



Application Note

Enstrom Helicopter Corp. F28 and 280 Series

Main Rotor Track and Balance

Part Number: 11-200-0190

AppNote Number: A-ENF28-4040-MR (Rev. 3.00, Feb 2011)

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Application Note

Application Note Number	A-ENF28-4040-MR
Revision	3.00 (From SIL #0121 Addition A)
Function	Main Rotor Track and Balance
Airframe	Enstrom Helicopter Corp. F28 and 280 Series
Engine	N/A
E-Setup Number	a-enf28-4040-mr.asf
ACES Systems Analyzer	Model 4040
Boot/App Version	Boot 3.xx/App 3.xx or later
Procedure	N/A

Introduction

This Application Note covers the required equipment, equipment installation, analyzer setup, data acquisition and solution process for using the ACES Systems Model 4040 Viper Analyzer with the Main Rotor Performance Option to perform main rotor track and balance on the Enstrom Helicopter Corp. F28 and 280 Series. General instructions for the use of the Model 4040 can be found in the Model 4040 User Manual #4040-OM-01 (P/N 75-900-4040) and Optical Tracker Operational Supplement #540-OM-1 (P/N 75-900-2021). All procedures for track and balance and all adjustments should be made in accordance with the Airframe Maintenance Manual.

NOTE

Before beginning the track and balance procedure it is important to read and understand the current revision of Service Information Letter #0121. Follow the procedures for preparing the helicopter found in this publication. The SIL also contains valuable information on reducing cyclic feedback. This document is not intended to be a replacement for the SIL but to help adapt the procedure found there for use with the ACES equipment.

A. Required Equipment

The following equipment is required to perform a Main Rotor Track and Balance*:

Item	Quantity	Description	Part Number
1.	1	Analyzer, Model 4040CE	10-100-4040CE
2.	1	Tachometer, Optical, PhotoTach (New)	10-100-1773
3.	1	Cable, Tach, Generic, 50'	10-320-0126
4.	1	Sensor, Vibe, Accel, 991D-1	69-100-0075
5.	1	Cable, Sensor 991D-1, 25'	10-320-0162
6.	1	Mount, ¼X28 Sensor, Vibe ¼" Hole, S/Stl	22-430-0035

7.	1	Tape, Reflective, Roll, 10'	10-400-0176
8.	1	Tracker, Optical, Model 540-2	75-900-0542
9.	1	Option, 4040 Main and Tail Rotor	11-900-0005
10.	1	Mount, PhotoTach, Main Rotor	22-430-0118

*This listing shows the latest design parts. It is acceptable to perform this task using previous designs with the appropriate accessories. For compatibility issues, contact ACES Systems.

Optional Equipment

The following equipment may be used as an alternate when accomplishing the job:

Item	Quantity	Description	Part Number
11.	1	Target Assy, Tip	As Required
12.	1	Cable, Interf. Assy, Strobe	10-320-0161
13.	1	Strobelight	As Required

Miscellaneous Equipment

Tape or tie wraps to secure cables to airframe.

If adjustments are made to the main rotor balance, use only hardware or balance weights that are specified in the applicable airframe maintenance manual.

List of abbreviations

PCL: The Pitch Change Link

FLT: One flat of adjustment on the PCL. Equal to 1/6 of a turn of the PCL.

DEG: Degrees of Trim Tab adjustment

B. Equipment Installation

1. Place the analyzer ([Item 1](#)) in the flight compartment.
2. Grease the Main Rotor Head.
3. Bleed the Main Rotor Dampers.
4. Set all tabs at the recorded angles on the “Blade Information Sheet” or zero all the tabs.
5. Mount the PhotoTach:
 - 5.1 F28 Series - Remove the aft inboard mounting screw for the right-hand fuel cell. Install PhotoTach ([Item 2](#)) into M/R PhotoTach Mount ([Item 10](#)) leaving the two PhotoTach

mounting screws loose. Insert fuel cell mounting screw through the ¼ inch hole in the PhotoTach Mount. Reinstall fuel cell mounting screw in bulkhead. Insure adequate threads protrude through bulkhead. Use a longer screw if necessary. (Figure 1) Rotate Main Rotor until the Number 1 blade is over the nose of the aircraft as shown. The blade over the nose of the aircraft will become “TARGET” for balancing. The static location of this blade determines the “Aiming Point” for track acquisition. The remaining blades will be identified as, “A”, and “B” in passing order as shown in Figure 2 below.

- 5.2 280 Series - Install PhotoTach (Item 2) into M/R PhotoTach Mount (Item 10) leaving the two PhotoTach mounting screws loose. Remove the center screw of the right-hand portion of the 5- screw “V” on top of the air scoop. Insert screw through the ¼ inch hole in the PhotoTach Mount. Reinstall screw in air scoop. Insure adequate threads protrude. Use a longer screw if necessary. (Figure 1)

NOTE

See Paragraph D.3 below for additional installation instructions of PhotoTach and Tape.

6. Install Vibration Sensor Mount with ¼” Hole (Item 6) to the right-hand side of the center console. Use the second screw from the bottom to allow adequate clearance for the Sensor and Cable. Install 991D-1 Vibration Sensor (Item 4) into the Mount with the connector facing **Down**. Insure clearance between T/R pedals and Mount, Sensor and Cable. (Figure 3).

NOTE

Secure and route cables as not to interfere with hot or rotating components and aircraft controls. Insure there is adequate slack in the cables to allow full cyclic and collective inputs.

7. Install Tach Cable (Item 3) by connecting the end of the cable identified as “TACH INTERFACE” to the PhotoTach. Safely route the cable to the location of the analyzer. Connect the end of the cable identified as “ANALYZER” to the “TACH 1” connector on the analyzer.
8. Install Vertical Vibe Sensor Cable (Item 5) on the Vertical Vibration Sensor as installed in Step 6 above by connecting the end of the cable identified as “991D-1” to the Vibration Sensor. Safely route the cable to the location of the analyzer. Connect the end of the cable identified as “2020” to the “CHANNEL A” connector on the analyzer.
9. Connect the Optical Tracker (Item 8) to the Aux./Comm port on the Analyzer.
10. Reinstall any previously removed cowlings. Return aircraft to flying configuration.

NOTE

The best results are obtained if the helicopter is loaded so that the helicopter is relatively heavy.

Equipment Installation Diagram

Figure 1



280FX shown, other models similar

Figure 2

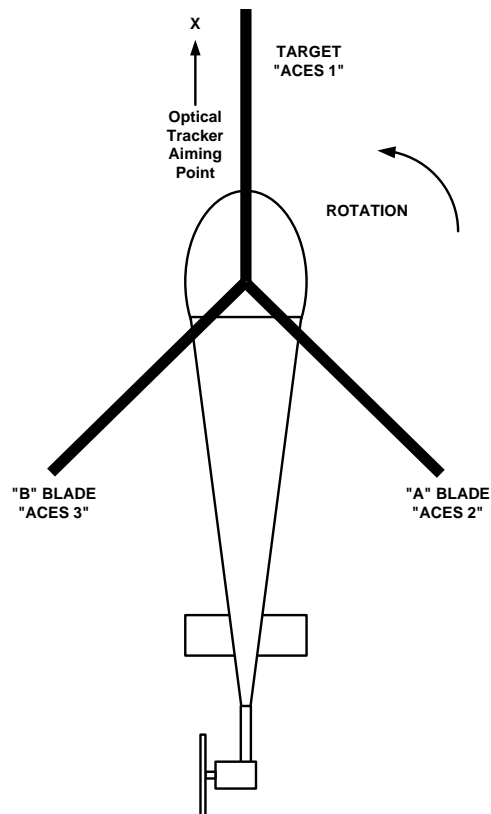
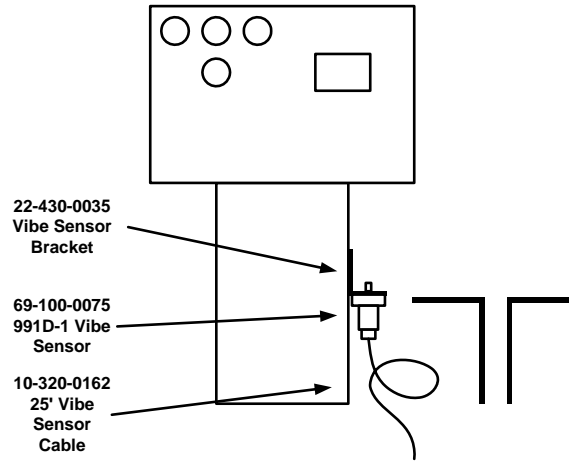


Figure 3



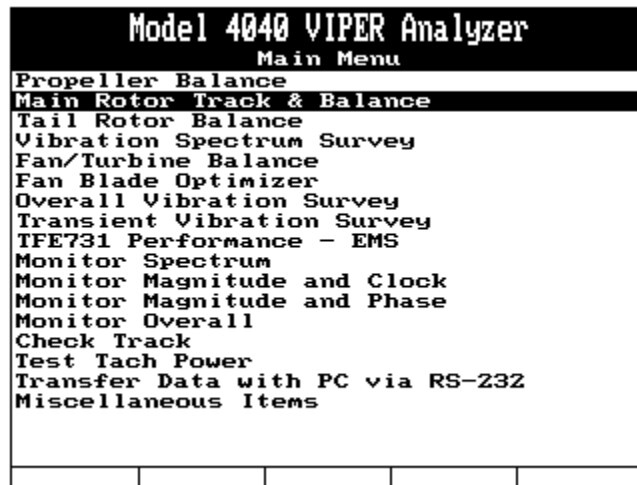
Location typical

C. Analyzer Set Up

NOTE

The analyzer requires a different configuration when using English measurement units than when configured using metric measurement units. Where there is a difference the English configuration will be displayed on the left, the metric configuration will be displayed on the right.

1. Insure the analyzer battery is charged prior to starting the job. See the Model 4040 User Manual #4040-OM-01 (P/N 75-900-4040) Chapter 2 for detailed instructions on battery charging.
2. Turn the analyzer ON by pressing the [ON/OFF] key.
3. From the Main Menu shown below, select “Main Rotor Track & Balance” and press the [ENTER] key.



4. From the Main Rotor Track & Balance Menu shown below, select “Start Job” and press the [ENTER] key.

Model 4040 VIPER Analyzer				
Main Rotor Track & Balance Jobs				
Start Job				
Resume Job				
Manage Jobs				
Manage Setups				

5. If the setup for the Enstrom Helicopter Corp. F28 and 280 Series is listed in the Setup List, select it using the [↓] key, press [ENTER] and go to [Section D below](#). If the setup for the Enstrom Helicopter Corp. F28 and 280 Series is not in the Setup List, press the [F1], “New” key and go to [Step 6 below](#).

Select				
Setup List				
1)	a-enf28in-4040-mr			
2)	a-enf28mm-4040-mr			
New			Copy	

6. The “Main Rotor Setup” screen now appears. Enter the Main Rotor Setup as shown below. You can enter any name that is convenient for locating the setup in the future. When completed press [ENTER].

NOTE

For A Series aircraft use 332 for Blade RPM.

English

```

Model 4040 VIPER Analyzer
Main Rotor Setup
Name: a-enf28in-4040-mr
Vertical Chan: A
Lateral Chan: None
Sensor: 991D-1
Tach Type: Optical Tach Chan: 1
Number of Weight Positions: 3
Blades: 3 Relative to: 1
RPM: 350 Trk Units: in

Conditions
Ground Both Hover Both
Cruise Both
    
```

Metric

```

Model 4040 VIPER Analyzer
Main Rotor Setup
Name: a-enf28mm-4040-mr
Vertical Chan: A
Lateral Chan: None
Sensor: 991D-1
Tach Type: Optical Tach Chan: 1
Number of Weight Positions: 3
Blades: 3 Relative to: 1
RPM: 350 Trk Units: mm

Conditions
Ground Both Hover Both
Cruise Both
    
```

- The “Tracking Setup” screen will be displayed next. Enter the values as shown in the illustration below. Press [ENTER] to continue.

English

```

Model 4040 VIPER Analyzer
Tracking Setup

Rotor Diameter: 32.00 ft
Lead/Lag Units: in
    
```

Metric

```

Model 4040 VIPER Analyzer
Tracking Setup

Rotor Diameter: 9.75 m
Lead/Lag Units: mm
    
```

- The “Main Rotor Conds. Setup” screen will appear next as displayed below. The “limit” field under each measurement type will set the point at which the analyzer will determine whether corrections are needed. This is not reflective of a limit imposed by the manufacturer. See the applicable Maintenance Manual for the track and vibration levels required for return to service. Enter the information as indicated in the illustration below. Press [ENTER] to continue.

English

```

Model 4040 VIPER Analyzer
Main Rotor Conds. Setup
Vert Lat Track
Chart Chart Adj.
Conds. ID ID ID
Ground 0 0 1
Hover 1 0 0
Cruise 2 0 0

Limit 0.20 0.20 0.50

Enter ID, or 0 if no adjustment.
Different charts use different IDs.
    
```

Metric

```

Model 4040 VIPER Analyzer
Main Rotor Conds. Setup
Vert Lat Track
Chart Chart Adj.
Conds. ID ID ID
Ground 0 0 1
Hover 1 0 0
Cruise 2 0 0

Limit 0.20 0.20 12.70

Enter ID, or 0 if no adjustment.
Different charts use different IDs.
    
```

9. The next screen to appear will be the “M/R Adj Symbol & Soln Logic” screen. The function of this screen is to determine the direction of movement for a positive (+) adjustment. In this application, a positive move indication means to ADD weight, sweep a blade FWD, and move the blade UP with both Pitch Change Link (BLADE) and Trim Tab (TAB). Enter the values as shown below. When completed press [ENTER]. Next, the balance charts will be entered into the analyzer.

Model 4040 VIPER Analyzer				
M/R Adj Symbol & Soln Logic				
Adjustment	Positive Value	Meaning		
Weight:	ADD			
Sweep:	FWD			
Blade:	UP			
TAB:	UP			
Soln:	MAX			

10. The first balance chart to define will be the “Vert: Hover” chart. Enter the information as presented below. Press [ENTER] to continue.

Model 4040 VIPER Analyzer				
Main Rotor Chart Setup				
Name:	Vert Hover			
Type:	Regular	Sweep Only:	No	
No Adjustment Bld/Pos:	None			
Max ICF Update:	150	% R(°):	45	
Adj Unit:	FLI	Adj/IPS:	3.000	
Bld/Pos	MoveLine	Bld/Pos		
TARGET	1	:	20	
A	9	:	20	
B				
Bld/Pos: in CW or CCW order				
+Adj = WtAdd/SwFwd/BldUp/TabUp				
Help				

11. The second chart to define will be the “Vert: Cruise” chart. Enter the information as shown below and press [ENTER] to continue.

Model 4040 VIPER Analyzer			
Main Rotor Chart Setup			
Name:	Vert Cruise		
Type:	Regular	Sweep Only:	No
No Adjustment Bld/Pos: None			
Max ICF Update:	150	% R(°):	45
Adj Unit:	DEG	Adj/IPS:	1.000
Bld/Pos MoveLine Bld/Pos			
TARGET	1	:	20
A	9	:	20
B		:	
Bld/Pos: in CW or CCM order			
+Adj = WtAdd/SwFwd/BldUp/TabUp			
Help			

12. Finally, the “Tracking Influence Setup” screen data will be entered as shown below. When completed, press [ENTER] to continue.

English

Metric

Model 4040 VIPER Analyzer				
Tracking Influence Setup				
Conds	Adj Name	Unit	Adj/in	Max Upd%
Ground	PCL	Fit	3.000	25
No Adjustment Bld/Pos: None				
Blades:				
	Name			
1.	TARGET			
2.	A			
3.	B			
+Adj = WtAdd/SwFwd/BldUp/TabUp				

Model 4040 VIPER Analyzer				
Tracking Influence Setup				
Conds	Adj Name	Unit	Adj/mm	Max Upd%
Ground	PCL	Fit	0.118	25
No Adjustment Bld/Pos: None				
Blades:				
	Name			
1.	TARGET			
2.	A			
3.	B			
+Adj = WtAdd/SwFwd/BldUp/TabUp				

D. Data Acquisition

- The “Job Identification” screen will be displayed, as shown below. Use the analyzer keypad to enter a customer name in the “Name:” field. The analyzer will maintain a list of customer names as new names are entered. If names have been previously entered into this analyzer, you may press the [F1] “Names” key and select a customer’s name from the provided list. Press the [↓] key to move to the next field and use the analyzer keypad to enter the optional aircraft registration and aircraft total time as required. When all fields are complete, press the [ENTER] key to accept and continue.

Model 4040 VIPER Analyzer				
Job Identification				
Name: CUSTOMER NAME				
A/C Registration: N1234				
A/C Total Time: 123.4				
Press ENTER to continue				
Names				

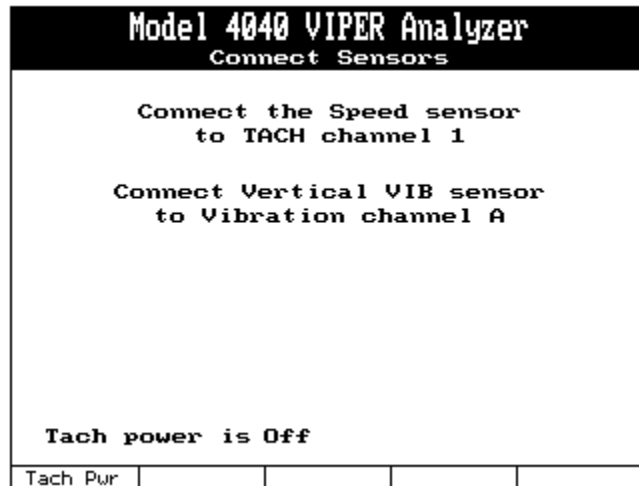
- The next screen to be displayed is the “Tracking Selections”, as shown below. Complete the first two fields as shown below. Then, rotate the Main Rotor head so that the Magnetic Pickup and Interrupter align (Figure 2). Measure the distance from the location where the Optical Tracker will be held to the tip of the “TARGET” blade. Enter the distance, in inches, into the “Inches To Blade Tip” field. When all fields are complete, press the [ENTER] key to continue.

NOTE

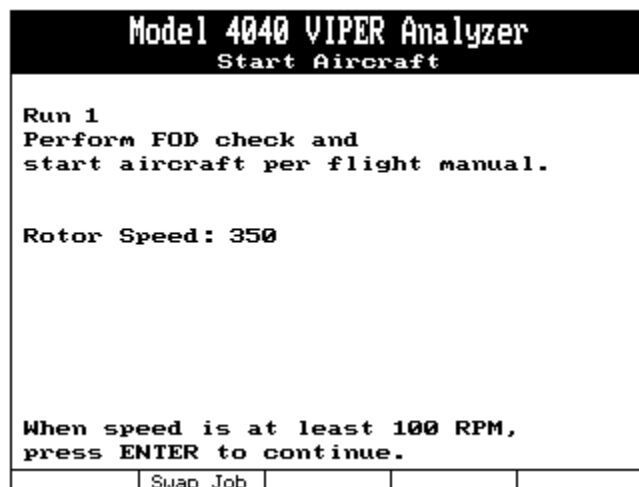
The entry on this screen for “Inches To Blade Tip” will ALWAYS be entered in inches. This field does not change when the “Track Units” changes.

Model 4040 VIPER Analyzer				
Tracking Selections				
Track Device: Tracker				
- For Optical Tracking Only -				
Number of Rotations: 20				
Inches To Blade Tip: 135				

- The next screen to be displayed will be the “Connect Sensors” screen as illustrated below. This screen gives instructions on installing sensors and cables. The Tach will be automatically energized when this screen is exited. You may also check the PhotoTach alignment by pressing the [F1] “Tach Pwr” key which supplies power to the optical tachometer for checking alignment with the reflective tape. Press the [ENTER] key to exit this screen and continue.

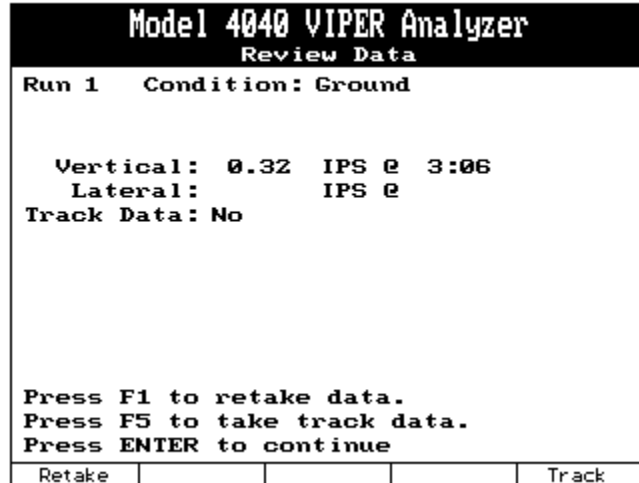


- 3.1 Press **[F1]** “Tach Pwr”. Position one blade over the aircraft’s nose. (See Section B [Figure 2](#) above)
- 3.2 Adjust the PhotoTach to obtain an angle of approximately 5 degrees from perpendicular to the mast and tighten the two PhotoTach mounting screws. This will produce the best results when reading RPM. Hold a 2-inch piece of reflective tape, reflective surface facing the PhotoTach, against the mast. Do not remove backing at this point.
- 3.3 The red “Gate” light on the back of the PhotoTach should illuminate as the reflective tape is properly aligned in front of the LED. Clean an area of the mast in preparation for mounting the reflective tape.
- 3.4 Remove the backing and install the reflective tape on the clean mast surface.
- 3.5 Press **[ENTER]** when finished with Tape installation.
4. The “Start Aircraft” screen will be displayed with instructions to “Perform FOD check and start aircraft per flight manual”. When the aircraft is started and normal operating conditions have been established, press the **[ENTER]** key to continue. Use the **[F2]** “Swap Job” key to return directly to the Main Menu without rebooting the analyzer.

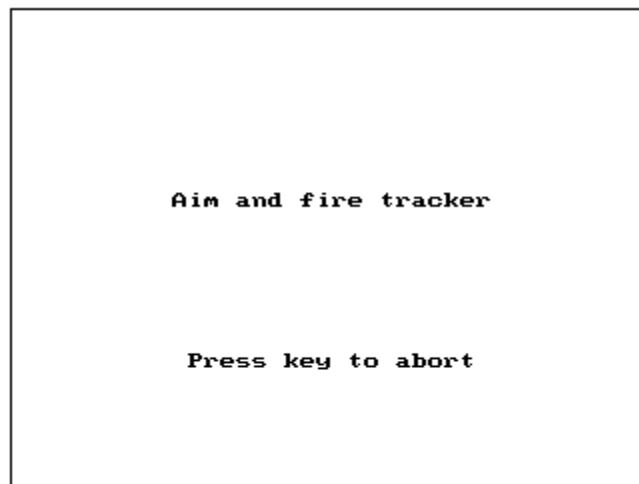


See the Model 4040 User Manual #4040-OM-01 (P/N 75-900-4040) Chapter 20 for detailed instructions on how to read the “Converging Vibration Indicator and Scale”.

7. The “Review Data” screen will be displayed as shown in the example below. These are the amplitude and clock angle readings for the condition. You may retake the data by pressing the **[F1]** “Retake” function key as indicated at the bottom of the screen. When satisfied with the acquired data as displayed, press the **[ENTER]** key to accept the data with “No” track information and continue. To record the track picture for the condition, press **[F5]** “Track” and proceed to [Paragraph 8](#) below.



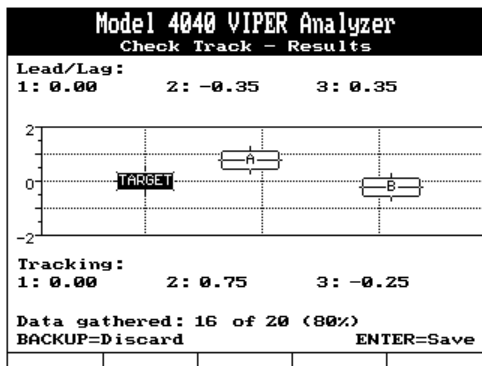
8. The “Aim and fire tracker” screen will be displayed as shown in the example below. Aim the tracker at the point in space that will lead the “TARGET” blade when the Magnetic Pickup and interrupter are aligned. (See Section B [Figure 2](#) above) Raise the tracker smoothly towards the rotating rotor disk while observing the LEDs on the back of the tracker.



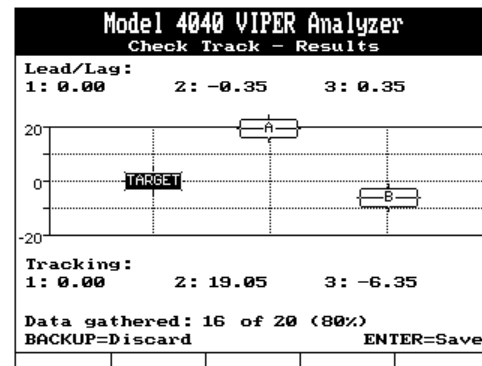
- 8.1 Raise the tracker until the three green LED lights are illuminated.
- 8.2 Raise the tracker further to verify the upper set of three red LEDs illuminate. Illumination of the three upper LEDs verifies there is enough contrast to operate the

- tracker. If the upper set of red LEDs does not illuminate, there is not enough contrast for the tracker to operate properly.
- 8.3 If sufficient contrast is verified, slowly lower the tracker to a point where the center green LED is illuminated. Hold the tracker steady in this position.
 - 8.4 To activate the tracker, press and release the trigger one time. It is not necessary to hold the trigger down. Continue to hold the tracker steady (green lights illuminated) while acquiring data. The amber light will pulsate during data acquisition.
 - 8.5 When the amber light extinguishes, data acquisition is complete and you may lower the tracker.
9. The track picture will be displayed on the “Check Track – Results” screen. Lead/lag readings will be displayed at the top of the screen. A negative number (-) indicates a “Lead” condition as this blade is the indicated measurement less than the average interval. A positive number (no sign) indicates a “Lag” condition as this blade is the indicated measurement more than the average interval. Readings will be displayed graphically in the center of the screen. Lead readings will be indicated to the Left of the average interval marking vertical line. Lag readings will be displayed to the Right of the line. Track readings will be displayed above or below the line relative to the average of all blades or in relation to the blade specified in the setup, [Paragraph C.6 above](#). The bottom of the screen will give a numeric reading of the blade track elevation. The bottom line will display the number of data samples gathered. If the total number of data samples gathered is less than 75% of the total number of samples requested the results are questionable and should be retaken. When you are happy with the quality of the data, press **[ENTER]** to continue.

English



Metric



10. The “Review Data” screen will reappear as shown in the example below. This time the “Track Data” line will read “Yes” indicating that track data has been taken and stored in this condition. You may retake vibration data by pressing the **[F1]** “Retake” function key as indicated at the bottom of the screen. You may retake the track data by pressing the **[F5]** “Track” key. If you are satisfied with the current measurements, press **[ENTER]** to continue.

Model 4040 VIPER Analyzer				
Review Data				
Run 1 Condition: Ground				
Vertical: 0.32 IPS @ 3:06				
Lateral: IPS @				
Track Data: Yes				
Press F1 to retake data.				
Press F5 to take track data.				
Press ENTER to continue				
Retake				Track

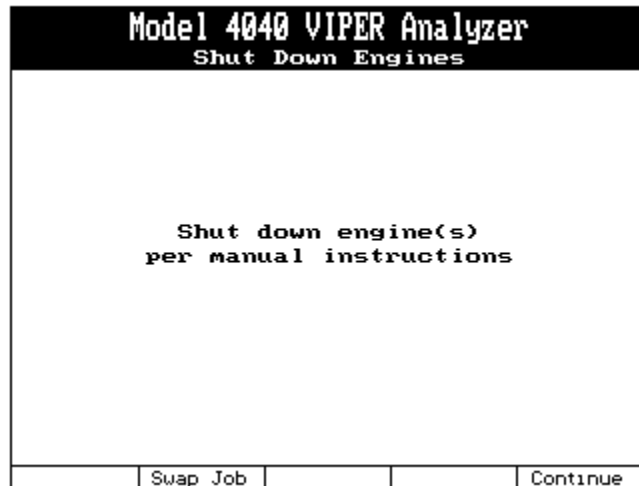
11. The “Select Aircraft Condition” screen will reappear as shown in the example below. This time any condition that has stored vibration and/or track data will have an [x] preceding the condition name. Repeat sequence through all flight regimes. You can choose to “End Run” at any time by pressing the [F1] “End Run” key. This sequence will allow you to review all previous measurements before proceeding to the suggested solutions. If a condition has recorded a vibration or track reading that is in excess of the limits defined in [Paragraph C.8 above](#), the word “Adjust” will appear above the [F2] key. Pressing [F2] “Adjust” will bypass the review process and move directly to the suggested solution screens. In either case you will be taken to [Paragraph 12 below](#).

Model 4040 VIPER Analyzer				
Select Condition				
[x]	Ground			
[]	Hover			
[]	Cruise			
End Run				Chk Track

NOTE

The [F1] “End Run” and [F2] “Adjust” keys are the only ways to exit this screen. Pressing [ENTER] will restart the data collection process for the highlighted condition.

12. The analyzer will display the “Shut Down Aircraft” screen as shown below. Use the [F2] “Swap Job” key to return directly to the Main Menu without rebooting the analyzer. When the engine shut down process is complete, press the [F5] “Continue” key to review the data or view the suggested solutions.

**NOTE**

It is important to remember that when installing or removing weights and recording their positions the influence used for the next run will be updated by the result from the previous run's solution. Therefore, be as accurate as possible when recording adjustments made regardless whether the recommended solution is implemented. The only entries on these screens should reflect the actual solution implemented.

13. The analyzer will present all of the solutions possible from the data gathered. It is possible for the analyzer to give two adjustments that would adversely affect the other. The user is ultimately responsible for determining which adjustments to implement and which to discard. If a suggested correction is determined unnecessary, use "Inst=None" [F2] to eliminate data in the "Installed" column. Make the desired adjustments to the rotor system as called for by analyzer and press [ENTER]. The user will now be prompted to start the engine and continue with Run #2.

E. Solution Examples

This section contains samples of the solution screens possibly encountered during the job. The corrections are examples only and do not reflect actual aircraft data. The actual solution screens encountered by the user will vary depending upon data acquired. Regardless of the measurement units selected, the adjustments should be similar.

CAUTION

At no point should a correction be made that contradicts information in the maintenance manual.

The analyzer will attempt to resolve the vibration and/or track level to 0.00. This may require adjustments that are not practical to duplicate. The technician must determine the closest possible match to the suggestion.

NOTE

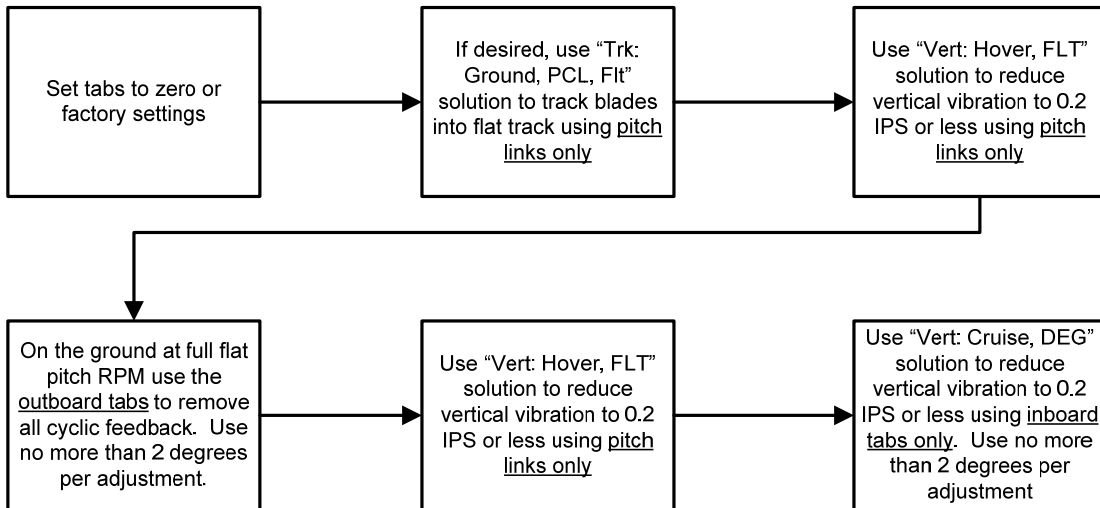
Solutions will only be presented for readings that exceed the limits set in [Paragraph C.8 above](#). It is necessary to add the closest measurable amount of correction and record the actual correction in the "Installed" column.

The Model 4040 analyzer can only update internal Influence Coefficients when one solution per run

is implemented. Even though multiple solution screens are presented, entering solutions from multiple screens on the same run will disable the Influence Coefficient Update during the job.

NOTE

The flow chart below can be found in SIL #0121. This flow should be followed when deciding which solution to implement on the ACES analyzer.



1. The first possible solution screen is the “Vert: Hover, FLT” solution. This screen will suggest adjustments to the main rotor Pitch Change Links in Flats (FLT) based on the measured vertical vibration readings in a Hover.

In the example below, it is suggested to adjust the “TARGET” blade UP 1.03 FLT and to adjust the “B” blade UP 0.86 FLT. The closest possible adjustment was to adjust “TARGET” blade UP 1.00 FLT and to adjust the “B” blade UP 1.00 FLT. These adjustments were made and entered into the analyzer.

Model 4040 VIPER Analyzer		
M/R Suggested/Installed Adjustments		
Run 2		
Name: Vert Hover, FLT		
Bld/Pos	Suggested	Installed
TARGET	1.03	1.00
A	0.00	0.00
B	0.86	1.00
+Adj = WtAdd/SwFwd/BldUp/TabUp		
Inst=Sugg	Inst=None	Quit Job

2. The second possible solution screen available is from the “Vert: Cruise, DEG” chart. This screen will suggest adjustments to the Inboard Trim Tab in Degrees (DEG) based on the measured vertical vibration readings in Cruise.

In the example below, it is suggested to adjust the “TARGET” blade UP 0.34 DEG and to adjust the “B” blade UP 0.29 DEG. The closest possible adjustment was to adjust “TARGET” blade UP 0.50 DEG and to adjust the “B” blade UP 0.50 DEG. These adjustments were made and entered into the analyzer.

Model 4040 VIPER Analyzer			
M/R Suggested/Installed Adjustments			
Run 3			
Name: Vert Cruise, DEG			
Bld/Pos	Suggested	Installed	
TARGET	0.34	0.50	
A	0.00	0.00	
B	0.29	0.50	
+Adj = WtAdd/SwFwd/BldUp/TabUp			
Inst=Sugg	Inst=None		Quit Job

- The final possible solution comes from the “Tracking Influence Setup” screen. The analyzer will present a suggested correction to the Pitch Change Link (PCL) in Flats (Flt) to bring the track within limits.

In this case, adjusting the “A” blade DOWN by 2.25 Flt and adjusting the “B” blade UP by 0.75 Flt should correct the track split. The closest measurable adjustment is to adjust the “A” blade DOWN by 2.00 Flt and adjust the “B” blade UP by 1.00 Flt. These adjustments were made and entered into the analyzer. To enter a negative (-) number press the [SPACE] key once.

Model 4040 VIPER Analyzer			
M/R Suggested/Installed Adjustments			
Run 1			
Name: Trk Ground, PCL, Flt			
Bld/Pos	Suggested	Installed	
TARGET	0.00	0.00	
A	-2.25	-2.00	
B	0.75	1.00	
+Adj = WtAdd/SwFwd/BldUp/TabUp			
Inst=Sugg	Inst=None		Quit Job

F. Quit Job

- Repeat [Steps D.3.1](#) through [D.13](#) above applying the solutions as necessary. If all measurements in all conditions are below the limits set in [Paragraph C.8](#) above, the message below will appear. Pressing the **[BACKUP]** key will allow you to return to review the measurements from all runs. Pressing the **[ENTER]** key will allow you to take additional readings if you choose. Pressing **[F5]** “Quit Job” will mark the job as complete and take you to [Paragraph 2](#) below.

Model 4040 VIPER Analyzer				
M/R Track & Balance				
No solutions are recommended.				
Press BACKUP to view data.				
Press F5 to quit job.				
Press ENTER for next Run.				
				Quit Job

- From the screen shown below, decide if you would like to update the ICF used in the original setup. Pressing **[F1]** “Yes” will add the chart corrections from this job to the ICF from the original setup. This can be a powerful tool when using this setup in the future. The chart corrections learned as a result of the previous job will be applied from the beginning of the next job that uses the same setup. This can reduce the number of runs required to balance the helicopter. If you select **[F5]** “No” any chart corrections applied during the previous job will be discarded. The setup will revert to the chart settings in place before the job was started. This can be useful if the helicopter didn’t respond as others of the same model or if a mistake was made somewhere during the job that caused extra runs to balance the helicopter.

Model 4040 VIPER Analyzer				
Update Setup ICFs?				
Do you want to update the setup's influence coefficients based on the result of this job?				
Yes				No