AUSTRALIAN FLYBALL ASSOCIATION

EJS Lights
User Manual

Version - 1 February 2023

Contents

Section 1: Introduction to the EJS

1.1. Description

An Electronic Judging System (EJS) has become an essential part of Australian Flyball because the speed of the action is such that the unaided human eye is not capable of determining events such as start faults, early passes and team run times with the accuracy required. An EJS incorporates a system of electronic and other equipment that is capable of consistently working to within the required timing accuracy.

The AFA owns eight EJS, or light sets, that enable Flyball events to be held by AFA affiliated clubs and teams in the States and Territories in which Flyball has a presence. Each EJS contains the essential equipment to enable an event to be held in a Flyball ring of two lanes.

Each EJS is assigned to a Flyball state or territory. Current assignments are:

- ACT: 1 set
- NSW: 2 sets
- Queensland: 1 set
- South Australia: 1 set
- Tasmania: 1 set
- Victoria: 2 sets

An AFA Lights Set comprises:

- A Signature Flyball EJS, manufactured by Farmtek Timing Systems in the USA. The Signature EJS is the AFA's current (2nd generation) standard for competition Flyball and comprises electronic and mechanical equipment as follows:
    - Electronic equipment (listed for 2 lanes including spares where noted):
        - Start/finish line Poles – 3 Transmitter (black tipped) poles and 5 Receiver (green tipped) poles. Includes one spare of each type.
        - Light trees – 2.
        - Large display panels – 2.
        - Display panel receivers – 2.
        - Polaris Timing and Control console – 1
        - Amplifier/speaker unit including audio cable – 1
        - Judge's wireless handswitch – 1
        - Plug in chargers for light trees – 2
        - Plug in power supplies for display panels – 2 (newer sets only)

    - Associated equipment:
        - Double pole bases – 2
        - Single pole bases – 2
        - Tripod with crossarm suitable for display panels – 2
        - Tripod with crossarm suitable for light trees – 1
        - Battery clips for 6 AA cells – minimum 6.
        - Pole spacer clips – minimum 2
        - Foam lined carry case for display panel – 2
        - Foam lined carry case for other electronics equipment – 2
        - Soft carry cases for tripod assemblies – 2 (typically)
        - Soft carry case for pole bases – 1
        - Carry case for amplifier/speaker – 1
- Electrical equipment required to safely provide 230 volt mains supply to the Signature EJS:
    - Surge protector (equipment protection) – 1
    - Residual Current Device or RCD (personnel protection) – 1 (in most cases, built in to a power board)
    - Heavy duty power leads – Typically 3 (number may vary between sets)
    - Short linking power lead with piggy back plug for display panels– typically 1
    - 4 or 6 outlet power boards - Typically 2 (may vary between sets)
    - Carry case or bag for electrical equipment
- Medical and dog height measurement equipment:
    - Defibrillator – 1
    - Heat Stress Meter – 1
    - First Aid kit
    - Ulna measurement device – 2

The Signature EJS is the heart of an AFA light set. It is designed for a Flyball ring with a comprehensive range of features and capabilities including:

- Start sequencing and signalling (visual and audible), for both scratch and handicap formats
- Measurement and display of start times, individual dog times and team times to a precision of 1/1000 second
- Recall capability for previous heat times
- Race and heat number tracking

- Heat win signalling (visual)
- All wireless communications except for amplifier/speaker
- All battery operation except for amplifier/speaker and large display panels
- Warmup time countdown
- Detecting and signalling (visual and audible) faults including:
    - Start faults,
    - Early passes,
    - Breakouts
    - Delayed passes
- Large format displays for competitors and spectators
- Judge's remote wireless control capability
- Audible signalling may be selectively enabled or disabled
- Start fault may be preset on either or both lanes to defeat false start

AFA light sets may only be used at events sanctioned by the AFA National Committee.

The AFA maintains an inventory of the contents of each light set, which clubs are required to check and report at each handover between clubs. While all sets are nominally the same, there are minor differences due partly to different generations of the Signature system and partly to the development of the set of electrical equipment in each State or Territory.

This manual primarily covers the setup and operation of the Signature EJS.

1.2. EJS Operation and Controls

The heart of each AFA Lights Set is the Signature EJS, which is controlled by software built into the Polaris timing console, also known as the Console, the Control Console or the Timing Console.

The console provides the interface with the operators (Timekeepers in the AFA environment) and is fitted with:

- Two LCD displays to provide operational data to the timekeepers,
- A prominent Start/Stop button,
- A membrane keypad for accessing user programmable functions,
- Audio Out jack,
- Data In and Data Out jacks.

The underlying operating software for controlling all devices in the Signature EJS in accordance with the rules of Flyball racing has been pre-programmed into the console. This software is not accessible to operators.

Operational parameters may be accessed and adjusted via a menu-based system.

1.3. Polaris Timing Console Menu System

A menu system is built into the console for access to user-programmable parameters and functions via the keypad.

NOTE: Throughout this manual, keypad presses are indicated by being typed in *italics*.

There are four basic navigation rules for accessing and scrolling through the menu system via keys on the keypad:

- *Setup:* enter the menu system,
- *Next Choice:* bypass current choice as displayed in the LCD display by stepping forward (down) one position in current menu.
- *Prev* [previous] *Choice:* bypass current choice by stepping backward (up) one position in current menu.
- *Enter:* select current choice.

Two special menus, the Advanced menu and the Protected menu, are accessible via the Main menu. These menus give access to parameters that could cause problems in the system if entry errors are made, so they should only be accessed by experienced operators.

There is protection for the Protected menu in the form of a passcode for access.

1.4. Overview of Menu:

<table>
<tr><th colspan="2">Main Menu</th><th colspan="3">Displayed option</th></tr>
<tr><td>Navigate</td><td>Select</td><td colspan="3">(Refer next section for detailed descriptions)</td></tr>
<tr><td>Setup</td><td>Enter</td><td colspan="3">Set Warmup time</td></tr>
<tr><td rowspan="13">PRESS
Next Choice to scroll DOWN the menu
OR
Prev Choice to scroll UP the menu</td><td>Enter</td><td colspan="3">Set Breakout times</td></tr>
<tr><td>Enter</td><td colspan="3">Set Handicap times</td></tr>
<tr><td>Enter</td><td colspan="3">Set Race (& Heat) Number</td></tr>
<tr><td>Enter</td><td colspan="3">Check Battery status</td></tr>
<tr><td rowspan="10">Enter</td><td colspan="3">⚠ Advanced Menu. USE CAUTION!!</td></tr>
<tr><td>Navigate</td><td>Select</td><td>Displayed option</td></tr>
<tr><td rowspan="9">PRESS
Next Choice to scroll DOWN the menu
OR
Prev Choice to scroll UP the menu</td><td>Enter</td><td>Start fault options</td></tr>
<tr><td>Enter</td><td>Speaker options</td></tr>
<tr><td>Enter</td><td>Scoreboard options</td></tr>
<tr><td>Enter</td><td>Program eyes & handswitch</td></tr>
<tr><td>Enter</td><td>Program light tree</td></tr>
<tr><td>Enter</td><td>Program scoreboards</td></tr>
<tr><td>Enter</td><td>Reset light tree</td></tr>
<tr><td>Enter</td><td>Exit Setup</td></tr>
<tr><td rowspan="13">Enter</td><td colspan="3">⚠ Protected Menu (Passcode 359). USE CAUTION!!</td></tr>
<tr><td>Navigate</td><td>Select</td><td>Displayed option</td></tr>
<tr><td rowspan="11">PRESS
Next Choice to scroll DOWN the menu
OR
Prev Choice to scroll UP the menu</td><td>Enter</td><td>Enable Handicap option</td></tr>
<tr><td>Enter</td><td>Disable Handicap option</td></tr>
<tr><td>Enter</td><td>Set Time Format</td></tr>
<tr><td>Enter</td><td>Set Pass time</td></tr>
<tr><td>Enter</td><td>Set Tie Window</td></tr>
<tr><td>Enter</td><td>Set Staging time</td></tr>
<tr><td>Enter</td><td>Set Warmup off start</td></tr>
<tr><td>Enter</td><td>Warmup off splt</td></tr>
<tr><td>Enter</td><td>Warmup R-SB on</td></tr>
<tr><td>Enter</td><td>Warmup R-SB off</td></tr>
<tr><td>Enter</td><td>Exit Menu</td></tr>
<tr><td>Enter</td><td></td><td></td><td></td></tr>
</table>

The order of detailed descriptions in the following sections is the same as the order in the menu overview table.

1.5. Main Menu Functions

Navigation on the Polaris timing console: *Setup* to enter main Menu; *Next Choice* or *Prev Choice* to bypass a menu item; *Enter* to select a menu item.

1.5.1. Warmup (countdown) timer

This feature assists the Judge to maintain a consistent racing rate by counting down the pre-race warm up period and displaying the remaining time on the console and on the rear displays.

Setting the countdown time period on the Polaris timing console, press:

- *Setup* (console displays Set Warmup Time)
- *Enter*.
- Key in the desired time period in M:SS(Minutes: Seconds) format.
    - Example: to key in the AFA standard 90 second warmup (1 minute 30 seconds), press *Setup Enter* 1 3 0 *Enter*.
- *Enter*.

Operating the timer:

- *Countdown* to start the timer.
- *Clear time* to cancel the countdown at any time.

Notes:

- The countdown time appears on the console immediately after pressing the button but it takes 15 seconds to appear on the rear displays.
- The displays will appear about ½ second out of sync with each other. This is normal.
- The countdown on the rear displays is interrupted by warm-up times as dogs or people break the beams. This allows teams to see what their dogs are running during the warm up. The countdown continues in the background and each display reverts to showing the remaining time 2 or 3 seconds after the beam was broken.
- When the countdown reaches zero, the horn will sound and the console will reset and be ready to race, all else being ready.

1.5.2. Breakouts

The timing system tracks and indicates breakouts automatically. The Timekeepers enter the breakout times for each lane prior to the start of each race. Each lane's breakout time can be set independently, but retrieval always only retrieves the Right lane value.

To set the breakout times on the timing console press:

- *Setup*
- *Next Choice*
- *Enter*
- Key in Left Breakout time in ##.## seconds format
- *Enter*
- Key in Right Breakout time in ##.## seconds format
- *Enter*

Done!

Notes:

- Breakouts can be set to a maximum of two decimal points, eg 21.12.
- The console carries over the last Breakout time from race to race until updated. This makes it easy when several races with a divisional breakout are grouped together, but it can also have unwanted results if the timing table forgets to update the breakout time.
- Setting the breakout time to 0.00 disables the breakout functionality of the timing system for that lane. This is used for Regular class Division 1, which has no breakout.
- A breakout is indicated by the letters B/O on the console display and a flashing red light on the light tree for that lane.

1.5.3. Handicap Starting

The timing system provides for handicap racing by delaying the start of one lane in relation to the other in accordance to a programmed delay. Under AFA rules, the delay is the difference in seed times between the two teams.

On the Polaris timing console, press:

- *Setup*
- *Next Choice* TWICE (console displays Set Handicap)
- *Enter*

- Key in the Handicap time for the Left lane in ##.# seconds format
- *Enter*
- Key in the Handicap time for the Right lane in ##.# seconds format
- *Enter*.

Done!

Notes:

- Handicap in the faster lane will always be set to 0.0 and handicap in the slower lane will be set to the difference in the seed times. Under the AFA's system, both lanes must not have a handicap time, otherwise the delay may not be as intended.
- Handicaps are stored to a maximum of one decimal point, eg 9.8 seconds
- The console carries over Handicap times for each lane from race to race until updated.
- To disable, ie for a non-handicap race, set the handicap times in both lanes to 0.0
- The maximum handicap that the system can implement is 10.0 seconds. Races should not be set up with a handicap over 10 seconds; entering a value over 10.0 will result in an actual handicap of 10.0 seconds.
- During the last software update it was noted that the process of loading the new software "hid" the Handicap option from the Setup menu. It had to be restored by going into the Protected menu. It only had to be done the first time the Handicap was used after the software upgrade.

1.5.4. Set Race Number

Use of the race number is optional and the timing system will continue to operate normally if the race and heat number are just allowed to increment at their own pace without regard to actual races and heats.

The race and heat numbers are used to tag the various recorded times to whichever race and heat they apply. This is useful when scrolling back through past times to find a missed time and also when a computer interface is used to ensure that recorded times are credited to the correct races and teams.

If used, the race number is incremented by pressing the Race/Go button before the start of thefirst heat in each race to set the race number. Occasionally, it may be necessary to manually set the race/heat number. This may occur when a heat is rerun, when races are run out of order or when the race number is inadvertently incremented too far.

To set the race/heat number manually on the Polaris timing console, press:

- *Setup*
- *Next Choice* THREE times
- *Enter*
- Key in the race/heat number in the form rrRH where rrR is the Race number and H is the heat number. For example, to enter Race 12, Heat 3 – key in 123 and to enter Race 105 Heat 1 key in 1051.
- *Enter*

Done! The current race/heat number will now be reflected correctly in the upper Display window.

1.5.5. Battery Status

The status of the battery in the timing console can be checked by pressing:

- *Setup*
- *Next Choice* FOUR times
- *Enter*
- The battery relative status is displayed.
- *Setup* (to exit)

Done!

Note: The battery status is not accurate for the first 20 minutes or so after the console is powered on.

1.6. Advanced Menu Functions

WARNING: Mistakes in the Advanced Menu can cause major operating problems. **Do not proceed** unless you are sure of what you are doing.

Notes:

- Where a setting is selected from a preset range of values, an asterisk (*) in the display indicates which value is the currently active one. Applies for the first three items in the menu.
- To bypass an option, press *Next Choice*.

To access Advanced Menu, press:

- *Setup*

- *Prev Choice* THREE TIMES (console displays Advanced Setup)
- *Enter*

NOTE: All the navigation commands below assume you are in the Advanced Menu.

1.6.1. Start fault Options

In “normal” operation, the timing system automatically tracks false starts and resets the system ready for a new start on the first false start in each lane. It indicates a start fault by leaving the top red light on in that lane when ready for a start.

Occasionally, it may be necessary to manually set or clear a start fault due to a team being non-competitive or the restarting of a heat or to the timing table inadvertently clearing a start fault.

A start fault can be set two ways: First, the judge may elect to simply sequence the lights (while asking the teams to hold their dogs) to either clear or set the status in the relevant lane. This may require you to manually reset the race/heat number if you are using this function.

Alternatively, the start fault status can be set from the Console. Navigate to Advanced Menu and press:

- (console displays Start Faults)
- *Enter*
    - There are four Start Fault options to select from: None, Left, Right or Both
    - Navigate using *Next Choice / Prev Choice* to desired option then
- *Enter*
- *Clear Time* to return to system ready to race.

Note:

- Manual setting of start fault(s) via the menu only holds for one start
- If both lanes need to be controlled, a simpler and quicker method is to use the *Eyes On* and *Eyes Off* keys.

.

1.6.2. Speaker Options

To set the speaker options on the Polaris timing console, navigate to Advanced Menu and press:

- *Next Choice* (Console displays Speaker Options)

- *Enter*
    - There are three speaker options that can be individually set ON or OFF.
    - The current setting is indicated with an asterisk * to the left of the option.
    - “Stage Beep” is the beep that sounds as each light comes on during the start cadence. AFA rules require Stage Beep to be ON for non-handicap racing and OFF for handicap racing.
    - “Start Fault” is the buzzer that sounds when a false start occurs. AFA rules require Start Fault buzzer to be ON for non-handicap racing and OFF for handicap racing. The one-touch start faults on/off system manages this automatically.
    - “Pass Fault” is the beep that sounds when an early pass is detected. This is helpful to line stewards and to teams to alert them to check the tree for the lane incurring the infraction. AFA rules require Pass Fault beep to be always ON.
    - To make a change, navigate using *Next Choice* and *Prev Choice* to the desired value and press *Enter*
    - If more than one change is required, repeat the Navigation / *Enter* sequence as required.
- *Setup* or *Next Choice* – *Enter* to exit the menu when finished.

The following sections should not be selected unless the system isn’t working properly.

1.6.3. Scoreboard options:

Navigate to Advanced Menu and press

- *Next Choice TWICE (Console displays TBA)*
- *Enter*
- *(TBA)*

1.6.4. Programming eyes (poles) and hand switch.

Should only be carried out if a spare pole has to be used or if the system isn’t registering one or more of the start poles, passing poles or the hand held remote and all other possible problems such as faulty batteries have been checked.

When programming the poles, make sure that only one pole at a time is tested.

Navigate to Advanced Menu and press:

- *Next Choice* THREE times (Console displays Prog Eyes/HndSw)
- *Enter*
    - In this menu, you can scroll through "Left Start Eye," "Left Pass Eye," etc.
    - Press *Enter* on the one you want to program, then break the beam as instructed. The timer will show an ID code for a couple of seconds and then prompt you with the next pole to program.

Notes: To prevent accidents, do this in a controlled environment with just one pair of poles switched on at a time.

1.6.5. Programming light tree.

With the light tree switched on, press and hold the brightness button until it starts flashing on its own then release the button.

Navigate to Advanced Menu and press:

- *Next Choice* FOUR times (Console displays Prog Light Tree)
- *Enter* The light tree should pick up the console and stop flashing. This indicates it has accepted the programming.

1.6.6. Programming scoreboards (large display panel receivers).

Turn off everything including poles (make sure the poles are really off), with the exception of the one display that you are trying to reprogram and the timing Console. Make sure any co-located EJS (such as other flyball ring, agility set up close by) are also off.

> Note: It is not absolutely necessary to turn everything off for this procedure if you are familiar with it. However, if you are doing it for the first time or are not entirely familiar with the steps, it is recommended to turn everything off so you can take your time. This is particularly true if similar re-programming is occurring in another ring

Navigate to Advanced Menu and press:

- *Next Choice* FIVE times (Console displays Prog Scoreboard)
- *Enter*
- *Next Choice* until the Console displays the Scoreboard you want to reprogram (L or R)

On the receiver that you want to reprogram:

- Open the sliding cover on the bottom of the receiver

- Press and release the small black button with the silver surround. Do NOT hold the button down. Press and release!

Success is indicated by:

- A bar (ie "-") bouncing from one side of the display to the other.
- The prompt on the Head Table Console displaying "XMIT L (or R) Scoreboard".

Complete the procedure as follows:

- Press *Enter* on the Timing Console – the dash should turn into numbers.
- Press *Setup* to exit the menu.
- Close up the sliding door on the receiver.
- Turn all other equipment back on.

1.6.7. Reset light tree:

Navigate to Advanced Menu and press:

- *Next Choice* SIX times (Console displays Prog Scoreboard)
- *Enter*
- *TBA*

1.6.8. Exit setup:

Navigate to Advanced Menu and press:

- *Next Choice* or *Prev Choice* until the Console displays Exit Menu (TBC)
- *Enter*

1.7. Protected Menu Functions

WARNING: Mistakes in the Protected Menu can cause major operating problems. **Do not proceed** unless you are sure of what you are doing.

Procedure to access the Protected Menu:

- *Setup.*
- *Previous Choice* TWICE.

- *Enter* to go into Protected menu.
- Key in password (359 – numeric, or FLY – alpha)
- *Enter.*

Notes:

- An asterisk (*) in the display indicates the currently active setting where there is a choice from a preset list.
- To bypass an option displayed in the console display, press *Next Choice* (or *Prev Choice* to go up the menu rather than down).
- To select the option displayed in the console display, press *Enter*.
- The instructions below all start after entry to the Protected Menu.

1.7.1. Enable Handicap system:

Navigate to Protected Menu and press:

- *Next Choice* to find the option.
- *Enter* to turn handicaps on.

This is the AFA standard and should not need to be changed unless the main software has been updated.

1.7.2. Disable Handicap system:

Navigate to Protected Menu and press:

- *Next Choice* to find the option.
- *Enter* to turn handicaps off

Under AFA rules, this option is NOT used.

1.7.3. Set time format:

Navigate to Protected Menu and press:

- *Next Choice* TWICE
- *Enter*
- *Enter* to set to 3 decimal places. This is the AFA standard and should not need to be changed.

Alternative setting is 2 decimal places, but this is not used under AFA rules.

1.7.4. Set pass time:

Navigate to Protected Menu and press:

- *Next Choice* THREE times to find the Pass Time option.
- *Enter*
- Key in pass safety time to 1.50 seconds then
- *Enter*

1.5 seconds is the current AFA standard and should not be changed.

1.7.5. Set tie window:

Navigate to Protected Menu and press:

- *Next Choice* FOUR times to find the option.
- *Enter*
- Key in tie window to less than .004 seconds then
- *Enter*

Less than 0.004 seconds is the current AFA standard and should not be changed.

1.7.6. Set staging time:

Navigate to Protected Menu and press:

- *Next Choice* FIVE times to find the option.
- *Enter* to set staging time to 1.0 seconds (TBA) then
- *Enter*

1.0 seconds is the AFA standard and should not be changed. The alternative staging time is 1.2 seconds, which is not used in Australia.

1.7.7. Set Warmup off start

Navigate to Protected Menu and press:

- *Next Choice* SIX times to find this option (Note: quicker to use *Prev Choice*. Watch the display to find the correct choice)
- Function not known. Do not change unless under direction.

1.7.8. Warmup off splt

Navigate to Protected Menu and press:

- *Next Choice* SEVEN times to find this option. (Note: quicker to use *Prev Choice*. Watch the display to find the correct choice)
- Function not known. Do not change unless under direction.

1.7.9. Warmup R-SB on

Navigate to Protected Menu and press:

- *Next Choice* EIGHT times to find this option. (Note: quicker to use *Prev Choice*. Watch the display to find the correct choice)
- This option is marked with an asterix in the standard AFA configuration.
- Function not known. Do not change unless under direction.

1.7.10. Warmup R-SB off

Navigate to Protected Menu and press:

- *Next Choice* NINE times to find this option. (Note: quicker to use *Prev Choice*. Watch the display to find the correct choice)
- Function not known. Do not change unless under direction.

1.7.11. Exit setup:

- *Next Choice* or *Prev Choice* as required (depending on where you start) to find this option.
- *Enter* to go back to normal menu.

1.8. Non-Menu functions

The following Polaris Timing Console functions are not accessed via the menu system.

1.8.1. Radio interference check

If the lights are playing up eg:

- Start Fault registers before dog reaches start/finish line
- Displays at back of ring not displaying correctly

- Pass Fault registers before dog reaches start/finish line
- Light tree failure (not synchronising together)

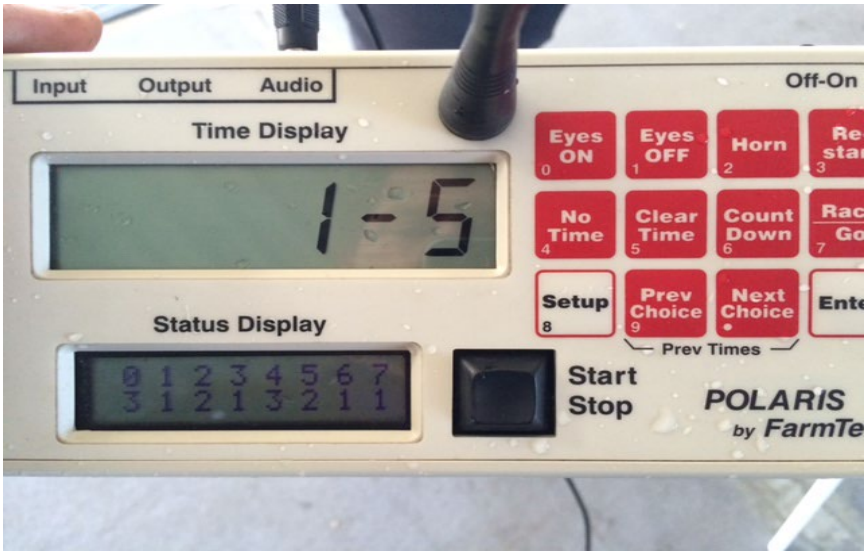
It may be due to radio interference affecting the communications between system components, which can occur when:

- Hand held radios eg walkie talkies are used in close proximity
- TV station repeater aerials in close proximity

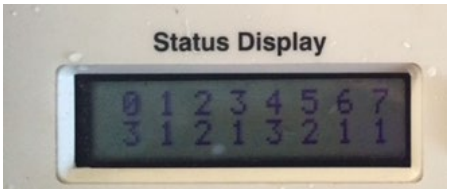
Follow this procedure to check for interference. Press in sequence:

- *Setup*
- *Prev Choice*
- *No Time*

This will start a counter of “hits” in the radio channels used by the system on a scale of 0-7 in the status display as shown below



The top row is the channels being used by the system, (eg pass pole, start pole, judges remote etc) and the bottom row shows the level of interference on each channel.



It counts the number of “hits” on each channel from the moment it is enabled until it is cleared. The number of hits recorded is a function of the level of interference and the length of time the counter is left on.

For optimal performance, the bottom row should be displaying less

than 3 interference ”hits” over a minute or so.

- *Setup* to cancel the counter and exit this mode

NOTES:

- A number of 3 or more hits in a minute may explain erratic behaviour of the lights
- There is not much you can do to eliminate interference as it is usually caused by external radio sources present at the venue.
- Incidents of interference may be reported to the AFA so they can be noted.
- A sudden high value can be caused by a start/finish beam being interrupted or a handswitch being activated.

1.8.2. Recalling missed times

It may occasionally be necessary to recall a past time from the timing system. The timing system records dog splits for the immediate previous heat and team times for up to 100 past heats.

Recall a past split time

Occasionally things happen where a dog or person inadvertently crosses the start/finish line of a team that has completed its heat prior to the judge stopping the timing system. This causes the wrong final time to be displayed for that team. This kind of retrieval must be accomplished before the next heat is run since the system only stores this dog level information for the immediately preceding heat.

- Each press of *Prev Choice* key will step backwards through the dog crosses showing the split and total elapsed team time as each dog crossed.
- The first number is the total number of dogs that have run up to this split in each lane.
- The next number is the split for that number of dogs
- and finally the elapsed time at that point in the heat (you’re probably looking for this final number – the elapsed time).

For example, the right lane completes their run in four dogs and the left lane has to rerun their fourth dog. The dog bobbles its ball on the rerun and ends up coming back down the other teams lane – incrementing their final time. The judge stops the timing system and awards a Did Not Finish (DNF) to the left lane but you now need an accurate time for the right lane. Press *Prev Choice* until you see the 4 dog total for the right lane and record the elapsed time for four dogs as their final time. *Prev Choice* and *Next Choice* will scroll forward and backward through the times.

The Console will revert to normal operation a few seconds after no keys have been pressed.

Recall a past heat time

The system also allows you to recall the total time of a past heat. This must be done before the Console is powered off as all past heat times are discarded at that time.

By repeatedly pressing the *Prev Choice* key, you can scroll back through past times.

At first, the dog splits for the immediately previous heat will be shown followed by the total time for each preceding heat.

If you are using the race/heat number functions, you can identify a past time by its race/heat number. Otherwise, you can find a past time if you know how many heats have occurred in the meantime or preferably, you know the time of the other lane or the times of the preceding and following heat – to bracket the time you're searching for.

Prev Choice and *Next Choice* will scroll forward and backward through the times.

Once you've found and recorded the time you're looking for, simply leaving the console alone for a few seconds will cause it to revert to normal operation.

2. Section 2: Setting up an EJS for racing - Unpacking and Assembly Instructions

2.1. Inventory AFA supplied equipment you have received

2.1.1. Signature components (case contents may vary slightly between different light sets):

- Qty 2 Black Display cases (one handle and two twist latches). These cases hold the large displays. Some sets may hold the display receivers and minor extras such as console stand and wet weather plastic covers.
- Qty 2 Black Electronics cases (tandem handles and three twist latches). These cases hold the poles, spare poles, console, Judge's remote, wireless receivers for the large displays, light tree assembly and charger, battery clips and minor extras such as nuts & bolts and green plastic clips.
- Qty 2 Nylon tripod cases. These two cases hold a total of three tripods – one for each large display and one for the trees.
- Qty 1 Nylon base bag. This bag holds the metal bases for the poles that will be placed at the start/finish line.
- Qty 1 Nylon audio bag. This case holds the amplifier/speaker and cable for the audiofunction of the EJS.
- Clear plastic rain covers for both display consoles & the light tree eg heavy duty clear garbage bin liner. Usually kept with the set in one of the display cases but if missing must be provided or the Signature equipment will have to be placed under cover if it drizzles or rains.

2.1.2. Electrical components:

- Qty 1 bag or case containing electrical equipment including mains surge diverter, safety switch power board, assorted power boards and extension leads. Where identified in Electrical Regulations, equipment must have a current Electrical Safety Tag.

2.1.3. Safety equipment

- Ulna measurer (2 off),
- Defibrillator
- First Aid kit
- Heat Stress Meter.

2.2. Additional (non-AFA supplied) equipment required:

- 40 Alkaline AA batteries and one 9-volt battery, which should all last for a 2-day event. Do not use rechargeable batteries as they will not reliably operate the EJS components due to slight voltage differences.
- 2 (3?) Alkaline AAA batteries for the Heat Stress Meter

- Public Address system, particularly where a Flyball event is part of a larger event and an audience is expected.
- Extra electrical equipment as necessary for safe electrical connection at your particular installation, for example extension leads, extension lead connector rain protectors, anti-trip covers or cable stands where leads run across walk ways. **Important**: All electrical equipment must be tested and tagged where appropriate.
- Ring set up equipment including ring perimeter barrier, jumps, backboards, timing table, gazebos, documentation etc as laid out in AFA Guidelines.

EDITORIAL NOTE draft section on new QR code system.

2.3. Assemble Signature equipment

Important Note: To avoid damage to poles and panel receivers in particular, DO NOT OVERTIGHTEN handwheels or butterfly nuts. It is only necessary to nip them up to secure the items against slippage.

2.3.1. Large displays / Scoreboards:

Remove the three tripods from the tripod bags. Extend the legs on each to form a sturdy tripod and gently tighten the thumbscrew to secure the legs. Do not extend the tripods above their collapsed heights until assembly is complete and they have been moved to their final location for your event.

Loosen the top thumbscrew on each tripod enough to slide the crossbar assembly into the opening. Gently tighten the thumbscrew to snug the crossbar assembly onto the tripod. Two of the crossbar assemblies will have screw style carabiner clips to secure the display panels, and the third is for the light trees. Set this tripod aside.

Unscrew the carabiner clips on one crossbar. Remove one large display panel from its case and hang it from the two carabiners. Ensure that the Plexiglas side of the display is facing away from the tripod pole. Screw the carabiners closed to secure the panel. Turn the display until it is hanging directly above one of the tripod legs (for improved stability). The power cord should be hanging freely from the display. If the grass is wet, loop the cord over the display to keep the plug dry.

The display panel needs a receiver in order to operate. The receivers are stored in the electronics cases (in some cases, may be in the display cases) and are marked L and R to identify which lane they are for. The actual panels do not have a Left or Right designation.

For the LEFT lane, position the L (Left) receiver on the crossbar closest to the db-9 socket on one end of the display and attach to the crossbar using the handwheel - **do not overtighten, if you do the thread will drive into the internal circuit board and damage it.**

Attach the db-9 plug on the receiver cable to the socket on the large display. You may wish to move the display to the rear of the Left lane at this time to avoid later confusion.

Repeat for the RIGHT lane, substituting R for L and Right for Left.

2.3.2. Poles:

Open the pole base bag and remove the four metal bases. Separate the bases into two sets with each set containing one single pole base and one double pole base.

For the LEFT lane, open the LEFT electronics case (tandem handles – three twist lock latches). Remove two white poles with green caps (**receiver** poles labelled LS [Left Start] & LP [Left Pass], and one white pole with a black cap (**transmitter** pole). Leave the one pole marked “spare” (may have a green or black cap) in the case.

Load three battery clips each with six AA Alkaline cells, taking care with orientation of the battery cells. NOTE: it is advisable to ‘spin’ the batteries when they are in the holders to make sure they are reliably contacting the connectors.

Unscrew the dark grey cap from the bottom end of each white pole and insert a battery holder into each pole. To orient the battery holder, find the green dot on the pole and align it with the green dot on the battery holder. The battery holder goes into the pole green dot end first. Screw the grey cap back onto the pole but **do not overtighten**. Ensure proper operation by rotating the black power ring on the pole to the ON position. Observe that the LED at the top of the pole lights and then return the switch to the OFF position.

Repeat for the two other Left poles.

Place the pole with the black cap into the single upright base (you may need to loosen the wing nut in the base to allow the pole to slide completely in). Ensure that the pole is fully inserted in the base and that the lenses down the pole align along the leg of the base with the arrows.

Insert the green capped poles into the double base. For light sets where the bases are slotted (older sets), make sure that the alignment studs in the poles are seated into the slots and that each pole is fully inserted in the base. For bases that do not have slots, align the poles so that the lenses point in the same direction across the lane. LS should be to the left of LP when facing the lenses on the front of the poles. This will be double checked later during the alignment step.

Gently snug the wingnut to secure each pole. **Do not overtighten the wingnuts** to prevent damage to the poles or stripping of the threads. Once both poles have been placed in the double base, take a green alignment clip from the case and snap it into the slot near the top of each green pole. The alignment clip will hold the poles parallel to one another.

Repeat for Right lane, substituting R for L and Right for Left.

2.3.3. Light Trees:

For the LEFT lane, remove the Left light tree assembly from the Left electronics case by grasping the U-shaped portion of the black shroud. Do not handle by the thin shroud and do not stand on end. The light tree should be laid down on a dry surface at any time it is not in the case or mounted on the tripod.

Place the U-shaped portion of the shroud over the stud in the crossbar of the tree tripod and secure with a wingnut. Ensure that when facing the tree such that the label is visible, the tree is at the left end of the crossbar and the middle switch in the base of the tree is set for Left.

The tree can be tested by pressing the power switch. The tree will cycle through each of its lights and then go dark. Press the power switch again to turn the tree off.

Repeat for the RIGHT lane, substituting R for L and Right for Left.

2.3.4. Charging the Light Trees:

Each light tree is fitted with a rechargeable battery that will easily last for a full day's racing on a full charge. Charging must be done before the event, ideally overnight on the night before. The charger for each tree is stored in the electronics case. Plug the charger into a 240 V outlet and the small power jack in the base of the tree. Ensure the light tree is switched OFF. Charging is indicated by the green light in the tree starting to flash 15 seconds after connection.

Each tree can be charged for up to 15 hours – **do not overcharge by leaving plugged in for longer than this**.

Full charge will be indicated by the green light going solid on.

The trees can be operated with the chargers plugged in if the internal batteries are flat, but this is NOT recommended on a regular basis because the batteries do not charge when the light tree is switched on, and over an extended time without charging the batteries will self-discharge and become inoperable and will need to be replaced.

Place the chargers back in the cases when not being used to avoid their being misplaced.

2.3.5. Polaris timing console and judges handswitch

Remove the Polaris timing console from the case (only present in one of the two electronics cases); slide the battery compartment cover out of the base and install four Alkaline AA batteries as shown in the compartment. Ensure proper operation by switching on, watch for the startup message on the display and then turn off again. Place the timing console on the timing table.

Remove the judges handswitch from the case (only present in one of the two electronics cases) slide off the battery compartment cover and install one 9v battery as shown in compartment. Ensure proper operation by pressing the

power switch and watching for the red LED next to the switch. Press the power switch again to turn it off. Hang the judge's switch by its lanyard from a thumbscrew on the tripod for the light tree.

2.3.6. Speaker / Amplifier

Remove the speaker/amplifier from its case and place it on the timing table. Connect to the timing console using the supplied cable. The cable should go in "Line 1" on the speaker/amplifier and "audio" on the timing console. Plug in the speaker/amplifier to 240 V mains and turn on withthe rocker switch located on the back panel.

The volume can be adjusted using the volume control on the amplifier and tested by turning on the timing console, waiting for the startup to complete and then pressing the "horn" button. The sound shouldbe audible to the judge but not loud enough to startle a dog.

The speaker/amplifier should be positioned at the end of the timing table closest to the runoff area and pointed toward the approximate position where the judge stands during a heat in progress. Don't point it across the line steward's position.

2.4. Install 240 Volt electrical supply cabling

Each electrical installation is unique in some way. The overriding aim must always be a SAFE electrical system. Safety applies primarily to people and dogs but also to equipment.

The AFA supplies a basic set of electrical extension leads and power boards as well as two specific electrical safety items:

- A surge diverter, which protects downstream cables and components from surges and voltage spikes that come from the 240 Volt AC supply. Originally introduced to overcome problems experienced with use of portable generators which are more prone to spikes than a mains supply, but has since been made a requirement in all cases. Comprises a black metal case with short input and output cables and a blue indicator when connected to supply.
- A Residual Current Device or RCD which normally allows power to pass through but switches it off if it detects a current leaking out of the downstream circuit, such as if a person or animal contacts a live metal component causing some of the mains current to pass through their body to the earth. The speed of the "trip" is fast enough and the trip current is small enough to be considered safe. Two versions are in use in different areas: a standalone version that does nothing else but protect, and a version built into a 4-outlet power box.

These devices must be plugged in series, ie one directly after the other, and both protect ONLY the downstream circuit, in other words they ONLY protect

devices connected to their output. They must, therefore, be the first two devices plugged into the power socket that supplies the entire Flyball system. Nothing should be plugged in upstream of the two devices other than, possibly, an extension lead bringing power in from the power socket.

The preferred connection arrangement for mains supply is:

- Standalone RCD into the originating power socket
- Surge diverter into the RCD output.
- Flyball system plugged into the surge diverter via tested and tagged extension leads and power boards.

Note: Where the RCD is built into a power board that is needed elsewhere in the system, the arrangement may be modified to:

- Surge diverter into the originating power socket.
- RCD-fitted power board into the surge diverter.
    - Where the RCD-power board is remote from the surge diverter, an extension lead may be used to connect them, but it must run between the two without branches and without any other connections.
- All Flyball equipment connected via the RCD-power board.

Unprotected trailing electrical leads are a trip hazard and an electric shock hazard when water is present, not unusual with dew-wet grass or rain. Competition organisers should ensure that cables crossing walkways are either lifted above head height or are covered with cable covers.

Where extension leads are connected one into another, it is recommended that a safety cover be placed over the plug/socket connection to protect against moisture and to reduce the chances of the plug separating from the socket.

Plugs, sockets and electrical equipment other than cables in good condition must not be allowed to lie in wet grass or water puddles.

2.5. Place the system in the ring

2.5.1. Poles:

For the LEFT lane:

Start and Pass poles - place the base with the LS and LP poles to the left of the left lane (looking towards the box). The poles should be approximately 3 feet from the center of the lane, lenses facing inwards across the left lane toward the centre of the ring. The lenses in the LS pole must align with the start/finish line and the LP pole must be on the box side of the start finish line (you will need to swap the LS and LP poles in the base if they were assembled incorrectly).

Transmitter pole - place one of the two single black tipped pole bases

between the two lanes, approximately 3 feet from the centre of the left lane, lenses facing across the lane toward the LS and LP poles. Ensure that the lenses and the legs with arrows are pointing directly at the LS pole and are aligned with the start/finish line. Ensure that both bases rest firmly on one surface (e.g. not spanning matting and floor). The bases should be adjusted to be vertical on an uneven surface using the three screw-in feet on each base. Before leaving this step, step back from the poles and make sure they are all vertical, both along the lane and across the lane.

Repeat for the RIGHT lane, substituting R for L and Right for Left.

Final check, when complete, the LS and RS poles will face each other on the left and right sides of the start/finish line respectively. The black tipped poles will also be on the start/finish line, facing away from each other. The LP and RP poles will be adjacent to and on the box side of their respective start poles.

2.5.2. Powering up:

Ensure there is a clear path between the poles in each lane. Power on all six poles by rotating the black power ring at the base of each pole. The LED at the top of the black tip poles should glow red and the LED at the top of the green tip poles should glow green (after briefly flashing red during power on). A constant red on any green tip pole indicates lack of alignment with its black tip pole. Check that the green tip pole lenses are facing toward their black tip pole, then slowly rotate the black tip pole until both Start and Pass poles show green

Ensure that all six poles are powered on and correctly aligned before leaving this step.

Power on the timing console, audio speaker/amplifier and judge's switch.

Power on both trees by depressing the power switch in the base of the tree. The lights will cycle up then go out.

Plug in the two large display panels (they will show a dash (-) when first powered up).

2.5.3. Test the system

Walk through the start/finish line in both the right and left lane. The large displays should now show numbers and you may see a red light on the tree for the corresponding lane. Go to the timing console – the bottom window should show S P and Not Run or Not Ready for each lane. If an X displays rather than an S or a P, check the alignment in that lane and then walk through the start finish line for that lane again.

- Press the *clear time* button to make the system ready for a heat. The console display should indicate ready for both lanes and a green LED should illuminate at the base of each light tree.
- Start a heat by pressing the judge's handswitch or the large black button on the timing console. Each tree will sequence rapidly up to test its lights and then begin the start cadence.The speaker will beep

if that option is enabled.

Note: If one of the cadences has a delayed start, then a Handicap may be present in the console. Check and set handicaps in both left and right to 0.0 and restart the heat.

- Break the left lane beams before the green light comes on and the system will indicate a false start in the left lane and reset. A negative time will be shown on the left large displayand the top red light on the left tree will come on and stay on.
- Restart the heat.
- Repeat for the right lane.
- Restart the heat.
- Simulate several dogs running across the start/finish line and observe the split times, delayed cross and early pass indications. Press the judge's handswitch or the black button on the console to signal the end of the heat. The final times will display on the large display panels and console, and a winner should be indicated by a flashing light on the tree if four "good dogs" ran in either lane.
- Press *Clear time* on the console to ready the system for another heat.

Once you are satisfied that the system is operating correctly, power off all six poles, the judges handswitch, the timing console and both trees to conserve batteries. The large display panels should be unplugged when not in use for extended periods (overnight) and the audio speaker/amplifier should be switched off.

Both trees should be plugged in to charge if leaving the system overnight.The whole tripod with the trees can be moved to a convenient location where AC power is available – often near the timing table or large displays works well. After a brief delay, the green lights on the front of the trees will flash while charging. If the green lights are continuously on, the batteries are fully charged.

Note: the pole power switches sometimes stick on even when the power ring is showing off. Check for this by observing the LED on each pole. Where a LED stays on, gently tap the base of the pole until the light goes off OR remove the battery clip.

Important: The Signature equipment must never be left out of doors or otherwise unsecured overnight to avoid damage due to rain, dew or vandalism and theft.

2.5.4. In case of rain:

Sensitive electronics equipment must be protected from water if it rains during an event.

In particular:

- lightweight clear plastic covers must be placed over the light trees and the large display panels.
- Electrical connections including power boards, electrical plugs and sockets and charger plug packs must be protected from rain and must not lie in surface water.
- The timing console, judge's handswitch and amplifier/speaker unit must be protected

The poles are reasonably water tolerant but must **never** be immersed in water.

2.6. After the event

Disassemble and repack the equipment in the same containers that they came out of. Note:

- **Remove all battery packs from the poles**. This is important because some switches do not turn off properly, and a battery pack left 'on' for days or weeks is likely to leak and damage the pole.
- Remove batteries from the console and judge's handswitch.
- **Ensure the light trees are turned off**. Failure to do this can result in over-discharge and damage to the rechargeable batteries.
- Make sure all poles and display panel receivers are placed in the appropriate cases – don't mix left and right.
- Ensure all hardware is placed in a case – pole base wingnuts can easily fall out when loosened and display panel receiver handwheels are easily misplaced
- If pack up happens during rain or damp or it has rained during the event, make sure the cases are out of the rain at all times, the equipment is wiped down before being packed and is taken out and aired at the first opportunity, definitely within 24 hours. Remove the pole bases and twist and pull the coloured plastic tips to allow air to circulate through the poles.

3. Section 3: Race Meeting Operating Instructions

3.1. Basics & Getting Started

The Polaris Timing Console is the brain of the Signature Flyball timing system. It controls the operation of the other components, provides the operator interface for operating the system, and allows the setting of options and parameters to suit racing requirements. Functions include:

- Controls sequencing of the light trees during heat start, including managing false starts and delayed (handicap) starts;
- Displays start time, dog split times and total team run time;
- Monitors for infringements such as start faults, early crosses and delayed crosses;
- Displays heat winner;
- Monitors and alerts to breakouts;
- Sends timing information to the main display panels;
- Provides warmup timer,

Certain functions are user programmable via a menu system. Most of the membrane keys on the console are dual function depending on what mode it is in.

Entering the menu system is by pressing the *Setup* key. Navigation through the menu system is via the *Next Choice* and *Prev (previous) Choice* keys. Selection of a menu item is via the *Enter* key.

This description has been written for Polaris Timing Console software version 1.4. The software version of the timing Console is displayed during the power on sequence in the lower Status Window following the Initializing prompt.

The Console is powered by four (4) AA batteries concealed in the bottom compartment on the bottom of the unit. Do not use rechargeable batteries due to the slightly lower operating voltageand characteristics of these batteries. A single set of Alkaline batteries will last for two weekends of use in most circumstances. The console is powered on using the slide switch on the back. The Console should be powered off during long periods of non-use to preserve batteries (such as overnight or between weekends). Batteries should never be left in the console after an event to prevent risk of battery leakage and consequential severe damage to electronics if left for an extended time.

On the back of the Console are three I/O ports. The one marked Audio is used to interface to theaudio amplifier and provides optional sounds for the start

cadence, false starts and bad passes. The other two ports may be used to provide computer interfaces to the timing system.

NOTE: Refer to the “AFA Operating Flowchart” for a visual representation.

3.1.1. Polaris Timing Console layout

On the top of the Console are two display windows – the Top Display which will show the Raceand Heat number of the current run, and the Status Window (lower display) which will show thestatus of both lanes as well as split times for each dog and final heat times for each lane.

The active buttons for the Console are:

Start faults On / Off – turns the Start Fault detect system on and off for both lanes,

Eyes Off – enables the “normal” start fault detect system. In this mode, the top red lamp on the light tree is extinguished for both lanes when ready to start a new heat. The first time a start dog incurs a start fault the red lamp on that lane lights, the horn sounds and the console resets ready to restart the heat.

Eyes On – defeats the normal start fault detect system, and is used in Veterans and Handicap racing. In this mode, the top red lamp on the light tree is on for both lanes when ready for a start as if both lanes had had a false start. If a start dog crosses the line early, the red lamp on that lane lights briefly but the horn does not sound, the console does not reset and the heat continues.

Horn – To send a horn sound to the audio system to get the attention of the judge or competitors

Clear Time – To indicate to the system (and judge) that the timing table is ready for the next heat to begin. Clear Time has a toggle effect, so pressing it when the system is ready will cause the system to go not-ready.

Race/Go – Increments the race number and resets the heat number to 1.

Setup – Enters Setup mode on the console for programming various options.

Prev Choice – Used during setup to scroll through menus. When not in setup mode, it is used to review previous times as discussed later.

Next Choice - Used during setup to scroll through menus. When not in setup mode, it is used to review previous times as discussed later.

ENTER – Used during setup mode to make or save a selection.

Start/Stop – Can be used to start or stop a heat. This button performs the same function as the judge’s remote control (HandSwitch) and can be used in place of the judge’s remote control. The judge’s remote control and the Start/Stop button can be used interchangeably during a heat without limitation.

A short antenna protrudes from the top of the timing console to communicate with all the other components of the system. This antenna should ideally have an unobstructed line of sight to the lane poles, small receivers on top of the large display panels, both light trees and the judge with the remote switch.

3.1.2. Initial Setup

(This step can be skipped if the system has been set up and tested in accordance with Section 2 of this manual)

To start using the system, power on the Console and the other components (including the 6 timing poles, two trees, judges handswitch, audio system and large displays).

Once initialized, the Console will show 1-1 in the large Display window and “L Not Run” in the lower Status Display. Walk through each of the racing lanes start/finish line and the Status Display should change to “L Not Run S P” and “R Not Run S P”. The L and R lines both showing up indicate it has now sensed it is operating in a two-lane mode (as opposed to single lane racing, training or practice mode).

If the R line fails to appear after walking through the lanes, check the beam alignment in both lanes and the overall setup as detailed in the setup document. Ensure that all poles with green caps show a green LED at the top and all poles with black caps show a red LED at the top. If all appears to be setup correctly, refer to Advanced setup – Reprogramming eyes (later in this document, also see separate Advanced Menu instruction) or contact your support person.

If any S or P is replaced by an X, this is an indication of pole misalignment or an obstruction being present. If the S is replace by an X, the start pole in that lane is misaligned and similarly, the P relates to the passing pole (pole closer to the box). Check the alignment of the poles and then walk through them again.

The poles can be reset by blocking all of the beams for a given pole at the same time for at least one second, most easily done by walking through the beam and standing on the start/finish line.

3.2. Timekeepers Activities

Timekeepers carry out a number of activities associated with the running of racing and recording of results. Their activities include operating the Signature EJS. This section describes their actions on a race-by-race basis as well as a heat-by-heat basis.

Notes:

- Only instructions relevant to the Signature EJS are noted here. For other Timekeeper functions refer to the AFA Rules and Policies and the Timekeepers Manual.
- Timekeepers actions to set up the EJS for the next race depend on the next race and the race that has just finished. Change in format from Handicap to Non-handicap or the other way around require specific extra actions.
- Details for each action on the Polaris Timing Console are described in Section 1 of this Manual.

- The associated “AFA Operating Flowchart” is a visual representation of Timekeeper actions.

3.3. Timekeepers setup for each race:

3.3.1. No change in format: Setup for Non-handicap race following another Non-handicap race

- Press *Countdown* when instructed by the Judge.
- Enter Breakout times as per Timesheet or Running Order.

3.3.2. No change in format: Setup for Handicap race following another Handicap race

- Press *Countdown* when instructed by the Judge.
- Enter Breakout times as per Timesheet or Running Order.
- Enter Handicap times as per Timesheet or Running order

3.3.3. Format change: Setup for Non-handicap race following a Handicap race:

- Press *Countdown* when instructed by the Judge.
- Press *Eyes Off* (to disable a pre-set Start Fault in each lane, ie enable False Starts)
- Enable Stage Beeps.
- Enter Breakout times as per Timesheet or Running Order.
- Enter Handicap of 0.0 in both lanes (to disable Handicap)

3.3.4. Format change: Setup for Handicap race following a Non-handicap race:

- Press *Countdown* when instructed by the Judge.
- Press *Eyes On* (to pre-set a Start Fault in each lane, ie disable False Starts)
- Disable (silence) Stage Beeps.
- Enter Breakout times as per Timesheet or Running Order.
- Enter Handicap times as per Timesheet or Running Order.

3.4. Timekeepers actions for each heat:

- Operate *Start* and *Stop* button as instructed by the Judge
- Where a team is non-competitive, such as Forfeit or Broken Out, set a Start Fault for that team.
- Check that the Console Status Window indicates:
    - Upper line: *L Ready S P*
    - Lower line: *R Ready S P*
    - An X anywhere signals a Pole problem. Advise the Judge.
- Press *Clear Time* when ready to start next heat.
    - This signals to the Judge that the Timing Table is ready.
- If start faults are enabled (“Eyes Off”) and a false start occurs, do not touch the Console as pressing *Clear Time* after a false start will clear the start fault and require that it be reset manually. The system handles the normal false start rules without intervention and automatically resets for the restart of the heat with the start fault indicated by a red light in the offending lane(s).

4. Section 4: Troubleshooting Guide

Problem	Possible cause	Checks & actions
Can't find Handicap option in the Setup menu.	Option has been disabled or System software has been reloaded	Refer to Protected Menu instructions
Beeping every time a dog crosses the Start line but not a bad cross OR System does not respond when START pressed Note: Timekeepers can also check by looking for 'X' in the console display for that pole	Start and Pass poles in swapped positions.	Confirm Start and Pass poles in correct positions
	System hangup	If indicators on both Green tipped poles are showing GREEN, walk through or sweep a hand across the Start line between the poles. Reset the poles by standing in the middle of the gate to interrupt all beams for more than 1 second.
	Dirt or water on lens, Misalignment	If one Green tip pole indicator is RED: • Make sure the space between the poles is clear of any obstruction. • Wipe down all lenses with a clean dry cloth. • Re-align the poles
	Black tipped pole Misalignment, Faulty battery	If both Green tip pole indicators are RED, check the Black tipped pole: • ON/OFF switch, • Flat batteries • Alignment.
	Pole not turned on, Faulty battery.	If any pole indicator is off or flashing: • Check on/off switch • Remove & check battery pack for proper insertion, flat cells, cells not sitting properly against contacts or batteries inserted the wrong way
	Faulty pole	If nothing else works, may be a faulty pole. Replace with spare. If a Pass or Start pole, reprogram using menu instructions.

Problem	Possible cause	Checks & actions
False starts or beeping indicated when nothing crossed the Start line	Sun shining directly and from a low angle into the Green tipped pole lenses for one lane.	Swap the black and green poles around. Make sure you also swap the Pass and Start poles on their base. If you still get occasional bad crosses but they are less frequent, place a visual barrier on the Start line between the Left and Right lanes. It only has to be big enough to prevent the Green poles of one lane "seeing" the Black pole of the other lane.
Occasional false crosses indicated when obviously did not happen	This happens at some venues and no cause can be found. Suspected to be local radio interference.	
Indicator lights on pole flashing	Battery low, One cell installed reversed in pack	Check / replace flat cells. Remove the battery pack and check for cells inserted the wrong way.
Indicator stays ON when pole switch turned to OFF.	Internal On/Off switch stuck ON	GENTLY tap the base of the pole near the on/off switch until the indicator goes out, or Remove battery pack when not in use to prevent going flat.
Light tree or rear display panel not responding	Possible hangup in item internal software	Reset the item – refer to menu instructions.
Indicator lamp on light tree flashes on a slow cycle	Internal rechargeable battery running low TBC	Plug in chargers to continue operation. Recharge battery at first opportunity.
Start cadence not synchronised between the lanes	Handicap time left in.	Enter 0.0 handicap in both lanes – refer to menu instructions.
Sounds not as required for racing format	Incorrect settings	Enter correct settings – refer to menu instructions.

Notes:

Each pole has an indicator lamp at the top.

- For the Black tipped poles, colour is always Red
- For the Green tipped poles, colour may be Red or Green.
- Flashing light indicates low battery voltage.