

# ProLog – Race Management System

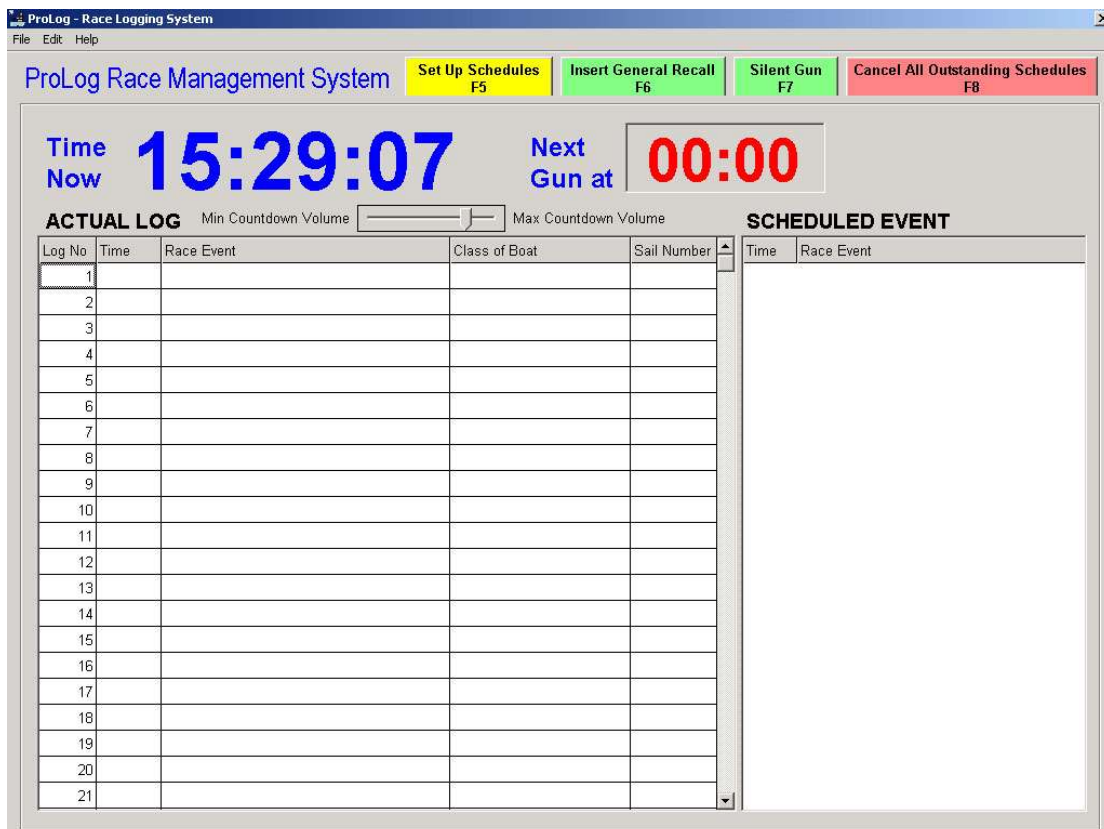
Issue (34) of the RYA Race Management Newsletter was passed to me by one of our club's PROs. The article on a computerised light start system installed at Fowey interested me. My name is Mike Rothery and a past Commodore of Datchet Water Sailing Club. I recently developed an electronic system that, I believe will be of interest to others.

Datchet bought a new committee boat in March 2002 after the old one was damaged beyond economic repair during a storm. A new fishing vessel was purchased and adapted to meet the specific role as a racing committee boat. The boat was selected due to its spacious external decks designed for fishing. The layout also incorporates a dry cuddy/wheelhouse where a substantial chart/computer table has been installed. Being below decks, it is easy to operate a laptop computer with minimum glare from the sun. It is also dry and an on-board 240-volt power system has been installed. This gives a laptop computer plenty of power without the need to use its internal battery.

The system I developed is essentially software based. It runs on a standard PC under Windows. The computer is also connected to the committee boat's horns and horn switch using the standard RS232 computer interface. This means that the computer can be plugged into the system when needed. An on-shore horn simulator has also been built for training the club's race officers.

Fundamentally, the software provides a race officer with an electronic log sheet of real times. The current time is shown constantly "ticking" every second.

The following diagram shows the ProLog screen layout.



## Starting Races

The right side of the screen is dedicated to starting races. The computer is connected to the committee boat's electric horns so it can automatically fire them during a start sequence, if the Race Officer is happy with this. At Datchet, we use a classic sequenced start where the start time for one race is also the warning time for another. ProLog automatically programs the whole start sequence into the right portion of the display. Fifteen seconds before a horn is sounded, ProLog announces a countdown using the computer's sound facility. A human speech countdown warns the race team before ProLog fires the horn. A graphic representation of the flags to be hoisted and/or lowered is also displayed on the screen. Once the horn has been fired, Prolog records the event in its electronic log sheet.

A typical start sequence would be as follows:- (Note the graphic representation of the flags to be hoisted/lowered and the rest of the scheduled sequence in the right portion of the screen – red text)

**ProLog Race Management System**    **Set Up Schedules F5**    **Insert General Recall F6**    **Silent Gun F7**    **Cancel All Outstanding Schedules F8**

**Time Now** **16:07:04**    **Next Gun at** **16:08**    **Flag**  **and**  **Flag**  
**Down**    **Up**

**ACTUAL LOG**    Min Countdown Volume     Max Countdown Volume

Log No	Time	Race Event	Class of Boat	Sail Number
1	16:03:00	1 (Start 1) Up		
2	16:04:00	P (Prep) Up		
3	16:07:00	P (Prep) Down		
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				

**SCHEDULED EVENT**

Time	Race Event
16:08	1 (Start 1) Down & 2 (Start 2) Up
16:09	P (Prep) Up
16:12	P (Prep) Down
16:13	2 (Start 2) Down & 3 (Start 3) Up
16:14	P (Prep) Up
16:17	P (Prep) Down
16:18	3 (Start 3) Down & 4 (Start 4) Up
16:19	P (Prep) Up
16:22	P (Prep) Down
16:23	4 (Start 4) Down & 5 (Start 5) Up
16:24	P (Prep) Up
16:27	P (Prep) Down
16:28	5 (Start 5) Down

## Recalls

ProLog fires the horns to start the race. If a recall is required, the race officer will manually fire the horns again (once for an individual recall – twice for a general). This generates extra log entries in ProLog's electronic log. As far as ProLog is concerned, an

individual recall is just another event whilst a general recall requires a new sequence to be added (or an existing one modified) to the right hand portion of the display.

## Race Logging and Finishing

Each time the race officer fires his horns an event is generated and input into the computer. The software stores the time the event took place and the race officer can, optionally, enter any further information he wishes. This is particularly useful during the finish of a race. All the race team have to do is record the sail numbers – finish times are recorded by the computer. At any time other columns in the electronic log sheet can be filled in.

If the race team decide to enter all the data into the computer, a simple drop down list appears against the classes' column. A "walk down" facility assists the operator with data entry. Careful consideration has been made to use of the keyboard. On the water, keystrokes are easier to action than mouse clicks. Consequently, all functions can be executed by just using the keyboard.

The following diagram shows the ProLog screen during the finish of a typical race. (Note the drop down list of classes to assist entry).

**ProLog Race Management System**    Set Up Schedules F5    Insert General Recall F6    Silent Gun F7    Cancel All Outstanding Schedules F8

**Time Now** **15:37:56**    **Next Gun at** **00:00**

**ACTUAL LOG**    Min Countdown Volume    Max Countdown Volume    **SCHEDULED EVENT**

Log No	Time	Race Event	Class of Boat	Sail Number
1	15:36:35		Wayfarer	12345
2	15:36:38		Wayfarer	32132
3	15:36:42		Laser	123123
4	15:36:45		Hobie 16	654322
5	15:37:06		Hurricane 5.9	437
6	15:37:18		Cherub	
7			Canoe (Int.)	
8			Catapult	
9			Cherub	
10			Condor	
11			Contender	
12			Cruz Classic	
13			Dart 15	
14			Dart 16	
15				
16				
17				
18				
19				
20				
21				

A facility has been included to record an event at any time during the race without sounding any horns. If the race officer sees an incident or wants to record anything during a race he can fire a "silent gun". This creates an event in the same way as if he had fired the gun. He can then input the event into the log in the usual way. Using this technique he can record the exact time of an incident.

## **Output**

When the racing is over, the laptop computer is returned to the clubhouse where it is connected to a printer and the log sheets are printed. The software separates the start times, any race events and the finish times to assist entry into the club's race results system.

Electronic log sheets can also be saved and retrieved at a later date.

## **Suggested Additions**

A journal/ticket printer could be fitted to the computer, which would print a line of log information every time the horns are sounded. At Datchet we originally planned to incorporate this facility but have not yet found the need for it.

At some stage in the future, we expect to add a facility to automatically update the club's race results system with the data collected by ProLog.

Throughout ProLog's development careful thought has been taken to provide the race officer with a useful system without taking control away from him. For example scheduled events can be disabled and control returned to manual by pressing a single button. Also in its default condition, ProLog is a simple logging device, which works passively in the background.