure that the touchpads or SAT buttons are armed before the first swimmers touches. To do this select **"LANE ON" + "ALL"**

Alternatively the start time printed on the other OSM 6 can be inserted by

- selecting **"INS"**
- selecting **"START"**,
- selecting **"ENTER"**, and
- typing in the exact time as printed on the other OSM 6 and selecting **"ENTER"**.

**If there is only one (1) timing system in use (AOE or SAT) and for some reason it is not possible to recover the start the Referee must be informed immediately for his/her decision and action.**

#### **Immediately after the race.**

Print the **result** of the BACKUP console so that the time recorded by each individual SAT button can be checked if necessary. This will also provide proof that there was the required number of times recorded in case the time is required for claiming a record.

If it is the procedure being used for a particular meet or when necessary also print the result of the PRIMARY console. This may be necessary during distance events such as 800 and 1500 metre races where some swimmers may be "lapped". Printing the result will reorder the times and list the swimmers in the correct finishing order.

As the timing equipment will probably be controlling the ability to start the next race it is imperative that the equipment is set to the next event or heat as soon as practical as failure to do this will hold up the flow of the meet.

#### **Checking the result slips.**

Generally the SAT times are approximately 0.10 to 0.12 SLOWER than the times recorded by the AOE ( touchpads) and the two (2) result slips should be checked against each other to ensure that the placings and times recorded by each lane are within acceptable limits.

1. Check that there is finish times recorded against each lane that had a swimmer in it. (See examples 1 and 2, pages 7 & 8)
2. Compare the placings of the 2 result slips. In close finishes there may be some disagreements, but a comparison of the official times (step 5) may clarify what the final decision should be.
3. If there is a lane or lanes without an AOE time then the official SAT time would become the official time for that lane/s. (Refer SW13.3.2.) All such incidents should be referred to the Referee unless there has been a direction given to the AOE/SAT Operators during the pre-meet briefing that they should use their own discretion when there is a need to insert the backup (SAT) time. (See example 3, page 9)

It is also important that the AOE Operator is aware of method that is used to insert the BACKUP time into the results of the PRIMARY system should this be necessary.

4. If there is a discrepancy with the **placings** recorded by the PRIMARY console and the BACKUP console a comparison should be done between the **official times**. (See example 4, page 10)
  - ✓ If the official BACKUP time is **faster** than the PRIMARY time a check should be done on the three (3) individual SAT button times.
  - ✓ If these times are within acceptable limits then it is likely that there could have been a “soft touch” by the swimmer.
  - ✓ All result slips should be presented to the Referee for a decision on whether the BACKUP time is to be used as the official time for that lane/s.
  - ✓ If the Referee does decide to use the BACKUP time a notation should be made on the PRIMARY result slip to this effect.
  - ✓ This decision should be reported to the Chief Recorder and/or the Meet Manager Operator.
5. If there is a discrepancy as in 4 above but an investigation of the SAT shows that the 3 times recorded on each lane are close and as stated previously, are approximately 0.10 **slower** than the AOE times then there is probably no reason to doubt the accuracy of the PRIMARY and therefore the AOE places and times would be official. If the difference between the AOE times is quite small (a few hundredths of a second) this would also indicate that there was no failure of the timing system. (See example 5, page 11)
6. When an electronic timing device is in operation to judge the changeovers during relay events, bring to the attention of the Referee any apparent cases of an illegal changeover (negative reaction times) as soon as possible. (See example 6 page 12)

Unless advised otherwise as in a pre session briefing all discrepancies between the electronic timing result slips should be referred to the Referee for his/her decision. In particular, any incident that could be seen as controversial must be brought to the Referees' attention for their action.

**EXAMPLE 1:** Printout of AOE and SAT using ARES timing equipment manufactured by Omega. The race is a 200 metres freestyle event with touchpads at one (1) end. All places and times agree and this could be passed straight to the Recorders.

**Column A PRIMARY**

| ARES 21              |    |            |   |              |  |  |
|----------------------|----|------------|---|--------------|--|--|
| OMEGA Sports Timing  |    |            |   |              |  |  |
| EVENT: 53            |    | HEAT: 1    |   |              |  |  |
| P                    | H  | L          | L | 15/11/2007   |  |  |
| A                    | A  | A          | A | 11.03:51.770 |  |  |
| C                    | R  | N          | P |              |  |  |
| E                    | N  | E          |   | PROG: AUTO   |  |  |
| S                    | S  |            |   |              |  |  |
| 1                    | 1  | 4          | 1 | 57.03        |  |  |
| 2                    | 1  | 3          | 1 | 57.95        |  |  |
| 3                    | 1  | 5          | 1 | 58.00        |  |  |
| 4                    | 1  | 6          | 1 | 59.10        |  |  |
| 5                    | 1  | 2          | 1 | 1:00.01      |  |  |
| 6                    | 1  | 1          | 1 | 1:01.87      |  |  |
| 7                    | 1  | 8          | 1 | 1:03.21      |  |  |
| 8                    | 1  | 7          | 1 | 1:04.63      |  |  |
|                      |    |            |   |              |  |  |
| 1                    | 1  | 4          | 2 | 1:58.32      |  |  |
| 2                    | 1  | 5          | 2 | 1:59.48      |  |  |
| 3                    | 1  | 3          | 2 | 2:01.90      |  |  |
| 4                    | 1  | 6          | 2 | 2:02.12      |  |  |
| 5                    | 1  | 2          | 2 | 2:03.98      |  |  |
| 6                    | 1  | 7          | 2 | 2:10.67      |  |  |
| 7                    | 1  | 8          | 2 | 2:11.45      |  |  |
| 8                    | 1  | 1          | 2 | 2:12.26      |  |  |
|                      |    |            |   |              |  |  |
| Results              |    |            |   |              |  |  |
| 53 H 1               |    | M 200 m FR |   |              |  |  |
| Ra                   | La |            |   | Time         |  |  |
| 1                    | 4  |            |   | 1:58.32      |  |  |
| 2                    | 5  |            |   | 1:59.48      |  |  |
| 3                    | 3  |            |   | 2:01.90      |  |  |
| 4                    | 6  |            |   | 2:02.12      |  |  |
| 5                    | 2  |            |   | 2:03.98      |  |  |
| 6                    | 7  |            |   | 2:10.67      |  |  |
| 7                    | 8  |            |   | 2:11.45      |  |  |
| 8                    | 1  |            |   | 2:12.26      |  |  |
|                      |    |            |   |              |  |  |
| Title of the event   |    |            |   |              |  |  |
| M = Men's            |    |            |   |              |  |  |
| 200 metres Freestyle |    |            |   |              |  |  |

**Column B BACKUP**

| ARES 21  |   |         |   |               |  |  |
|--|---|---------|---|---------------|--|--|
| OMEGA Sports Timing                                  |   |         |   |               |  |  |
| EVENT: 53  |   | HEAT: 1 |   |               |  |  |
| P  | H | L       | L | 15/11/2007    |  |  |
| A  | A | A       | A | 11.03:51.771  |  |  |
| C  | R | N       | P |               |  |  |
| E  | N | E       |   | PROG: 2nd TOP |  |  |
| S  | S |         |   |               |  |  |
| A  | 1 | 4       | 1 | 1:58.40       |  |  |
| 1  | 1 | 4       | 1 | 1:58.43       |  |  |
| B  | 1 | 4       | 1 | 1:58.47       |  |  |
| C  | 1 | 5       | 1 | 1:59.57       |  |  |
| 2  | 1 | 5       | 1 | 1:59.60       |  |  |
| A  | 1 | 5       | 1 | 1:59.62       |  |  |
| A  | 1 | 3       | 1 | 2:01.99       |  |  |
| 3  | 1 | 3       | 1 | 2:02.02       |  |  |
| C  | 1 | 3       | 1 | 2:02.06       |  |  |
| B  | 1 | 6       | 1 | 2:02.23       |  |  |
| 4  | 1 | 6       | 1 | 2:02.26       |  |  |
| A  | 1 | 6       | 1 | 2:02.27       |  |  |
| A  | 1 | 2       | 1 | 2:04.05       |  |  |
| 5  | 1 | 2       | 1 | 2:04.07       |  |  |
| B  | 1 | 2       | 1 | 2:04.11       |  |  |
| C  | 1 | 7       | 1 | 2:10.62       |  |  |
| 6  | 1 | 7       | 1 | 2:10.78       |  |  |
| A  | 1 | 7       | 1 | 2:10.81       |  |  |
| C  | 1 | 8       | 1 | 2:11.54       |  |  |
| 7  | 1 | 8       | 1 | 2:11.56       |  |  |
| B  | 1 | 8       | 1 | 2:11.62       |  |  |
| B  | 1 | 1       | 1 | 2:12.37       |  |  |
| 8  | 1 | 1       | 1 | 2:12.38       |  |  |
| C  | 1 | 1       | 1 | 2:12.41       |  |  |
|  |   |         |   |               |  |  |
| Times recorded as each individual SAT button pressed |   |         |   |               |  |  |

**Column C BACKUP RESULT**

| Results  |    |         |
|--|----|---------|
| 53 H 1 M 200 FR  |    |         |
| Ra   | La | Time    |
| 1  | 4  | 1:58.43 |
|  | M1 | 1:58.40 |
|  | M2 | 1:58.47 |
|  | M3 | 1:58.43 |
| 2  | 5  | 1:59.60 |
|  | M1 | 1:59.62 |
|  | M2 | 1:59.60 |
|  | M3 | 1:59.57 |
| 3  | 3  | 2:02.06 |
|  | M1 | 2:01.99 |
|  | M2 | 2:02.02 |
|  | M3 | 2:02.06 |
| 4  | 6  | 2:02.26 |
|  | M1 | 2:02.27 |
|  | M2 | 2:02.23 |
|  | M3 | 2:02.26 |
| 5  | 2  | 2:04.07 |
|  | M1 | 2:04.05 |
|  | M2 | 2:04.11 |
|  | M3 | 2:04.07 |
| 6  | 7  | 2:10.78 |
|  | M1 | 2:10.81 |
|  | M2 | 2:10.78 |
|  | M3 | 2:10.62 |
| 7  | 8  | 2:11.56 |
|  | M1 | 2:11.56 |
|  | M2 | 2:11.62 |
|  | M3 | 2:11.54 |
| 8  | 1  | 2:12.38 |
|  | M1 | 2:12.38 |
|  | M2 | 2:12.37 |
|  | M3 | 2:12.41 |
|  |    |         |
| After the result has been printed (F12 on ARES) and lanes have been sorted in place order and official times shown with the times of each SAT button |    |         |

**EXAMPLE 2:** Same situation as example 1 but with the timing equipment being an OSM 6 also manufactured by Omega.

| OMEGA SWIM-O-MATIC |     |             |     |
|--------------------|-----|-------------|-----|
| OSM 6              |     |             |     |
| ARMING:            | 15  | SEC         |     |
| LAPS :             |     | 04          |     |
| PROG :             |     | AUTO        |     |
| EVENT :            | 053 | HEAT :      | 002 |
| P                  |     | 11.07:02.76 |     |
| L L                |     |             |     |
| A A L              |     | 15/11/07    |     |
| C N A              |     |             |     |
| E E P              |     |             |     |
| 1 4 1              |     | 56.13       |     |
| 2 5 1              |     | 57.01       |     |
| 3 2 1              |     | 57.97       |     |
| 4 3 1              |     | 58.12       |     |
| 5 1 1              |     | 59.98       |     |
| 6 6 1              |     | 1:00.64     |     |
| 7 8 1              |     | 1:01.22     |     |
| 8 7 1              |     | 1:03.65     |     |
| 1 4 2              |     | 1:56.11     |     |
| 2 5 2              |     | 1:57.82     |     |
| 3 6 2              |     | 1:59.09     |     |
| 4 3 2              |     | 2:01.17     |     |
| 5 2 2              |     | 2:02.56     |     |
| 6 1 2              |     | 2:05.43     |     |
| 7 8 2              |     | 2:07.29     |     |
| 8 7 2              |     | 2:10.85     |     |
| OMEGA SWIM-O-MATIC |     |             |     |
| OSM 6              |     |             |     |
| ARMING:            | 15  | SEC         |     |
| LAPS :             |     | 04          |     |
| PROG :             |     | AUTO        |     |
| EVENT :            | 053 | HEAT :      | 002 |
| P                  |     | 11.07:02.76 |     |
| L L                |     |             |     |
| A A L              |     | 15/11/07    |     |
| C N A              |     |             |     |
| E E P              |     | RESULT      |     |
| 1 4 2              |     | 1:56.11     |     |
| 2 5 2              |     | 1:57.82     |     |
| 3 6 2              |     | 1:59.09     |     |
| 4 3 2              |     | 2:01.17     |     |
| 5 2 2              |     | 2:02.56     |     |
| 6 1 2              |     | 2:05.43     |     |
| 7 8 2              |     | 2:07.29     |     |
| 8 7 2              |     | 2:10.85     |     |

| OMEGA SWIM-O-MATIC |     |             |     |
|--------------------|-----|-------------|-----|
| OSM 6              |     |             |     |
| ARMING:            | 15  | SEC         |     |
| LAPS :             |     | 01          |     |
| PROG :             |     | MANUAL      |     |
| EVENT :            | 053 | HEAT :      | 002 |
| P                  |     | 11.07:02.77 |     |
| L L                |     |             |     |
| A A L              |     | 15/11/07    |     |
| C N A              |     |             |     |
| E E P              |     |             |     |
| 1 4 1              |     | 1:56.24     |     |
| 2 5 1              |     | 1:57.90     |     |
| 3 6 1              |     | 1:59.20     |     |
| 4 3 1              |     | 2:01.30     |     |
| 5 2 1              |     | 2:02.67     |     |
| 6 1 1              |     | 2:05.53     |     |
| 7 8 1              |     | 2:07.41     |     |
| 8 7 1              |     | 2:10.92     |     |

| OMEGA SWIM-O-MATIC |     |             |     |
|--------------------|-----|-------------|-----|
| OSM 6              |     |             |     |
| ARMING:            | 15  | SEC         |     |
| LAPS :             |     | 01          |     |
| PROG :             |     | MANUAL      |     |
| EVENT :            | 053 | HEAT :      | 002 |
| P                  |     | 11.07:02.77 |     |
| L L                |     |             |     |
| A A L              |     | 15/11/07    |     |
| C N A              |     |             |     |
| E E P              |     | BACKUP      |     |
| 1 4 1              |     | 1:56.24     |     |
| 4 1                |     | 1:56.27     |     |
| 4 1                |     | 1:56.20     |     |
| 5 1                |     | 1:57.97     |     |
| 2 5 1              |     | 1:57.90     |     |
| 5 1                |     | 1:57.85     |     |
| 6 1                |     | 1:59.19     |     |
| 3 6 1              |     | 1:59.20     |     |
| 6 1                |     | 1:59.26     |     |
| 3 1                |     | 2:01.33     |     |
| 3 1                |     | 2:01.25     |     |
| 4 3 1              |     | 2:01.30     |     |
| 5 2 1              |     | 2:02.67     |     |
| 2 1                |     | 2:02.70     |     |
| 2 1                |     | 2:02.61     |     |
| 1 1                |     | 2:05.62     |     |
| 6 1 1              |     | 2:05.53     |     |
| 1 1                |     | 2:05.50     |     |
| 8 1                |     | 2:07.46     |     |
| 8 1                |     | 2:07.39     |     |
| 7 8 1              |     | 2:07.41     |     |
| 8 7 1              |     | 2:10.92     |     |
| 7 1                |     | 2:10.89     |     |
| 7 1                |     | 2:10.97     |     |



**EXAMPLE 3: Lane 6 did not record a finish time.** The Referee would note that the SAT time would become the official time and would also indicate the place where this time is to be inserted in the ranking.

| ARES 21             |    |            |   |              |  |
|---------------------|----|------------|---|--------------|--|
| OMEGA Sports Timing |    |            |   |              |  |
| EVENT: 53           |    | HEAT: 1    |   | 15/11/2007   |  |
| P                   | H  | L          | L | 11.03:51.770 |  |
| L                   | A  | A          | A |              |  |
| A                   | R  | N          | P |              |  |
| C                   | E  |            |   |              |  |
| E                   | S  | PROG: AUTO |   |              |  |
| S                   |    |            |   |              |  |
| 1                   | 1  | 4          | 1 | 57.03        |  |
| 2                   | 1  | 3          | 1 | 57.95        |  |
| 3                   | 1  | 5          | 1 | 58.00        |  |
| 4                   | 1  | 6          | 1 | 59.10        |  |
| 5                   | 1  | 2          | 1 | 1:00.01      |  |
| 6                   | 1  | 1          | 1 | 1:01.87      |  |
| 7                   | 1  | 8          | 1 | 1:03.21      |  |
| 8                   | 1  | 7          | 1 | 1:04.63      |  |
|                     |    |            |   |              |  |
| 1                   | 1  | 4          | 2 | 1:58.32      |  |
| 2                   | 1  | 5          | 2 | 1:59.48      |  |
| 3                   | 1  | 3          | 2 | 2:01.90      |  |
| 4                   | 1  | 2          | 2 | 2:03.98      |  |
| 5                   | 1  | 7          | 2 | 2:10.67      |  |
| 6                   | 1  | 8          | 2 | 2:11.45      |  |
| 7                   | 1  | 1          | 2 | 2:12.26      |  |
|                     |    |            |   |              |  |
| Results             |    |            |   |              |  |
| 53 H 1 M 200 m FR   |    |            |   |              |  |
| Ra                  | La | Time       |   |              |  |
| 1                   | 4  | 1:58.32    |   |              |  |
| 2                   | 5  | 1:59.48    |   |              |  |
| 3                   | 3  | 2:01.90    |   |              |  |
| 4                   | 2  | 2:03.98    |   |              |  |
| 5                   | 7  | 2:10.67    |   |              |  |
| 6                   | 8  | 2:11.45    |   |              |  |
| 7                   | 1  | 2:12.26    |   |              |  |
|                     |    |            |   |              |  |
| SAT lane 6 2:02.26  |    |            |   |              |  |
|                     |    |            |   |              |  |
| PST                 |    |            |   |              |  |

| ARES 21             |   |               |   |              |  |
|---------------------|---|---------------|---|--------------|--|
| OMEGA Sports Timing |   |               |   |              |  |
| EVENT: 53           |   | HEAT: 1       |   | 15/11/2007   |  |
| P                   | H | L             | L | 11.03:51.771 |  |
| L                   | A | A             | A |              |  |
| A                   | R | N             | P |              |  |
| C                   | E |               |   |              |  |
| E                   | S | PROG: 2nd TOP |   |              |  |
| S                   |   |               |   |              |  |
| A                   | 1 | 4             | 1 | 1:58.40      |  |
| 1                   | 1 | 4             | 1 | 1:58.43      |  |
| B                   | 1 | 4             | 1 | 1:58.47      |  |
| C                   | 1 | 5             | 1 | 1:59.57      |  |
| 2                   | 1 | 5             | 1 | 1:59.60      |  |
| A                   | 1 | 5             | 1 | 1:59.62      |  |
| A                   | 1 | 3             | 1 | 2:01.99      |  |
| 3                   | 1 | 3             | 1 | 2:02.02      |  |
| C                   | 1 | 3             | 1 | 2:02.06      |  |
| B                   | 1 | 6             | 1 | 2:02.23      |  |
| 4                   | 1 | 6             | 1 | 2:02.26      |  |
| A                   | 1 | 6             | 1 | 2:02.27      |  |
| A                   | 1 | 2             | 1 | 2:04.05      |  |
| 5                   | 1 | 2             | 1 | 2:04.07      |  |
| B                   | 1 | 2             | 1 | 2:04.11      |  |
| C                   | 1 | 7             | 1 | 2:10.62      |  |
| 6                   | 1 | 7             | 1 | 2:10.78      |  |
| A                   | 1 | 7             | 1 | 2:10.81      |  |
| C                   | 1 | 8             | 1 | 2:11.54      |  |
| 7                   | 1 | 8             | 1 | 2:11.56      |  |
| B                   | 1 | 8             | 1 | 2:11.62      |  |
| B                   | 1 | 1             | 1 | 2:12.37      |  |
| 8                   | 1 | 1             | 1 | 2:12.38      |  |
| C                   | 1 | 1             | 1 | 2:12.41      |  |

| Results         |    |         |
|-----------------|----|---------|
| 53 H 1 M 200 FR |    |         |
| Ra              | La | Time    |
| 1               | 4  | 1:58.43 |
|                 | M1 | 1:58.40 |
|                 | M2 | 1:58.47 |
|                 | M3 | 1:58.43 |
|                 |    |         |
| 2               | 5  | 1:59.60 |
|                 | M1 | 1:59.62 |
|                 | M2 | 1:59.60 |
|                 | M3 | 1:59.57 |
|                 |    |         |
| 3               | 3  | 2:02.06 |
|                 | M1 | 2:01.99 |
|                 | M2 | 2:02.02 |
|                 | M3 | 2:02.06 |
|                 |    |         |
| 4               | 6  | 2:02.26 |
|                 | M1 | 2:02.27 |
|                 | M2 | 2:02.23 |
|                 | M3 | 2:02.26 |
|                 |    |         |
| 5               | 2  | 2:04.07 |
|                 | M1 | 2:04.05 |
|                 | M2 | 2:04.11 |
|                 | M3 | 2:04.07 |
|                 |    |         |
| 6               | 7  | 2:10.78 |
|                 | M1 | 2:10.81 |
|                 | M2 | 2:10.78 |
|                 | M3 | 2:10.62 |
|                 |    |         |
| 7               | 8  | 2:11.56 |
|                 | M1 | 2:11.56 |
|                 | M2 | 2:11.62 |
|                 | M3 | 2:11.54 |
|                 |    |         |
| 8               | 1  | 2:12.38 |
|                 | M1 | 2:12.38 |
|                 | M2 | 2:12.37 |
|                 | M3 | 2:12.41 |

**EXAMPLE 4:** When checking the result slips there is a discrepancy between the places and times of lanes 3 and 5. Further investigation indicates that the 3 SAT times on both lanes are close and FASTER than the AOE time. There is a probability of a “soft touch” and the Referee would note that the AOE time should not be used and that the SAT time is to be used. The Referee would also indicate where the time is to be inserted into the ranking.

| ARES 21             |               |         |              |
|---------------------|---------------|---------|--------------|
| OMEGA Sports Timing |               |         |              |
| EVENT: 53           |               | HEAT: 1 |              |
| P L A C E           | H A R N E S S | L A N E | 15/11/2007   |
|                     |               |         | 11.03:51.770 |
| PROG: AUTO          |               |         |              |
| 1                   | 1             | 4       | 1            |
| 2                   | 1             | 3       | 1            |
| 3                   | 1             | 5       | 1            |
| 4                   | 1             | 6       | 1            |
| 5                   | 1             | 2       | 1            |
| 6                   | 1             | 1       | 1            |
| 7                   | 1             | 8       | 1            |
| 8                   | 1             | 7       | 1            |
|                     |               |         |              |
| 1                   | 1             | 4       | 2            |
| 2                   | 1             | 3       | 2            |
| 3                   | 1             | 5       | 2            |
| 4                   | 1             | 6       | 2            |
| 5                   | 1             | 2       | 2            |
| 6                   | 1             | 7       | 2            |
| 7                   | 1             | 8       | 2            |
| 8                   | 1             | 1       | 2            |
| Results             |               |         |              |
| 53 H 1 M 200 m FR   |               |         |              |
| Ra                  | La            | Time    |              |
| 1                   | 4             | 1:58.32 |              |
| 2                   | 3             | 2:01.90 |              |
| 3                   | 5             | 2:02.12 |              |
| 4                   | 6             | 2:02.17 |              |
| 5                   | 2             | 2:03.98 |              |
| 6                   | 7             | 2:10.67 |              |
| 7                   | 8             | 2:11.45 |              |
| 8                   | 1             | 2:12.26 |              |
| SAT lane 5 1:59.60  |               |         |              |
| POT                 |               |         |              |

| ARES 21             |               |         |              |
|---------------------|---------------|---------|--------------|
| OMEGA Sports Timing |               |         |              |
| EVENT: 53           |               | HEAT: 1 |              |
| P L A C E           | H A R N E S S | L A N E | 15/11/2007   |
|                     |               |         | 11.03:51.771 |
| PROG: 2nd TOP       |               |         |              |
| A                   | 1             | 4       | 1            |
| 1                   | 1             | 4       | 1            |
| B                   | 1             | 4       | 1            |
| C                   | 1             | 5       | 1            |
| 2                   | 1             | 5       | 1            |
| A                   | 1             | 5       | 1            |
| A                   | 1             | 3       | 1            |
| 3                   | 1             | 3       | 1            |
| C                   | 1             | 3       | 1            |
| B                   | 1             | 6       | 1            |
| 4                   | 1             | 6       | 1            |
| A                   | 1             | 6       | 1            |
| A                   | 1             | 2       | 1            |
| 5                   | 1             | 2       | 1            |
| B                   | 1             | 2       | 1            |
| C                   | 1             | 7       | 1            |
| 6                   | 1             | 7       | 1            |
| A                   | 1             | 7       | 1            |
| C                   | 1             | 8       | 1            |
| 7                   | 1             | 8       | 1            |
| B                   | 1             | 8       | 1            |
| B                   | 1             | 1       | 1            |
| 8                   | 1             | 1       | 1            |
| C                   | 1             | 1       | 1            |

| Results         |    |         |
|-----------------|----|---------|
| 53 H 1 M 200 FR |    |         |
| Ra              | La | Time    |
| 1               | 4  | 1:58.43 |
|                 | M1 | 1:58.40 |
|                 | M2 | 1:58.47 |
|                 | M3 | 1:58.43 |
| 2               | 5  | 1:59.60 |
|                 | M1 | 1:59.62 |
|                 | M2 | 1:59.60 |
|                 | M3 | 1:59.57 |
| 3               | 3  | 2:02.06 |
|                 | M1 | 2:01.99 |
|                 | M2 | 2:02.02 |
|                 | M3 | 2:02.06 |
| 4               | 6  | 2:02.26 |
|                 | M1 | 2:02.27 |
|                 | M2 | 2:02.23 |
|                 | M3 | 2:02.26 |
| 5               | 2  | 2:04.07 |
|                 | M1 | 2:04.05 |
|                 | M2 | 2:04.11 |
|                 | M3 | 2:04.07 |
| 6               | 7  | 2:10.78 |
|                 | M1 | 2:10.81 |
|                 | M2 | 2:10.78 |
|                 | M3 | 2:10.62 |
| 7               | 8  | 2:11.56 |
|                 | M1 | 2:11.56 |
|                 | M2 | 2:11.62 |
|                 | M3 | 2:11.54 |
| 8               | 1  | 2:12.38 |
|                 | M1 | 2:12.38 |
|                 | M2 | 2:12.37 |
|                 | M3 | 2:12.41 |

**EXAMPLE 5:** There is a discrepancy between the AOE and SAT of the places of lanes 5 and 3. Checking the individual times recorded by the 3 SAT buttons on both lanes shows that they are all within the acceptable limits and that they are all SLOWER than the touchpad time. As there is only a very small difference in the times between the lanes involved (0.04 sec) and there is no **OBVIOUS** failure of the timing equipment then the AOE places and times should become official. It should also be noted that using the SAT time of lane 5 (2:01.37) as the official time will not alter the placings due to the close finish of the race.

| ARES 21             |    |         |   |              |  |
|---------------------|----|---------|---|--------------|--|
| OMEGA Sports Timing |    |         |   |              |  |
| EVENT: 53           |    | HEAT: 1 |   | 15/11/2007   |  |
| P                   | H  | L       | L | 11.03:51.770 |  |
| A                   | A  | A       | A |              |  |
| R                   | R  | N       | N |              |  |
| A                   | N  | E       | P |              |  |
| C                   | E  | S       |   | PROG: AUTO   |  |
| E                   | S  |         |   |              |  |
| 1                   | 1  | 4       | 1 | 57.03        |  |
| 2                   | 1  | 3       | 1 | 57.95        |  |
| 3                   | 1  | 5       | 1 | 58.00        |  |
| 4                   | 1  | 6       | 1 | 59.10        |  |
| 5                   | 1  | 2       | 1 | 1:00.01      |  |
| 6                   | 1  | 1       | 1 | 1:01.87      |  |
| 7                   | 1  | 8       | 1 | 1:03.21      |  |
| 8                   | 1  | 7       | 1 | 1:04.63      |  |
|                     |    |         |   |              |  |
| 1                   | 1  | 4       | 2 | 1:58.32      |  |
| 2                   | 1  | 5       | 2 | 2:01.20      |  |
| 3                   | 1  | 3       | 2 | 2:01.24      |  |
| 4                   | 1  | 6       | 2 | 2:02.12      |  |
| 5                   | 1  | 2       | 2 | 2:03.98      |  |
| 6                   | 1  | 7       | 2 | 2:10.67      |  |
| 7                   | 1  | 8       | 2 | 2:11.45      |  |
| 8                   | 1  | 1       | 2 | 2:12.26      |  |
|                     |    |         |   |              |  |
| Results             |    |         |   |              |  |
| 53 H 1 M 200 m FR   |    |         |   |              |  |
| Ra                  | La | Time    |   |              |  |
| 1                   | 4  | 1:58.32 |   |              |  |
| 2                   | 5  | 2:01.20 |   |              |  |
| 3                   | 3  | 2:01.24 |   |              |  |
| 4                   | 6  | 2:02.12 |   |              |  |
| 5                   | 2  | 2:03.98 |   |              |  |
| 6                   | 7  | 2:10.67 |   |              |  |
| 7                   | 8  | 2:11.45 |   |              |  |
| 8                   | 1  | 2:12.26 |   |              |  |

| ARES 21             |   |         |   |               |  |
|---------------------|---|---------|---|---------------|--|
| OMEGA Sports Timing |   |         |   |               |  |
| EVENT: 53           |   | HEAT: 1 |   | 15/11/2007    |  |
| P                   | H | L       | L | 11.03:51.771  |  |
| A                   | A | A       | A |               |  |
| R                   | R | N       | N |               |  |
| A                   | N | E       | P |               |  |
| C                   | E | S       |   | PROG: 2nd TOP |  |
| E                   | S |         |   |               |  |
| A                   | 1 | 4       | 1 | 1:58.40       |  |
| 1                   | 1 | 4       | 1 | 1:58.43       |  |
| B                   | 1 | 4       | 1 | 1:58.47       |  |
| C                   | 1 | 3       | 1 | 2:01.29       |  |
| 2                   | 1 | 3       | 1 | 2:01.35       |  |
| A                   | 1 | 5       | 1 | 2:01.35       |  |
| A                   | 1 | 3       | 1 | 2:01.36       |  |
| 3                   | 1 | 5       | 1 | 2:01.37       |  |
| C                   | 1 | 5       | 1 | 2:01.40       |  |
| B                   | 1 | 6       | 1 | 2:02.23       |  |
| 4                   | 1 | 6       | 1 | 2:02.26       |  |
| A                   | 1 | 6       | 1 | 2:02.27       |  |
| A                   | 1 | 2       | 1 | 2:04.05       |  |
| 5                   | 1 | 2       | 1 | 2:04.07       |  |
| B                   | 1 | 2       | 1 | 2:04.11       |  |
| C                   | 1 | 7       | 1 | 2:10.62       |  |
| 6                   | 1 | 7       | 1 | 2:10.78       |  |
| A                   | 1 | 7       | 1 | 2:10.81       |  |
| C                   | 1 | 8       | 1 | 2:11.54       |  |
| 7                   | 1 | 8       | 1 | 2:11.56       |  |
| B                   | 1 | 8       | 1 | 2:11.62       |  |
| B                   | 1 | 1       | 1 | 2:12.37       |  |
| 8                   | 1 | 1       | 1 | 2:12.38       |  |
| C                   | 1 | 1       | 1 | 2:12.41       |  |

| Results         |    |         |
|-----------------|----|---------|
| 53 H 1 M 200 FR |    |         |
| Ra              | La | Time    |
| 1               | 4  | 1:58.43 |
|                 | M1 | 1:58.40 |
|                 | M2 | 1:58.47 |
|                 | M3 | 1:58.43 |
| 2               | 3  | 2:01.35 |
|                 | M1 | 2:01.36 |
|                 | M2 | 2:01.35 |
|                 | M3 | 2:01.29 |
| 3               | 5  | 2:01.37 |
|                 | M1 | 2:01.35 |
|                 | M2 | 2:01.37 |
|                 | M3 | 2:01.40 |
| 4               | 6  | 2:02.26 |
|                 | M1 | 2:02.27 |
|                 | M2 | 2:02.23 |
|                 | M3 | 2:02.26 |
| 5               | 2  | 2:04.07 |
|                 | M1 | 2:04.05 |
|                 | M2 | 2:04.11 |
|                 | M3 | 2:04.07 |
| 6               | 7  | 2:10.78 |
|                 | M1 | 2:10.81 |
|                 | M2 | 2:10.78 |
|                 | M3 | 2:10.62 |
| 7               | 8  | 2:11.56 |
|                 | M1 | 2:11.56 |
|                 | M2 | 2:11.62 |
|                 | M3 | 2:11.54 |
| 8               | 1  | 2:12.38 |
|                 | M1 | 2:12.38 |
|                 | M2 | 2:12.37 |
|                 | M3 | 2:12.41 |

**EXAMPLE 6:** Relay event with a "Relay Changeover Judging Device" in operation.

| ARES 21             |   |         |   |              |  |  |
|---------------------|---|---------|---|--------------|--|--|
| OMEGA Sports Timing |   |         |   |              |  |  |
| EVENT: 55           |   | HEAT: 1 |   |              |  |  |
| P                   | H | L       | L | 15/11/2007   |  |  |
| L                   | A | A       | A | 11.03:51.771 |  |  |
| A                   | R | N       | P |              |  |  |
| C                   | R | E       |   |              |  |  |
| E                   | S | E       |   | PROG: AUTO   |  |  |
| 1                   | 1 | 4       | 1 | 55.40        |  |  |
| R                   | 1 | 4       | 1 | 0.03         |  |  |
| 2                   | 1 | 3       | 1 | 56.17        |  |  |
| R                   | 1 | 3       | 1 | 0.02         |  |  |
| 3                   | 1 | 6       | 1 | 56.96        |  |  |
| R                   | 1 | 6       | 1 | 0.08         |  |  |
| 4                   | 1 | 2       | 1 | 57.22        |  |  |
| R                   | 1 | 2       | 1 | 0.08         |  |  |
| 5                   | 1 | 7       | 1 | 58.21        |  |  |
| R                   | 1 | 7       | 1 | 0.10         |  |  |
| 6                   | 1 | 5       | 1 | 58.99        |  |  |
| R                   | 1 | 5       | 1 | 0.08         |  |  |
| 7                   | 1 | 1       | 1 | 59.00        |  |  |
| R                   | 1 | 1       | 1 | 0.09         |  |  |
| 8                   | 1 | 8       | 1 | 59.45        |  |  |
| R                   | 1 | 8       | 1 | 0.67         |  |  |
|                     |   |         |   |              |  |  |
| 1                   | 1 | 3       | 2 | 1:49.29      |  |  |
| R                   | 1 | 3       | 2 | 0.05         |  |  |
| 2                   | 1 | 4       | 2 | 1:51.32      |  |  |
| R                   | 1 | 4       | 2 | 0.04         |  |  |
| 3                   | 1 | 2       | 2 | 1:51.37      |  |  |
| R                   | 1 | 2       | 2 | -0.42        |  |  |
| 4                   | 1 | 6       | 2 | 1:52.23      |  |  |
| R                   | 1 | 6       | 2 | 0.12         |  |  |
| 5                   | 1 | 7       | 2 | 1:52.26      |  |  |
| R                   | 1 | 7       | 2 | 0.09         |  |  |
| 6                   | 1 | 5       | 2 | 1:54.27      |  |  |
| R                   | 1 | 5       | 2 | 0.03         |  |  |
| 7                   | 1 | 1       | 2 | 1:54.07      |  |  |
| R                   | 1 | 1       | 2 | 0.11         |  |  |
| 8                   | 1 | 8       | 2 | 1:56.52      |  |  |
| R                   | 1 | 8       | 2 | 0.07         |  |  |
|                     |   |         |   |              |  |  |
| 1                   | 1 | 4       | 3 | 2:41.62      |  |  |
| R                   | 1 | 4       | 3 | 0.09         |  |  |
| 2                   | 1 | 3       | 3 | 2:44.81      |  |  |
| R                   | 1 | 3       | 3 | 0.03         |  |  |
| 3                   | 1 | 5       | 3 | 2:46.54      |  |  |
| R                   | 1 | 5       | 3 | 0.07         |  |  |
| 4                   | 1 | 6       | 3 | 2:51.56      |  |  |
| R                   | 1 | 6       | 3 | -0.06        |  |  |
| 5                   | 1 | 2       | 3 | 2:52.62      |  |  |
| R                   | 1 | 2       | 3 | 0.05         |  |  |
| 6                   | 1 | 7       | 3 | 2:53.37      |  |  |
| R                   | 1 | 7       | 3 | 0.02         |  |  |
| 7                   | 1 | 1       | 3 | 2:55.38      |  |  |
| R                   | 1 | 1       | 3 | 0.07         |  |  |
| 8                   | 1 | 8       | 3 | 2:57.41      |  |  |
| R                   | 1 | 8       | 3 | 0.15         |  |  |
|                     |   |         |   |              |  |  |
| 1                   | 1 | 4       | 4 | 3:35.02      |  |  |
| 2                   | 1 | 5       | 4 | 3:36.29      |  |  |
| 3                   | 1 | 3       | 4 | 3:39.71      |  |  |
| 4                   | 1 | 6       | 4 | 3:41.96      |  |  |
| 5                   | 1 | 2       | 4 | 3:42.90      |  |  |
| 6                   | 1 | 8       | 4 | 3:44.17      |  |  |
| 7                   | 1 | 1       | 4 | 3:46.83      |  |  |
| 8                   | 1 | 7       | 4 | 3:51.34      |  |  |

The "R" in the place column is the "reaction time".

All takeoffs on first changeover are legal. That is, no negative reaction times

Lane 2 on second changeover indicates a break or a negative reaction time of - 0.42

Lane 6 on third changeover indicates a "break" or a negative reaction time of - 0.06

| ARES 21             |    |         |
|---------------------|----|---------|
| OMEGA Sports Timing |    |         |
| Swimming : 1.15     |    |         |
| Results             |    |         |
| 55 H 1 M 4x100 m FR |    |         |
| Ra                  | La | Time    |
| 1                   | 4  | 3:35.02 |
| 2                   | 5  | 3:36.29 |
| 3                   | 3  | 3:39.71 |
| 4                   | 6  | 3:41.96 |
| 5                   | 2  | 3:42.90 |
| 6                   | 8  | 3:44.17 |
| 7                   | 1  | 3:46.83 |
| 8                   | 7  | 3:51.34 |

## **RULES**

The following Rules include the functions of the electronic timing area and the duties and responsibilities of the Technical Officials appointed to officiate in this area.

SW2.1.7, SW2.1.8 and SW2.1.9: DUTIES OF THE REFEREE.

SW11. DETERMINATION OF TIMES AND PLACINGS.

SW13. AUTOMATIC OFFICIATING PROCEDURE.

FR4. AUTOMATIC OFFICIATING EQUIPMENT. (Facilities Rules)  
(Fina)