

iTrac II Prawn Vessel Monitoring System: Setup and Operating Guide

**Version: 2.0
April 2014**



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1.0 Introduction

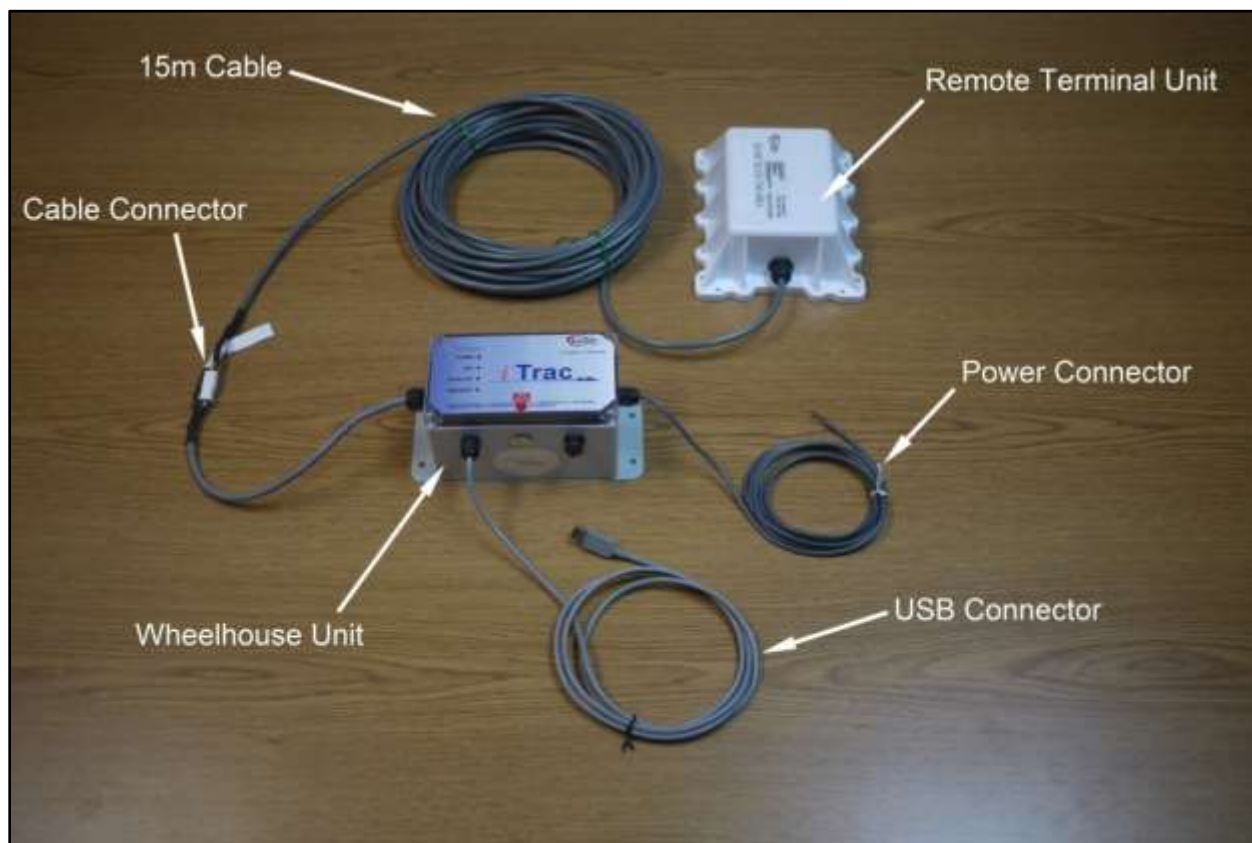
Electronic vessel and gear tracking in the commercial Pacific Spot Prawn fishery helps At-Sea Observers to locate vessels and their gear more effectively for spawner-index sampling. The electronic tracking system, also referred to as the Prawn Vessel Monitoring System (VMS), is comprised of electronic hardware and software onboard each fishing vessel which works by transmitting vessel and gear locations through the Iridium Satellite System to the J.O. Thomas and Associates office which is then used to direct their At-Sea Observers to these locations as needed. The vessel location is automatically transmitted from the vessel at pre-set intervals 24/7 during the fishery. The location of gear is transmitted each time it is set or hauled when, depending on their hardware/software configuration (see below), the fisher either pushes a set or haul hard-switch button, hits a pre-specified key on their computer keyboard, or clicks a soft-key on their computer screen with a mouse.

This Setup and Operating Guide covers the installation and operation of the basic Prawn VMS with various optional peripherals added such as a supplied Asus Netbook computer preloaded with the JOT Prawn Program, a fisher-supplied computer with the JOT Prawn Program loaded, a wheelhouse set/haul hard switch, and a waterproof set/haul deck switch.

2.0 iTrac VMS with PC

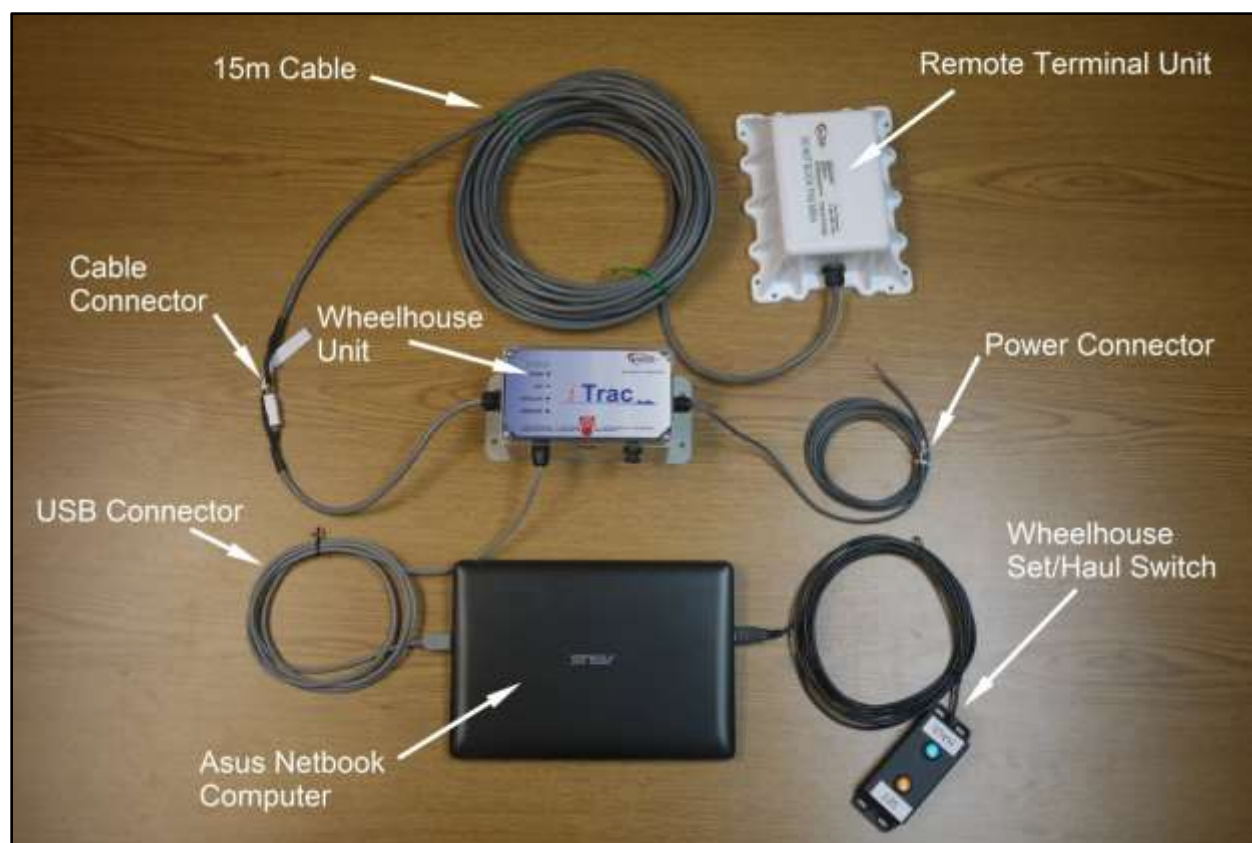
The basic Prawn VMS is comprised of iTrac II hardware (iTrac), manufactured in Dartmouth, Nova Scotia, and the JOT Prawn Program developed by J.O. Thomas and Associates specifically for the commercial Spot Prawn fishery in British Columbia.

The iTrac hardware has two main functional units: 1) the Remote Terminal Unit (RTU), a high-grade waterproof enclosure that is designed to be mounted outside, on or above the wheelhouse, containing a GPS receiver, Iridium Satellite transceiver, and other electronics, and 2) a Wheelhouse Unit (WU) which is an enclosure designed to be mounted in the wheelhouse containing a backup battery, power connector, USB connector, power conditioning circuits, LED indicators, and an Emergency Distress button (see Figure_1). The WU is connected to the RTU with a 15m environmentally sealed cable through which the two units communicate to each other and through which power is supplied from the WU to the RTU.



Figure_1. Prawn VMS iTrac hardware showing an overview of the Wheelhouse and Remote Terminal Units connected with a shielded environmentally-sealed cable.

The JOT Prawn Program is software loaded onto a computer which is connected to iTrac hardware. Set/haul gear location reports are sent from this program to the iTrac hardware for transmission to the J.O. Thomas and Associates office via the Iridium Satellite System (see Figure_2). This program will also log these reports creating a cumulative record of set/haul dates, times, locations, along with subareas that are automatically calculated by the program from location data. These records will be eLog ready when they are permitted by regulation in the future. The JOT Prawn Program will also show the status of the iTrac connection with both the Iridium and GPS satellite systems, the current GPS location, and will display Area Closure Notices sent out to users selecting that airtime option.



Figure_2. Prawn VMS iTrac hardware showing the Wheelhouse and Remote Terminal Units with connected Asus Netbook Computer and optional wheelhouse set/haul switch.

2.1 Installation

Installation instructions for the iTrac hardware and added peripherals are described in the following subsections. Note these are generic instructions and not specific to vessel type.

1.1.1 Basic Wheel House Unit/Remote Terminal Unit

The RTU and WU are installed according to the following steps:

- Mount the RTU outside of the wheelhouse so that it's top side (side with the iTrac logo embossed on it) faces up and has a clear view of the sky. Do not locate the RTU at the same level as any RADAR antenna onboard as this may interfere with RTU reception/transmission function. The RTU can be attached to the vessel using the supplied lag screws or using nylon zip straps.
- Mount the WU inside the wheelhouse in a location and orientation where the unit's indicator LEDs will be clearly visible and the unit can be reached with the 15m cable coming in from the RTU. Lag screws are supplied for mounting.
- Connect the power connector cable to a continuous DC power source that is between 9 and 32 volts (supports 12V and 24V battery systems) (red wire to positive and black wire to ground). Note that a fully charged iTrac internal backup battery will power the unit for up to 12 hours with external power disconnected. The iTrac hardware comes with a separate power cable with a round, two-pin connector at one end and blunt cut wire at the other end. **This item is NOT necessary for the correct operation of the iTrac hardware.** It is provided ONLY to be used to supply additional (auxiliary) backup power from an external battery if desired. The two-pin connector (male end) is oriented and pressed into the female connector located on the front face of the iTrac WU, then the collet is pressed and twisted clockwise to tighten the connection. The blunt cut end is then connected to a fisher-supplied external battery (red wire to positive and black wire to ground). **The voltage of this external battery MUST match that which is coming in through the main power connector from the vessel referred to in the paragraph above (eg. 12V DC to 12V DC or 24V DC to 24V DC). A mismatch in voltage may cause damage or lead to injury.**

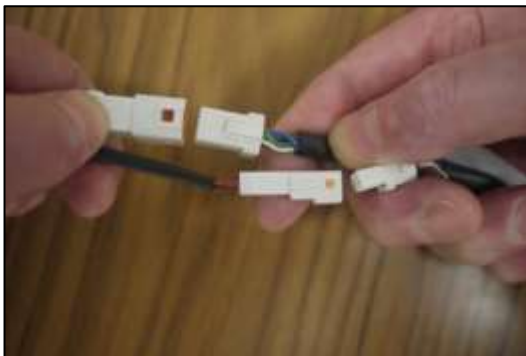


Figure_3. Auxiliary backup cable connector.

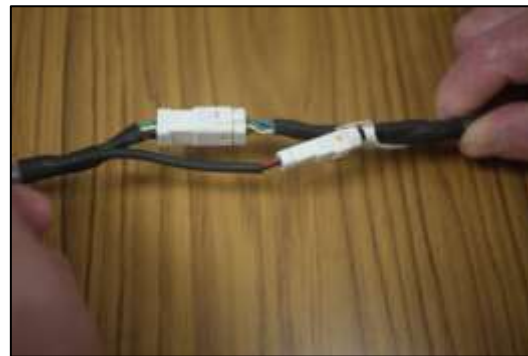


Figure_4 Auxiliary backup cable connected.

- With electrical tape, wrap the two electrical connector fittings (female ends) together at end of the 15m connector cable coming from the RTU then feed the cable through an entry point into the wheelhouse to the WU.
- Unwrap the tape from the electrical connectors and taking the male connectors at the end of the short connector cable coming out of the WU, press them into the female connectors until they click lock together (see Figures_3 and _4 below). Note that there are two different types of connector pairs, one 8-pin pair (for data) and one 4 pin pair (for power). Also note that each pair will only fully click together when they are correctly lined up and oriented to each other. If they are not oriented correctly you may damage the connector and it will not function at all. The Power LED on the WU will come on when this connection is made correctly indicating that external power is being successfully applied to the unit. **Note that if the backup battery power in the WU is low when shipped to the customer, the Power LED may be flashing (1 sec pulses). This will continue to flash even after external power is applied for several minutes until there is enough power to operate the iTrac hardware.**



Figure_5. WHU/RTU cable connectors.



Figure_6 WHU/RTU cable connected.

- Once the connection between the RTU and WU has been successfully completed and the WU battery backup is satisfactorily charged enough to run the hardware (which may take 10 minutes or so), the GPS LED will turn on and stay on until a GPS fix has been acquired then will turn off. Next the Satellite LED will turn on and stay on until it has transmitted the GPS location (usually less than 30 sec), then turn back off. If there are issues with the acquisition of either the GPS or Iridium satellites during this process these LEDs will begin to flash rapidly (see Section 1.2.1 below for interpreting LEDs). At the end of the installation and start-up process, only the Power LED will be on. After this, under normal operation the GPS and Satellite LEDs will come on when a scheduled

vessel position report or set/haul reports are being transmitted (see Section 1.2.1 below).

1.1.2 Add Supplied Computer (Asus Netbook Computer)

The following steps are for customers who have ordered and received an Asus Netbook computer which will have the JOT Prawn Program preloaded onto the computer:

- The Asus computer shipped with the iTrac hardware is not fully charged. **Charge the computer for at least 3 hours before using it for the first time.** After this, while the computer can run off its internal backup battery power for a limited time, it is strongly recommended to plug it into a 110V AC outlet while the computer is being used. The computer should be turned off when AC power is turned off. **Note that this computer has been specially configured so that it will remain fully active when it is closed up so that it takes up less wheelhouse space.**
- Making sure that the iTrac WU has been powered up for at least 5 minutes, plug in the USB connector coming from the WU into any of the computer's USB ports (there are 3 USB ports on this computer).
- Plug in a USB mouse/trackball (fisher supplied) if desired into one of the remaining open USB ports on the computer.
- Press the power button on the computer (silver button on the top right corner of the keyboard) to turn it on. The operating system will load in about 10 seconds. Click on the "JOT Prawn Trap" tile on the screen and the JOT Prawn Program will load in about 10 seconds.
- Click on the "Settings" tab on the top of the screen then a) enter your VRN number (formerly CFV number), and b) enter your FIN (Fisher Identification Number). The computer is now ready to use.
- Refer to Section 1.2.2 below for instructions on how to use this program and/or click on the "Help" tab at the top of the screen for help and instructions.
- **Caution: loading any other software program onto this computer could cause the JOT Prawn Program to run incorrectly. It is strongly recommended only to use this computer to the JOT Prawn Program.**

1.1.3 Add Fisher-Supplied Computer

The following steps are for customers who will be running the JOT Prawn Program their own computer. These customers will need to load this program from the supplied JouBeh USB thumb drive:

- Insert the supplied JouBeh USB thumb drive into an open USB port.
- Open Windows Explorer and navigate to the USB Disk and open the folder "Install JOT Prawn Trap".

- Open the “Setup” program.
- Follow the instructions on the install program, accept all default values, and continue clicking the “Next” button and wait for the install program to finish.
- Depending on how the fisher-supplied computer is configured the following programs may be installed: a) Microsoft .Net Framework 3.5, b) Microsoft Access Database 2010 Driver, and c) FTDI Chip CDM Drivers.
- A shortcut “JOT Prawn Trap” will be created on the computer desktop.
- Making sure that the iTrac WU has been powered up for at least 5 minutes, plug in the USB connector coming from the WU into an open USB port.
- **IMPORTANT: Make sure all other programs on the computer using comm ports (eg. NobelTec, Olex, MaxSea etc) are plugged into the computer and are running before starting the JOT Prawn Program (ie. Start the JOT Prawn Program last). If these programs conflict with JOT Prawn Program it is recommended to load and run it on an stand-alone computer.**
- Click on the “JOT Prawn Trap” to open the JOT Prawn Program. Click on the “Settings” tab on the top of the screen then a) enter your VRN (formerly CFV number) number, and b) enter your FIN (Fisher Identification Number). The program should now be ready to use.
- Refer to Section 1.2.2 below for instructions on how to use this program and/or click on the “Help” tab at the top of the screen for help and instructions.

1.1.4 Add Set/Haul Switch

The following steps are for customers who have ordered and received a set/haul switch (see Figure_2 above). Note these instructions apply to both the deck version (waterproof) (see Figure_7 below) of the set/haul switch and the wheelhouse version of the set/haul switch (not waterproof)(see Figure_8 below).

- Plug the 5m USB cable coming from the switch into an open USB port on the computer running the JOT Prawn Program. Both switch lights will come on and stay on.
- Wait for 15 seconds before pressing either button, then the switch is ready to use.
- Should a fisher wish to add a USB cable extension to their switch cable, it is recommended that an “active” USB extension cable be used. This type of cable incorporates a kind of self-powered “repeater” to maintain the signal through the length of the cable. These can be purchased inexpensively from most electronics big box stores.



Figure_7. Deck version (waterproof) of the set/haul switch.



Figure_8. Wheelhouse version (not waterproof) of the set/haul switch.

2.2 Operating Instructions

Following are operating instructions for iTrac hardware, the JOT Prawn Program, and optional set/haul switches.

1.2.1 iTrac Hardware





Once the iTrac hardware is connected and powered as described in Section 2.1 above, it functions automatically to send and receive data, except for the “Panic Button” function. Pressing this button, located on the front face of the WU, for 6 seconds or more will send a specially coded signal to the J.O. Thomas and Associates office as a default. **IMPORTANT NOTE: THIS FEATURE IS DESIGNED FOR OTHER JOUBEH CLIENTS AND IS NOT MONITORED BY J.O. THOMAS AND ASSOCIATES.** On direction and instruction from the J.O. Thomas and Associates office this button may be used for a short term to send set/haul reports in the event of a computer or JOT Prawn Program failure.

iTrac hardware is not serviceable by the user. Opening the unit will invalidate the JouBeh One-Year Warranty.



Figure_9. iTrac Wheelhouse Unit LEDs indicators.

Four LEDs are located on the top surface of the WU (see Figure_9 above) to indicate the operational status of the iTrac hardware as described in the table below.

LED	STATE	INDICATION
Power LED 	Off	(i) External (vessel) power has been cut and iTrac hardware operating on internal (backup battery) power. or (ii) External power cut and, if no GPS and/or Satellite LEDs light up over a 15 minute period or longer, then internal power has been depleted.
	Solid Green	External power is being supplied.
	Flashing Green (1s pulse)	Low internal power. Not enough power to operate the iTrac hardware.
GPS LED 	Off	GPS receiver is idle.
	Solid Yellow	GPS receiver is acquiring position. This will be the first attempt (60 seconds).
	Flashing Yellow (1s pulse)	GPS receiver is making a second attempt to acquire (60 seconds).
	Rapid Flashing Yellow (200ms pulse)	GPS receiver unable to acquire a position on first 2 attempts (120 seconds). Will remain in this state until GPS position is acquired. May indicate a problem if it remains in this state for an extended period.
SATELLITE LED 	Off	Satellite transceiver is idle.
	Solid Red	Satellite transceiver attempting to transmit (for up to 60 seconds).
	Flashing Red (1s pulse)	Satellite transceiver making a second attempt to transmit data (for up to another 240 seconds).
	Rapid Flashing Red (200ms pulse)	Satellite transceiver unable to transmit data on first 2 attempts (300 seconds). Will remain in this state until transmission is successful. May indicate a problem if it remains in this state for an extended period.
MESSAGE LED 	Off	No messages (closure notices) available.
	Solid Blue	Closure notice available for retrieval through the JOT Prawn Program tab "Notices".
	Rapid Flashing Blue (100ms pulses every 5s for 5 cycles)	Special coded report being sent to J.O Thomas and Associates (see description above)

1.2.2 JOT Prawn Program

1.2.2.1 Settings Page

Once the JOT Prawn Program has been opened as described in Section 2.1.1 above and you have entered your VRN and FIN numbers on the “Settings” page, the values and settings for other fields on this page can be entered as well for your convenience if desired. These will appear as defaults when you select the “Log” page (Section 1.2.2.3 below). Note all of the fields on the “Settings” page are designed to emulate the current DFO paper log header information. Also note that all of these default settings and values can be overwritten while you are working in the “Log” page. Default values and settings are entered as followed (see Figure_10 below):

- Double click on and select unit types for “Catch Weight Units”, “Octopus Weight Units”.
- Click on and enter default values for “Soak Time”, “Depth Minimum”, “Depth Maximum”, and “Number of Traps per String”.
- The next line down on the “Settings” page refers to traps being used by the fisher. The fields in this line are (“Tunnel 1”, “Traps 1”, “Trap Type 1”), (“Tunnel 2”, “Traps 2”, “Trap Type 2”), and (“Tunnel 3”, “Traps 3”, “Trap Type 3”). These fields allow you to describe three different types of traps that the fisher might be using (just as in the DFO paper log). “Tunnel 1” refers to the number of tunnels in the first type of trap being described, “Traps 1” refers to the total number of traps of the first type of trap being described that are being fished (the total number across all strings; ie. not string-specific), and “Trap Type 1” refers to the trap code for the first type of trap being described found in the “Trap Type Table” on this page (scroll down the table to see all trap type codes). Click on each of these fields to enter your values.
- Do not change the “Time Zone” setting (leave it as Pacific Standard Time). The JOT Prawn Program automatically adjusts for daylight saving.
- Lat/Long format can be selected by double-clicking on “Lat/Long Format” and selecting the desired format (decimal degrees, decimal minutes, degrees-minutes-seconds).

Assign default vessel and trap values to new haul string record

V. R. N.	F. I. N.	Catch Weight Unit	Octopus Weight Unit	Soak Time (hours)	Depth Minimum (fathoms)	Depth Maximum (fathoms)	Number of Traps per String
		LB	KG	24			50

Tunnel 1	Traps 1	Trap Type 1	Tunnel 2	Traps 2	Trap Type 2	Tunnel 3	Traps 3	Trap Type 3
		00			00			00

Time Zone: Pacific Standard Time Lat/Long Format: Degrees Minutes

Trap Type Table

Trap Type	Trap Name	Trap Description	# of Rings	Frame Material	Mesh	Bottom Ring Diameter	Top Ring Diameter	Height	Length	Width	# of Tunnels
00	Unknown	Unknown									
V2	Square Nesting	Square Nesting		plastic coated	web 1.5" throu...	28" to 3...	20" to 2...	12" to 1...			2 to 4
A4	Double Ring P.	4-Ring Frame, Cone Ne...	4 rings double	plastic coated	web covered	28"	24"	12"			2 to 4
A9	Double Ring (...)	4-Ring Frame, Cone Ne...	4 rings double	stainless steel	web covered	30" to 32"	24" to 26"	12"			2 to 4

Figure_10. JOT Prawn Program Settings page.

1.2.2.2 Satellite Page

Click on the "Satellite" tab to bring up the satellite page. Information is displayed on this page indicates the status of iTrac hardware power, GPS receiver, and Satellite transceiver.

- Click on the "Status" button to check the iTrac hardware status. **Do this every time you start the program before sending your first set or haul position reports for the day.** Will show the following if iTrac hardware is operating correctly: Power=On, GPS=OK, and Satellite=OK (see Figure_11 below). Note that 1) Power=Off means the iTrac is being powered from the internal backup battery and that you should check the power cable connection to vessel power, and 2) if the Power field is blank it means that there is no power being supplied to the iTrac hardware and that again, you should check power connection cable to vessel power. Also note that GPS and Satellite fields may blank after clicking the "Status" button and the message "No connection to satellite unit, check unit is on and connected" if the iTrac hardware has just been powered up (see Figure_12 below). In this event, wait several minutes and click the "Status" button again. If the message persists, disconnect/reconnect the WU USB from/to your computer and try again.
- Click on the "GPS Position" to check that the iTrac can acquire a GPS position (sub-area will not be available if the iTrac hardware is not on the water and in a British Columbia fishing location).
- Do not click on the "Sample" button. This is used by At-Sea Observers to send a spawner-index sample position report to the J.O. Thomas and Associates office.

The screenshot shows the 'JOT Prawn Trap' application window with the 'Satellite' tab selected. A status bar at the top indicates 'GPS position acquired.' in blue text. Below the menu bar (File, Log, Setting, Notice, Satellite, Help), there are several data fields:

	Power	GPS	Satellite			
Status	On	OK	OK			
	GPS UTC Date	GPS Latitude	GPS Longitude	GPS Satellites	GPS Sub-area	
GPS Position	Mar-10-2014 07:13:48 PM	49° 16.354'	-123° 1.645'	4	unavailable	
	Authorization Code	Sample UTC Date	Sample Latitude	Sample Longitude	Sample Sub-area	
Sample						

Figure_11. JOT Prawn Program Satellite page indicating correct iTrac hardware operation.

The screenshot shows the 'JOT Prawn Trap' application window with the 'Satellite' tab selected. A status bar at the top indicates 'No connection to satellite unit. Check unit is on and connected.' in blue text. The 'Status' field is highlighted in blue, and the other data fields are blank:

	Power	GPS	Satellite			
Status						
	GPS UTC Date	GPS Latitude	GPS Longitude	GPS Satellites	GPS Sub-area	
GPS Position						
	Authorization Code	Sample UTC Date	Sample Latitude	Sample Longitude	Sample Sub-area	
Sample						

Figure_12. JOT Prawn Program Satellite page indicated potential problem with iTrac hardware operation (status fields are blank after clicking the status bar).

1.2.2.3 Log Page

Click on the “Log” tab to bring up the log page and click on the “Haul Location” tab found in “Haul String” pane. This is the page (two panes) from which set/haul position reports will be made (see Figure_13 below). Note that all set and haul position reports made before or after the fishing season are not transmitted so you can become familiar with the JOT Prawn Program prior to the season beginning and check that it is functioning properly. You can delete these records before the season starts as per instructions in this section below. There are two ways to send a set or haul position report directly from the program as follows:

- Using the keyboard, press F5 key for a set and F8 for a haul. When either of these keys is pressed you will be asked to confirm that you want to send the position report so you press “Y” to confirm or “N” to cancel.
- Using a mouse/trackball pointer, click on “Set String (F5 key)” for a set and “Haul String (F8 key)” for a haul. When either of these buttons is clicked on you will be asked to confirm that you want to send the position report so you press “Y” to confirm or “N” to cancel.
- Using either of the above methods to send a set or haul position report automatically generates entries for time/date, latitude/ longitude, and sub-area. Defaults for depths,

number of traps and soak time will also be displayed; these can be changed by clicking on these fields and then keying in values as desired. Comments about a string (eg. string number or location) may be manually keyed in under “Comments” for each set or haul record.

- To delete a set string, scroll to the far right end of the “Set String” columns, click on the “Delete” button and confirm. Note, this will not cancel the set position report sent out to the J.O. Thomas and Associates office rather this action is meant to allow for a “clean” data record for the fisher’s use and future eLog capability.
- To delete a haul string, first click on the “Vessel” tab in the “Haul String” pane, then click on the “Delete” button and confirm. As above, note that this will not cancel the set position report sent out to the J.O. Thomas and Associate office.
- As an option (not a requirement), any particular set record in the “Set String” pane may be assigned to a haul string record in the “Haul String” pane in order to have the program automatically calculate soak time for that string. To do this: 1) click the tab “Set (Assign)” in the “Haul String” pane, 2) go to the “Set String” pane and left-click onto the set string record to be assigned, 3) holding down the left mouse/trackball button drag the cursor over to the “Haul String” pane and onto the haul string record that you want to assign the set string record to, then release the button. To clear a set record assignment, click on the “Clear Set” button.

There are four other tabs in the “Haul String” pane: “Catch (Prawn)”, “Catch (Other)”, “Trap”, and “Vessel”. These tabs open pages that will support future eLog capability. Note these are available for personal use and fishers are encouraged to try using these for practice, however paper logs are currently required until further notice.



Figure_13. JOT Prawn Program Log page.

1.2.2.4 Notice Page

Closure notices are sent from the J.O. Thomas and Associates office to those customers who have subscribed to receive in-season closure notices on their iTrac Prawn Vessel Monitoring System.

- When a notice is sent to a subscriber, the blue Message LED on the WU will turn on indicating a message is ready to be downloaded from the WU to the subscriber’s computer.

- Click on the “Notice” tab to bring up the notice page. This is the page on which area closure notices will be displayed (see Figure_14 below).
- Click on “Check for new notice” and it will be displayed in the viewing pane. Each notice will start with “BEGIN MESSAGE” and end with “END MESSAGE”.
- The notice will then be stored for later viewing. To view previous notices, click on the drop-down button (located below the “Check for new notice” and “Remove notice” buttons on this page) to see a list of stored notices, and click on the desired notice date for viewing. The notice will be displayed on the viewing pane.



Figure_14. JOT Prawn Program Notice page (fictitious message used for this example).

1.2.3 Set/Haul Switch

The following operating instructions are for customers who have installed a set/haul hard switch as described in 1.1.4 above. In order to send a set or haul position report using the hard switch:

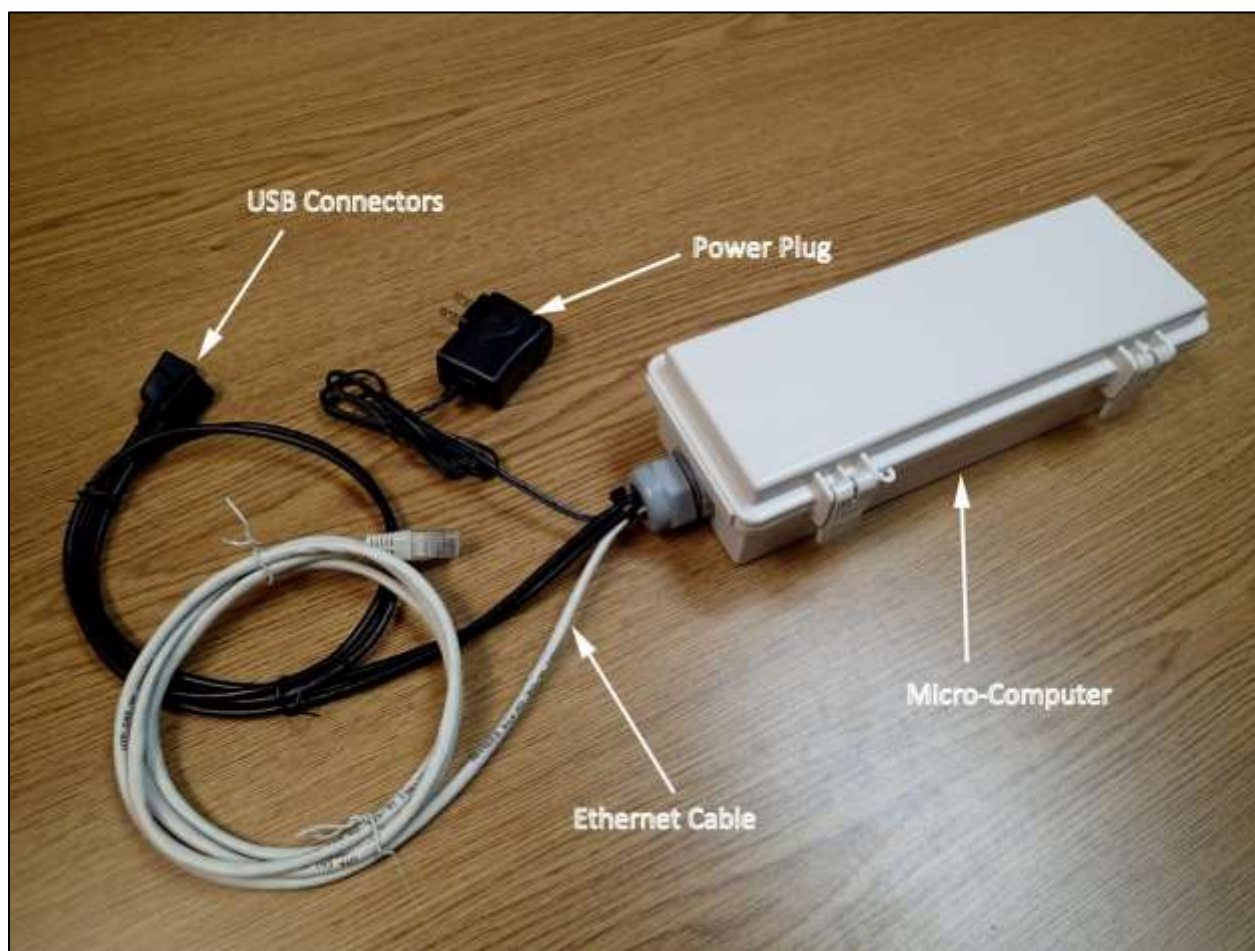
- Push the set button to record and transmit a set string. The Set LED will begin to flash for up to one minute until, 1) both LEDs turn on indicating a recorded set has been transmitted, or 2) both set and haul LEDs begin to flash indicating the satellite transmission failed. If condition (2) occurs then check that the WU unit is powered, connected to the PC, and that the RTU has a clear view of the sky, then try pushing the set button again.
- Push the haul button to record and transmit a haul string. The Haul LED will begin to flash for up to one minute until, 1) both LEDs turn on indicating a recorded haul has been transmitted, or 2) both set and haul LEDs begin to flash indicating the satellite transmission failed. If condition (2) occurs then check that the WU unit is powered, connected to the PC, and that the RTU has a clear view of the sky, then try pushing the haul button again.

- If both set and haul LEDs keep flashing after pushing one of the buttons, check that the JOT Prawn Program is running and the WU is connected, then try again. If problem persists try closing and restarting the program or rebooting the PC. **Important Note: the JOT Prawn Program must be the active program (“on top”) on the computer screen in order for the hard switch to function.**

Set LED	Haul LED	Description
Off	Off	Switch is off, check the following: (i) Hard switch USB cable is connected to the computer. (ii) Computer is on and not in sleep mode (for fisher-supplied computers). (iii) Computer is not running a screen saver (for fisher-supplied computers). (iv) JOT Prawn Program is the active running program “on top” (click the mouse/trackball on the program). (v) Conflicts other programs (that use GPS input etc) .
On	On	Switch is ready.
Flashing	Off	Set button has been pushed and is transmitting data.
Off	Flashing	Haul button has been pushed and is transmitting data.
Flashing	Flashing	Set or haul data transmission not made after one minute.

3.0 iTrac Prawn VMS with Micro Computer

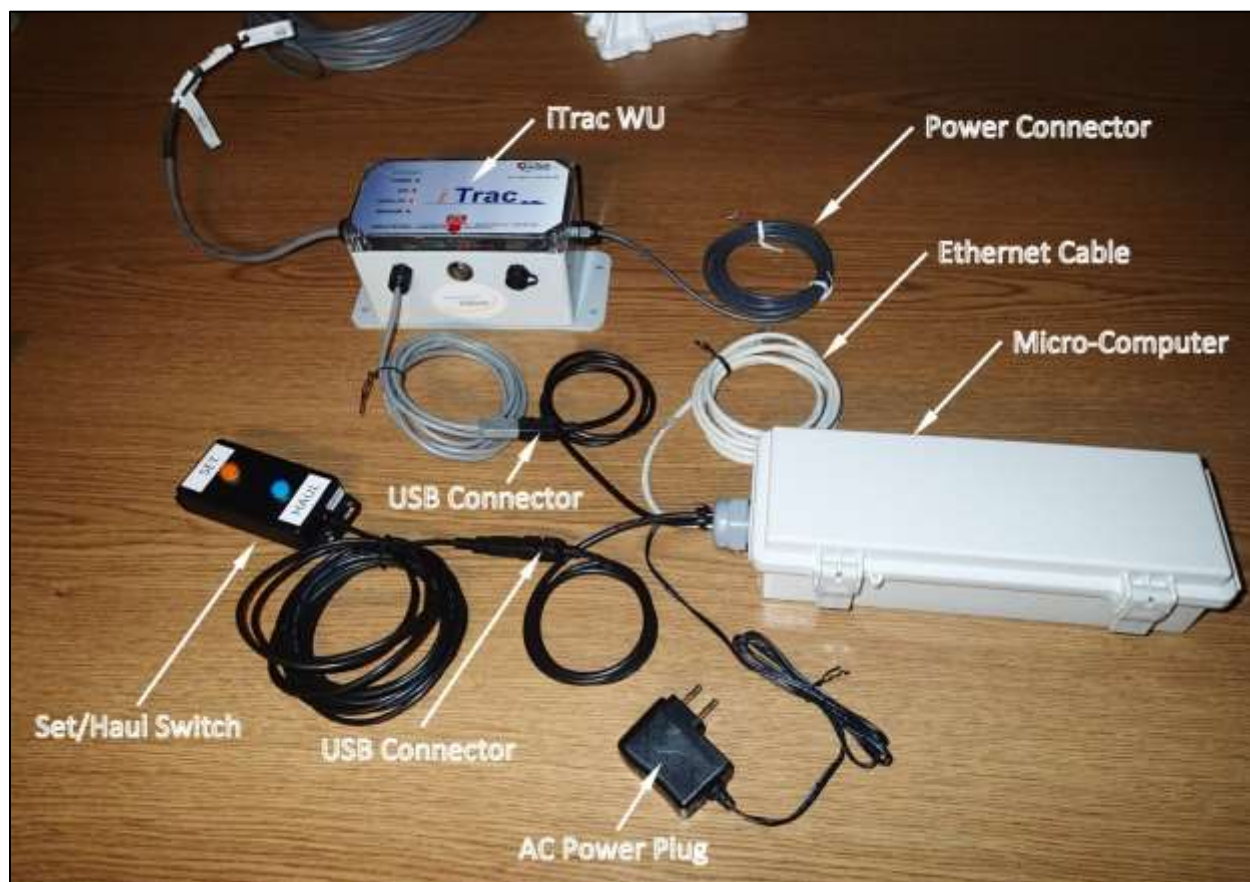
A micro-computer backup system, developed by J.O. Thomas and Associates Ltd, can be used in place of a computer connected to the iTrac hardware in the event of a computer or software failure while at-sea (see Figure_15 below). This system is designed to function as an interface between a set/haul switch and the iTrac hardware allowing the fisher to continue to send set/haul gear location reports to the J.O. Thomas and Associates office if their computer or software fails while they are fishing.



Figure_15. Micro-Computer Backup System Overview (Note: Ethernet cable may be either grey or black; also note that stainless steel mounting hardware is included inside the micro computer case).

IMPORTANT NOTES:

- The micro-computer backup system is intended for temporary use only and not as the primary hardware/software configuration to send set/haul gear location reports.
- It is strongly recommended to use either the supplied Asus net-book computer or a fisher-supplied computer along with the JOT Prawn Program (included with every iTrac unit on a JouBeh USB thumb drive) as the primary hardware/software configuration to send set/haul gear location reports.
- A set/haul hard-switch is required for this hardware/software configuration.

3.1 Installation

Figure_16. Micro-Computer connected to the Itrac WU and set/haul switch.

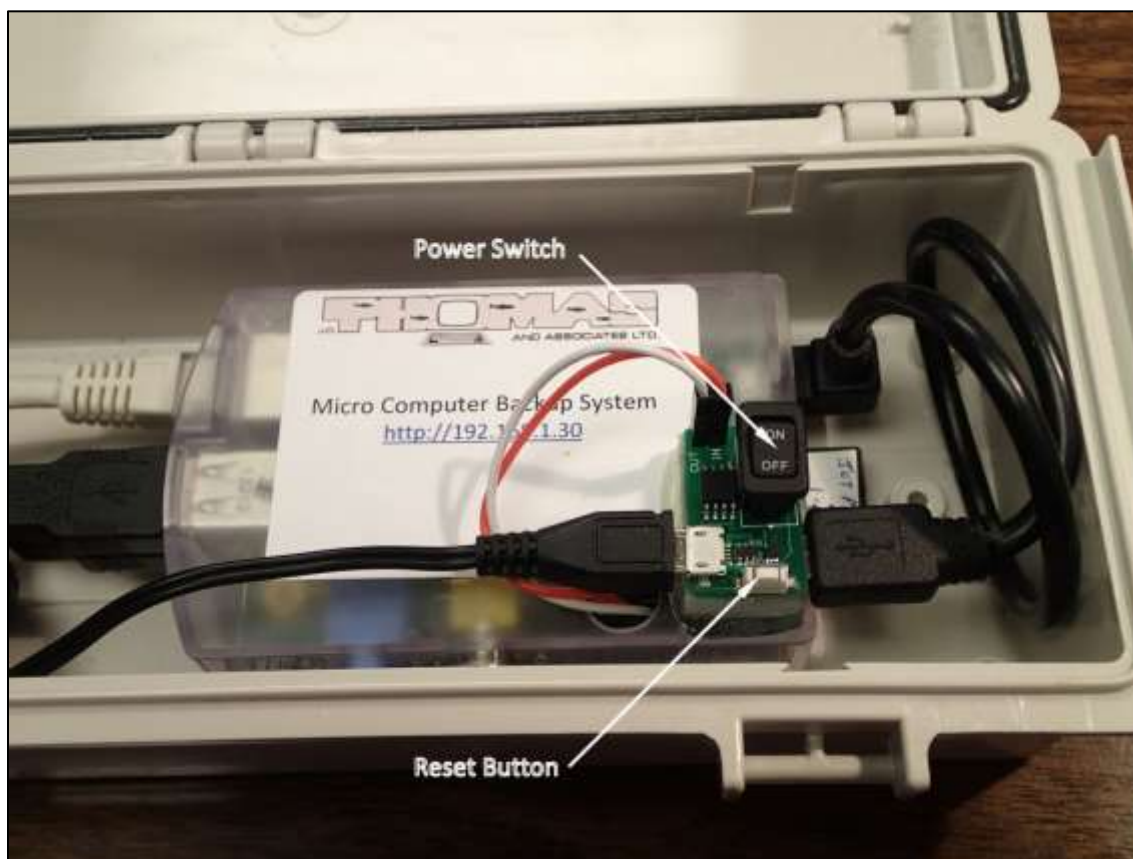
In the event of a computer/prawn software failure while at sea:

- Disconnect the USB connector (s) coming from the WU and the hard-switch (if there is a hard-switch connected) from the computer.

- Plug these connectors (both male) into the each of the black USB cable connectors (both female) coming out of the micro-computer case. Either male connector can be plugged into either female connector (see Figure_16 above).
- Plug in the AC power plug into 110V AC receptacle onboard (select a receptacle that produces the same kind of quality power that is needed for other on-board computers: ie. true sine wave AC power). The micro-computer is now ready to be powered up.

3.2 Operating Instructions

- Open the micro-computer case and press the power switch to the “ON” position (see Figure_17 below) You will see some LEDs lights on the micro-computer board turn on indicating it has power (the red LED indicates power). **Be careful not to tug or catch any of the cables inside the case as this may cause the micro-computer not to operate correctly.** Both switch LEDs will now be on as well. Wait for the micro-computer to boot up. This will take about 10-15 seconds then both switch LEDs will flash slowly 3 times to indicate the system is ready to use. **Note: if the micro-computer has not booted up in 20-30 seconds then press the small white reset button next to the power switch. The micro-computer should now boot in about 10-15 seconds.**



Figure_17. Power switch and reset button for the micro-computer backup system.

- Close the case and the micro-computer is now ready to use.
- Push the set button to record and transmit a set string. The Set LED will begin to flash for up to one minute until, 1) both LEDs turn back on indicating a recorded set has been transmitted, or 2) both set and haul LEDs begin to flash indicating the satellite transmission failed. If condition (2) occurs then check that the WU unit is powered, connected to the micro-computer, and that the RTU has a clear view of the sky, then try pushing the set button again.
- Push the haul button to record and transmit a haul string. The Haul LED will begin to flash for up to one minute until, 1) both LEDs turn back on indicating a recorded haul has been transmitted, or 2) both set and haul LEDs begin to flash indicating the satellite transmission failed. If condition (2) occurs then check that the WU unit is powered, connected to the micro-computer, and that the RTU has a clear view of the sky, then try pushing the haul button again.
- To power the system down, open the case and press the power switch to the “OFF” position. **Important Note: cutting the power to the system without using the power on/off switch may result in corrupting the micro-computer’s operating system program.**

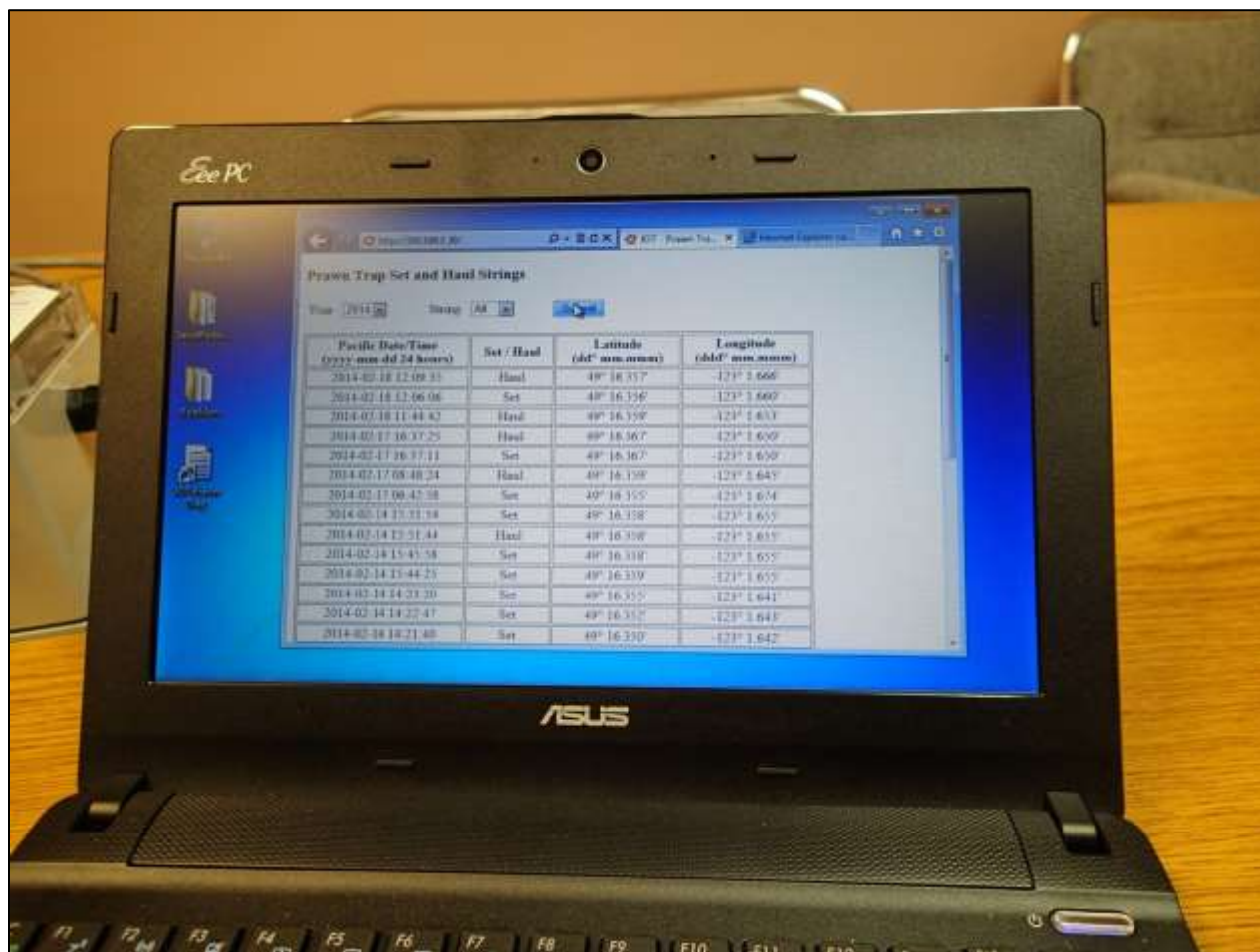
3.3 Viewing Set/Haul Data with Micro-Computer

The micro-computer backup system comes with an Ethernet cable that can be connected to any computer with an Ethernet port and web browser so that the user can view a rudimentary table of the locations and dates of their sets and hauls (see Figure_18 below).

To do this:

- Make sure your micro-computer is powered on then connect the Ethernet cable to an open USB port on your computer.
- Start up your internet browser (ie. Internet Explorer, or FireFox etc) on your computer and type in the internet address <http://192.168.1.30> (this address is also on the label applied to the top of the microcomputer for your easy reference), then press your “enter key” and the micro-computer database will come up.
- First select the year in the drop down box with your mouse, then the string type (set, haul, or all), then click on “submit”. The times, dates, and positions for all of your sets and hauls for the selected year will appear. Note that this screen does not automatically refresh. You must click on the “submit” key to update your screen.

- When you are finished viewing your log, close the browser. You can leave the Ethernet cable connected to your computer or disconnect it.



Figure_18. Micro-computer set/haul log screen shot.

Revision History

Version	Change	Author	Date of Change
1.0 (Beta)	Initial	D Tallman	March 2014
2.0	Added Section 3.0 to describe micro-computer backup system installation and operation.	D Tallman	April 2014
	Warranty Information added.		
	Add reference to internal backup battery capacity for the prawn fishery configuration in Section 1.1.1.		

Asus Netbook Computer Warranty

See warranty policy and information included in with Asus netbooks shipped with iTrac II mobile units.

JouBeh Contact Information Warranty

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JouBeh iTrac II Warranty

WARRANTY POLICY

JouBeh warrants products manufactured by JouBeh to be free from defects in materials and workmanship under normal use and service for twelve (12) months from the date of first activation, unless specified otherwise, subject to the following conditions:

JouBeh's obligation under this warranty is limited to repairing or replacing (at JouBeh's option) products that have been returned prepaid to JouBeh. JouBeh will return warranted equipment by surface carrier, prepaid. This warranty shall not apply to any JouBeh products that have been subjected to modification, misuse, neglect, accidents of nature, or shipping. Batteries are not warranted. Under no circumstance will JouBeh reimburse the claimant for costs incurred in removing and/or reinstalling equipment. This warranty, and JouBeh's obligation there under, is in lieu of all other warranties, expressed or implied, including warranties of suitability and fitness for a particular purpose. JouBeh is not liable for consequential damages.