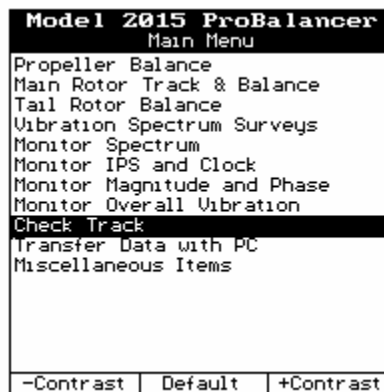

Chapter 12

Check Track

(Revision 3, April 2006)

“Check Track” is a ProBalancer function that is accessed from the ProBalancer Main Menu banner screen. A description of this function follows, along with the information required to complete the menu screens within the function, and the steps necessary to perform the function.



The “Check Track” option is provided for quick track observations. This function allows for no data storage for later recall and review of data as do the other rotor-related functions of the ProBalancer.

The “Check Track” function can be performed using either an industry-standard strobe for visual blade tracking or the ACES Systems’ Optical Tracker.

Before using the “Check Track” function on the ProBalancer, you must first install physical equipment such as cables and sensors. To setup equipment, do the following:

1. Place the ProBalancer in the location it will be used. Install and connect the one-per-rev source to the TACH channel of choice. (You must use a single pickup or optical tach for the once-per-rev signal.)

- If using the Optical Tracker, connect the tracker to the ProBalancer “AUX/COM” input port located on the top end of the ProBalancer.

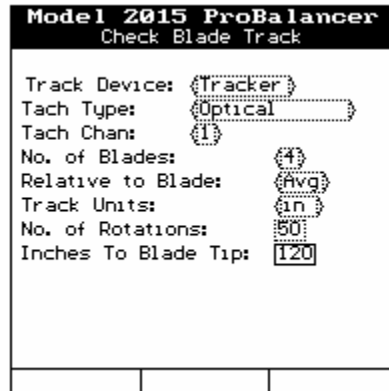
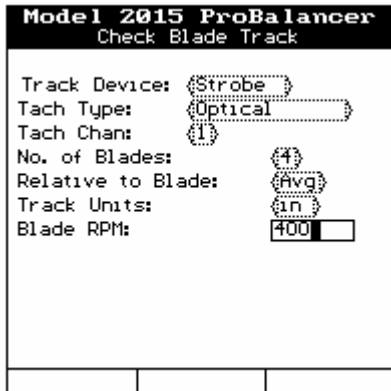
If using a strobe light, connect the strobe interface cable to the ProBalancer “STROBE” input port. Connect the strobe to the interface. Set the strobe to the slave mode or turn the internal oscillator off. Connect the interface to the ship’s 28-volt power source. Install tip targets or place reflective tape to the blade tips per manufacturer’s directions.

NOTE

Using the strobe may cause the “ON/OFF” function of the ProBalancer to be disabled. If you cannot turn the ProBalancer off using the [ON/OFF] key, disconnect the strobe, and then turn the ProBalancer off.

After all equipment is installed, return to the ProBalancer. Then, to use the “Check Track function” on the ProBalancer, do the following:

- Select “Check Track” from the Main Menu banner screen. The “Check Blade Track” banner screen appears as shown in the figure below.

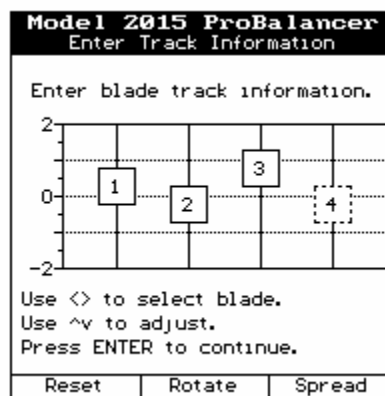


- Use the [⇒] key to toggle between the two selections in the “Track Device” field, “Strobe” or “Tracker”. As shown in the figure above, the lower portion of the “Check Blade Track” banner screen then changes depending on the type of track device you selected.
- Use the [↓] key to move down to the “Tach Type” field. Using the [⇒] key, toggle between the available selections to select the tach type you are using to generate the once-per-rev signal.
- Use the [↓] key to move to the “Tach Channel” field. Using the [⇒] key, toggle between the available selections to select the tach channel you connected your tachometer to.
- Use the [↓] key to move down to the “No. of Blades” field. Using the [⇒] key, select the number of blades on the rotor you are checking.
- Use the [↓] key to move down to the “Relative to Blade” field. This field sets the blade number the track screen will be referenced to. The blade identified here will not move on the track-recording screen. This blade will be shown on the zero reference line; the other blades will be shown above or below this. Selecting Relative to “Avg” will cause the

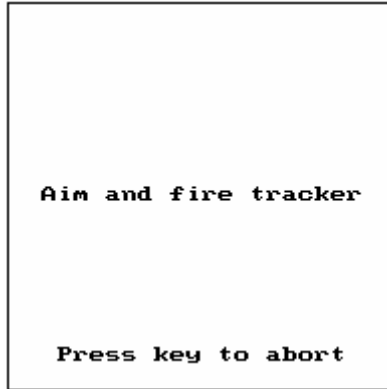
- track picture to be split evenly above and below the line based on the overall spread of the total number of blades selected. Use the [⇒] key to select the reference blade.
7. Move to the “Track Units” field using the [↓] key. Select the track units from either inches or mm by using the [⇒] key to toggle between the available selections. This will set the scale for the track-recording screen.
 8. The next fields may or may not be required depending on the type of tracking device you selected to use.

If using the strobe, complete the “Blade RPM” field as follows:
From the “Track Units field, use the [↓] key to move down to the “Blade RPM” field. Enter the blade rpm using the keypad. (Refer to Chapter 3, “Using the Model 2015 ProBalancer” if you are unfamiliar with using the keypad.)

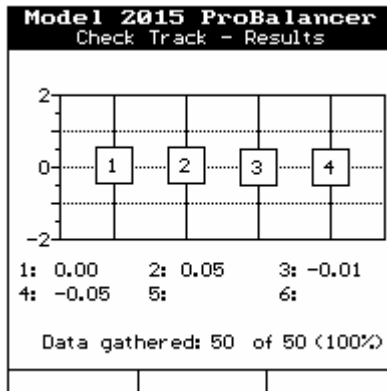
If using the Optical Tracker, complete the “No. of Rotations” and “Inches to Blade Tips” fields as follows:
From the “Track Units field, use the [↓] key to move down to the “No. of Rotations” field. Using the keypad, enter the number of rotations you wish to use when acquiring blade data. It is highly suggested that you use no less than 50 for the number of rotations to measure track. This will result in greater accuracy from the tracker. (Refer to Chapter 3, “Using the Model 2015 ProBalancer” if you are unfamiliar with using the keypad.) Use the [↓] key to move down to the “Inches to Blade Tips” field. Using the keypad, enter the distance, in inches, between the point where the tracker will be used, to the blade tip at the 12:00 position with the interrupter over the magnetic pickup. (Or the reflective tape in front of the Phototach when used as the one-per-revolution source.)
 9. When all fields are completed to your satisfaction, press [ENTER].
 10. The process, after setting up the tracking parameters, changes depending on the type of tracking device you are using.



If using a strobe - When the screen shown above appears, aim the strobe and press the trigger to fire. The targets will appear as a stacked image. By using the [F3] key you can spread the targets out from each other. Each time you press the [F3] key the targets separate further. To return the targets to the stacked position, press the [F1] “Reset” key. To rotate the group of targets to another position for ease of viewing, press the [F2] “Rotate” key. To input the target positions for storage in a main rotor job, use the [←] or [→] key to select the blade, and the [↑] or [↓] key to move the blade identifier to a relative position on the screen as seen with the strobe. When finished, press the [ENTER] key to exit back to the Main Menu banner screen.



If using the Optical Tracker - After arming the tracker by pressing [ENTER], a message to “Aim and Fire Tracker” appears on the screen (shown above). Aim the tracker and press and release the trigger to begin acquiring data. When acquisition is finished, the “Check Track Results” banner screen (shown in the following figure) appears.



The “Check Track -Results” screen presents the blade-tip-path information in both a graphical and a numeric format. The “Data Gathered” line at the bottom of the screen is an indicator of the quality of data. The higher the number of gathered data packets, the better the data quality. If the number is less than 75% of total packets, the data may be questionable. You may retake the track data by simply selecting the “Check Track” function again from the Main Menu banner screen and performing steps 1-10 again.