INSTRUCTION MANUAL

FLYING FOX REMOTE CONTROL ADCP TOWING SYSTEM MODEL FFX

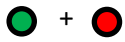QUALITY SYSTEM
ISO:9001
CERTIFIED

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1. Flying Fox Operation

Turn it **ON** - Press the blue button on the Flying Fox.

Turn it **OFF** - Press the blue button on the Flying Fox again – the LEDs will turn off.

(The Flying Fox will automatically turn off if there has been no communications for 3 hours.)

The LED's on the Flying Fox indicate the internal state:

Comms Fault - when the green and red LED's flash alternately. Turn on the Remote Control and wait 5 secs for comms to be established.

(If the Remote Control has an Emergency Stop button then the system operates by automatically frequency hopping through the spectrum – and it will eventually connect - however, if there is no Emergency Stop button, then the system operates on a single frequency that is selectable from the Remote Control – so you may need to select a new frequency from the Remote Control sub menus until only the green LED flashes.)

Comms OK - when the green LED flashes on its own. The communications between the Flying Fox and the Remote Control is OK.

Charging – when the red LED flashes on its own. The 18V DC supply is charging the internal 12V DC SLA battery. This can be plugged in at any time and the unit will start charging. As the charging progresses, the red LED flashes faster. The battery voltage can be viewed on the Remote Control LCD if required. (Will take 3-4 hours to charge from fully flat)
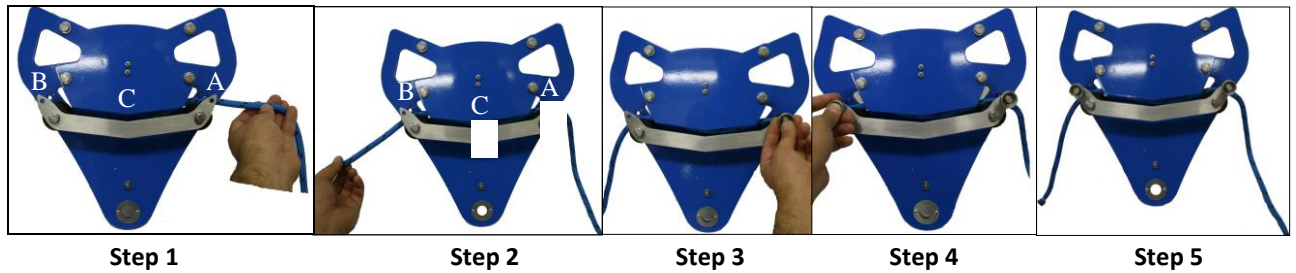
Charging complete – when the green LED is on steady. The battery is then trickle charged to keep it at optimum charge.

Indicator Panel

| Step 1 | Step 2 | Step 3 | Step 4 | Step 5 |

Using a low stretch, high strength 8mm dia rope (such as the Donaghy's "Spectraspeed" = 3 tonne breaking strain), install it across the river by attaching to trees, vehicles etc.
NOTE: For ease of installation, do not **fully** tension the rope until the Flying Fox is fitted to the rope (step 5) as follows:

Feed the rope above the roller (A) as shown in step 1. Position the rope under the rubber pulley at (C), then pull the rope above the second roller (B) and position the rope between the rollers and insert pins as shown in step 3 & 4.

Turn on the Flying Fox and operate it forward and backward, while viewing the "motor current" on the LCD display – as shown on the next page. For optimum performance, the tension of the rope should be adjusted until the motor current is about 2.0A to 3.0A.   If the current is too hi, reduce the rope tension!   This will give the Flying Fox the maximum battery duration.
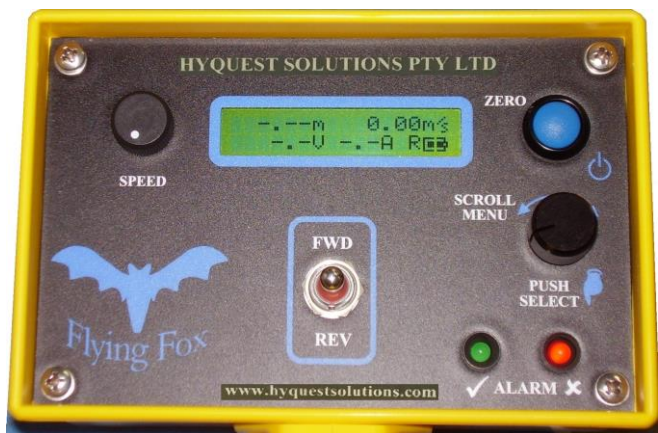
2. Remote Control

Press and hold the blue button to turn **ON** the Remote Control.
Press and hold the blue button to turn **OFF** the Remote Control.

Two models of Remote Control :
1. **Remote Control without Emergency Stop.**

This model operates at a single frequency in the approved spectrum – the frequency can be set/changed in the Remote Control "Remote…" menu as per the table in section 3.

If there is no communications between the Remote Control and the Flying Fox, with both units powered on, step through each frequency on the Remote Control until communications starts.

2. **Remote Control with red Emergency Stop button.**

This model operates in the approved spectrum by automatically frequency hopping every 400mSecs. The Emergency Stop button has been added to provide compliance with EN14492-1 standard in Europe – and has the following functionality :

When the Emergency Stop is pressed :
- The Flying Fox will stop immediately.
- The Flying Fox will not respond to Fwd / Rev commands from the Remote Control.
- The Remote Control will display "Emergency Stop" on the LCD.
- The Remote Control will beep continuously while in Emergency Stop to get the users attention.

To remove the system from Emergency Stop mode, rotate the red button in the direction of the arrows and it will click upwards – normal operation will resume.

During normal operation the main LCD Display indicates :

Radio Signal strength

Traversing Distance

Traversing Speed

51.25m ◢ 0.45m/s

12.6V 2.3A R ◼▯

Flying Fox
Battery Voltage

Remote Control
Battery State

Motor Current
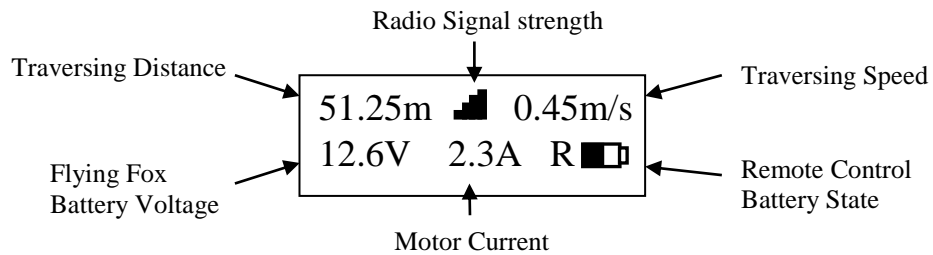
To zero Traversing Distance – Press the "Push Select" knob on the Remote Control Unit while the menu above is displayed – the LCD will display "Set Waters Edge" – press the blue button momentarily to zero the Traversing Distance.

Radio Signal Strength – Strength is usually high (Range is 175m+   (=575ft+))

To set Traversing Speed – Turn the Speed knob on the Remote Control left hand side to set the desired speed.

Flying Fox Battery Voltage – The Flying Fox voltage is measured and sent back to the Remote Control. If this voltage falls below 10.8V the Remote Control will start beeping. The Flying Fox should be brought in as soon as possible (so it doesn't get stranded in the middle of the stream) and the battery re-charged or replaced with a fully charged battery. You will be able to drive the Flying Fox about 100m (300ft) once the battery reaches this voltage!

> A fully charged battery will drive the Flying Fox for approx 600m (1800ft) at any speed setting !
> (eg. 20 min continuous at 0.5m/s (1.6ft/s) : 50min continuous at 0.2m/s (0.6ft/s))

Spare batteries can be purchased from Hyquest Solutions or purchase a 12V 2.8Ah (132 x 97 x 33mm) PowerSonic PS-1228 battery locally.

Motor Current – The current drawn by the motor is measured by the Flying Fox and sent back to the Remote Control. This is used when setting the "cable tension".

Remote Control Battery State – Indicates the charge of the internal NiMh AA batteries. (The Remote Control can be charged by either the 18V DC Mains Charger or the 12V DC Car Charger)

Navigating Remote Control Menu's

The Scroll Menu knob can be rotated and pressed – this is used to navigate and select menus.

Rotate the Scroll Menu knob to display "More…" and press the same knob "Push Select"
Rotate the Scroll Menu knob to display "Flying Fox…" "Remote…" "Alarms…" "Return to Main Display…"

The "Flying Fox" menus show the Flying Fox S/W Rev, the traversing distance, the comms state and the pulley diameter.

Distance Measurement – the drive pulley rotation is measured and used to determine the distance travelled – the pulley diameter parameter in the "Flying Fox" menu can be adjusted to fine tune the distance measurement if accuracy is required.

The "Remote" menu shows the Remote Control S/W Rev, the battery voltage, the back lighting state, the units (m or ft), the operating Frequency (models without Emergency Stop button) and the Remote Control Charger state. Pressing the "Push Select" knob allows the different menu options to be selected.

The "Alarm" menu shows the Flying Fox comms and battery state, and the Remote Control Battery state.

3. Operating Frequency

The Flying Fox operates in the 915MHz or 868MHz license free band – specify the model when ordering. The individual frequencies are user selectable from the Remote Control.

The European model (-EU) operates in the 868MHz band using frequency hopping spread spectrum and jumps between 70 different frequencies, only stopping on any one frequency for a maximum of 400mS. This model is CE approved and has an Emergency Stop button.

The US and Canadian model (-US) operates in the 915MHz band again using frequency hopping spread spectrum and jumps between 64 different frequencies, only stopping on any one frequency for a maximum of 400mS. This model is FCC approved and has an Emergency Stop button.

The original Flying Fox operates on a single selectable frequency as shown in the table on the right hand side. (Does not have an Emergency Stop button.)

Original Flying Fox Model (915 MHz)		
902.5 MHz		US
903.5 MHz		US
904.5 MHz		US
905.5 MHz		US
906.5 MHz		US
907.5 MHz		US
908.5 MHz		US
909.5 MHz		US
910.5 MHz		US
911.5 MHz		US
912.5 MHz		US
913.5 MHz		US
914.5 MHz		US
915.5 MHz		US
916.5 MHz		Aus
917.5 MHz		Aus
918.5 MHz		Aus
919.5 MHz		Aus
920.5 MHz		Aus
921.5 MHz		Aus
922.5 MHz		Aus
923.5 MHz		Aus
924.5 MHz		Aus
925.5 MHz	Default	Aus
926.5 MHz		Aus
927.5 MHz		Aus