I. References

Item	Document Number / "Title"	Company
1	9001-0011, "GEN II FRDS Maintenance Manual"	Trotter Controls, Inc.
2	9001-0012, "GENII FRDS Operation Manual"	Trotter Controls, Inc.
2	PS-0031, "FRDS GEN II - Sensor Calibration"	Trotter Controls, Inc.
3	PS-0057, "FRDS GENII – Door Angle Offset to Compensate for Actuator Mechanical Adjustment"	Trotter Controls, Inc.
4	PS-0058, "FRDS GEN II – OBTAINING SUPER-USER AUTHORIZATION"	Trotter Controls, Inc.
5	ER-0074, "FRDS GEN II - SYSTEM OPERATION PARAMETERS (TWEAKS)"	Trotter Controls, Inc.

II. Revisions

Revision D: 09/04/2010

- Added references section and references
- Added revisions section
- Added procedure for adjusting gatebox door offset parameter before performing dump pit calibration
- Added section numbers to headings
- Added several menu screen shots for added clarity
- Added line 7 to "VI. Prerequisite Conditions" (JBF - 3/7/13)

III. Overview

This document provides detailed instructions for calibrating the Leakage Table in "LEARN" mode during dump-pit water flow calibration of the second generation (GEN II) FRDS installed on Air Tractor firefighting aircraft.

IV. Objectives

To provide a procedure for calibration of the Leakage Table using "LEARN" mode during dump-pit calibration of the second generation (GEN II) FRDS installed on Air Tractor firefighting aircraft.

V. Background

Each aircraft is calibrated so that the quantity of retardant delivered during "split load" operation is precisely controlled.

The calibration procedure consists of the following basic steps:

1. Verify that the door angle sensor is properly adjusted.
2. Verify that the hopper float sensor is properly adjusted.
3. Normalize the gatebox door angle to account for mechanical differences.
    a. Adjust the gatebox angle via software control so that the flow rate delivered is consistent from gatebox to gatebox.
    b. This adjustment compensates for the mechanical differences that exist from gatebox to gate box.
4. Calibrate each delivery condition using the system in "Learn". This consists of performing various deliveries with water so that the system can 'learn' the characteristics of the specific aircraft being calibrated.

The calibration performed in step four above is used to generate a "leakage table" or a set of fudge factors used by the system to compensate for non-ideal behavior of the gatebox and the amount of water that is "leaked" as the doors are closing at the end of the delivery.

The leakage table consists of a two-dimensional table of cells (see Table 4 ~ Dump pit data Calibration Data table), each cell containing a leakage correction (in gallons) for a specified "coverage level" (row value) and "gallons to dump" (column value).

The leakage correction (calibrated in this process specification) is used by the system to apply gate timing corrections based on known errors ("leakage") which are measured during this calibration procedure.

Each cell in the table is calibrated using a "successive approximation" method, where each subsequent "test dump" calculates a leakage correction value that is closer to the "correct" leakage value than the value from the previous "test dump". When the leakage value calculated from a test dump is the same (or close to) the value calculated from a previous test dump, the cell is considered to be calibrated.

After every cell in the Leakage Table is calibrated, the Leakage Table is considered to be calibrated.

The Leakage Table has positions for "gallons to dump" of 200, 400, and 600 gallons (and 800 gallons in the case of an AT-1002), and positions for "coverage level" of 0.5, 1, 2, 3, 4, and "Max" (4.5) (and coverage levels of 5, 6, and 6.5 for the 1002).

VI. Prerequisite Conditions

The following items must be verified before dump pit calibration of the system:

1. The hopper gallons sensor offset has been set and the hopper gallonage is correctly adjusted per Trotter Controls PS-0031.
2. The gatebox door angle sensor offset has been set so that the voltage with a closed door is 4.00 (±0.01) when looking at the gate angle sensor analog input in maintenance mode per Trotter Controls PS-0031.
3. The hopper float has been verified to operate correctly without binding or obstructions over the entire range of operation and the hopper sensor has been set per Trotter Controls PS-0031.
4. The hopper vent control arm is connected and the vent is operating correctly when the doors are opened.
5. Hydraulic oil is present in the system.
6. The hydraulic system pressure is 2800 to 3100 PSI before each delivery.
7. Have approximately 21,600(+/-) gallons of water for the 802F and 32,400 (+/-) gallons of water for the 1002, it is recommended to have some kind of recovery tank to minimize water waste.

VII. Successive Approximation Learning

During the dump pit calibration, multiple deliveries at the same gallons to dump and coverage level settings are performed to allow the system to determine the optimum leakage factor to be used for the specific settings entered. As successive deliveries are performed, the actual delivered gallonage will approach the ideal delivered amount.

The "successive approximation" method calculates a new correction (or leakage) value for the cell based on the "previous" correction value and the newly measured correction value. This method ensures that the system is perfectly matched to the specific gatebox installed on the aircraft.

VIII. Initial Preparation

Items in this section must be completed before the gatebox can be calibrated. In general, there are three cases that apply when gatebox calibration is required:

Case 1 – The system has previously been successfully calibrated at all points.

- It is desirable to re-calibrate one or two points to improve the delivered gallons accuracy.
- In this case, DO NOT reset the leakage values to factory values since all leakage data is reset.
- You do not need to perform the gatebox door offset adjustment procedure.
- Skip to Section XIII on page 11 to enter Learn Mode and follow all subsequent instructions.

Case 2 – The system has not been successfully calibrated before.

- The factory leakage data should be restored before proceeding
- Do perform the gatebox door offset adjustment procedure.
  - The gatebox mechanical offset will be adjusted, before dump calibration commences.
- Follow the steps starting in Section IX directly below.

Case 3 – The system was previously calibrated but the actuator has been re-timed.

- Refer to PS-0057 for instructions on how to adjust the door offset without re-calibrating the entire leakage table.

IX. View or Reset the leakage factors to factory values

Resetting the leakage factors to factory values erases any previous dump pit calibrations. Only perform this if you are sure of what you are doing.

1. Power-up the system. (Turn on the master power to the aircraft)
2. Set the MODE switch to AUTO. Turn the HYD POWER switch to the OFF position.
3. Press the NO/MENU panel switch to enter the main system menu.
4. Use the selector knob to select "Maint" and push the selector knob to enter the maintenance menu.
5. Select "Leakage Table" and push the selector knob to display the Leakage Table.
6. To View the Leakage Factors:
   a. Use the selector knob to scroll through the Leakage Table to determine which, if any, cells are already calibrated.

      i. Cells that are set to factory values are shown in "normal" text. Cells that are **different** than factory values are highlighted in "inverse" text. *In the figures shown, both the active and factory leakage factors are identical*.

      ii. Pressing the YES panel switch will toggle the display between "active" values and "factory" values. The factory values are for reference only

      iii. Use the selector knob to scroll the display to show leakage factors for coverage 2.0 and higher.

7. Press the NO/MENU panel switch (or press the selector knob) to exit Leakage Table display.
8. Press the NO/MENU panel switch to enter the main system menu.

9. Select "Config" and push the selector knob to enter the configuration menu.

10. Confirm that the proper aircraft is selected, and if not, select the aircraft you are calibrating.

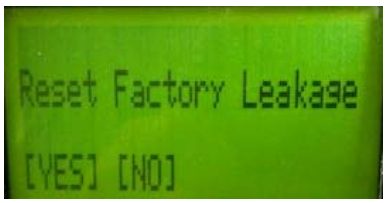
    a. Turn the HYD POWER switch to the OFF position.
    b. Rotate the selector knob to highlight the line beginning with "AIRCRAFT:".
    c. Press the selector knob to select menu item.
    d. Rotate the selector knob to highlight the aircraft model you are calibrating.
    e. Press the selector knob to select the aircraft type. *Memory is saved at this time.*

11. Select the line beginning with "Learn" and push the selector knob.

12. **This step will reset the leakage table to factory values. Skip this step unless you intend to reset the dump pit calibration leakage factors with factory default values.**

    a. Turn the HYD POWER switch to the OFF position.
    b. Rotate the selector knob to highlight "Reset Factory Leakage"
    c. Push the selector knob.
    d. Press the YES/FOAM switch to answer the "Reset Factory Leakage?" prompt. Hold the switch for at least 1 second. *Memory is saved at this time.*

13. Press the NO/MENU panel switch to exit the configuration menu.



The factory values for the leakage table are now active.

X. Adjust the gatebox door offset

This step is used to fine-tune the gatebox so that its flow performance is very similar to the gatebox used to develop the factory default leakage values.

For systems that have not been previously calibrated, adjusting the door angle offset parameter will reduce the time required to calibrate the system during dump pit testing and ensures that all points can be successfully calibrated.

The procedure for "tuning" the door offset to the optimum value is presented in this section.

A software parameter is used to adjust the hydraulic actuator angle (door angle) offset used during retardant flow rate control for AUTO mode operation of the FRDS. This offset can be adjusted to compensate for changes in the hydraulic actuator mounting and other mechanical tolerances in the gatebox.

The method for editing this parameter depends on the firmware revision installed in the FRDS GEN II pilot interface.

- Version 1.14 ~ Version 2.04
  - Super User Factory Access is required.
    - A real time password must be entered.
    - Call Trotter Controls for information on how to enter this mode.
    - Please review PS-0058 before calling for support if you have this process specification available.
  - The memory location for the door offset adjustment is 377 for Versions 1.14 ~ 2.04.

- Version 2.05 and higher
  - No Super User Factory Access is required.
  - The memory location for the door offset adjustment is 93 for firmware versions 2.05 and higher.

A. Editing the Door Offset Parameter

The adjustment value for door opening angle is specified in degrees and can be either positive or negative. When modifying the adjustment value in the procedure outlined below, enter any positive (or zero) value as a positive number. If the desired adjustment value is negative, first subtract the desired negative value from 256 before storing it. For example, if the desired value is -7, enter a value of 249. (256-7=249).

Examples of door angles and the door offset parameter are shown in the Table 1 below.

Table 1 ~ Example values for the door offset parameter "tweak" contained in memory location 377 (v1.14 ~ v2.04 firmware) or location 93 (v2.05 and higher firmware).

Door Offset (degrees)	Tweak Value
0	0
1	1
10	10
-1	255
-2	254
-3	253
-4	252
-5	251
-6	250
-7	249

For additional information, please refer to Trotter Controls ER-0074 for additional instructions related to the parameters or “tweaks” that control how the system operates.

B. Procedure for Editing the Door Offset Parameters

- Check the version of the firmware displayed when the pilot interface first receives power.
- If the firmware version is v2.04 or lower, call Trotter Controls to enable factory authorization to access protected parameters.
  - Refer to Trotter Controls PS-0058 for instructions on how to do this. Note that this authorization must be performed each time power is removed from the pilot interface (the password codes will be different).
  - After factory authorization is obtained, follow the procedure below
- If the firmware version is v2.05 or higher, no factory authorization is required, follow the procedure below.

After obtaining authorization (v2.04 and lower), perform the following steps:

1. Press the NO/MENU switch to enter the main menu.
2. Using the selector knob, select “Maint” from the menu and press the selector knob.
3. Select “Tweak Parameters” and press the selector knob.
4. Rotate the selector knob to select tweak number 377 for firmware versions 2.04 or lower or tweak number 93 for firmware versions 2.05 or higher.
5. Pressing the YES/FOAM switch highlights the value in tweak memory location 377 or 93 (v2.05 or higher).

6. Rotating the selector knob changes the highlighted value to the desired adjustment value.
7. Pressing the YES/FOAM switch again, accepts the change.
8. Press the NO/MENU switch to exit tweak mode and return to the main display.
9. Without restarting the system, perform a test dump to check the initial door angle. Follow the steps outlined in Section XI, Steps 2-11. Note that restarting the system "loses" this edited value unless memory is first saved per the SAVE MEMORY Section starting on page 10.
10. Once the door angle is adjusted properly per the procedure outlined in Section XI below, the door offset adjustment process is complete.
11. If the door angle needs further adjustment, increase (or decrease) the adjustment value by repeating this process.
12. Be sure to SAVE MEMORY before turning off the aircraft master power or removing all power from the pilot interface (see the SAVE MEMORY Section starting on page 10 of this document for details).

XI. Door Offset Calibration Procedure

1. Set the initial door offset value to +5 degrees per the section above.
2. For firmware versions v2.04 and lower, the tweak memory address is 377. For versions v2.05 and higher, the memory address is 93.
3. Set COVERAGE LEVEL to 0.5.
4. Fill hopper with 800 gallons.
5. Set the GALLONS to DUMP to 600 gallons.
6. Turn the HYD POWER switch to ON and the Arm switch to ARMED and wait for hydraulic pressure to reach 2800 PSI or higher.
7. Verify that all personnel are clear of the gate.
8. Press the dump switch to initiate a delivery.
9. Observe the amount of water actually delivered.
10. Using the tweak interface, adjust the door offset (tweak memory location 377 or 93 (v2.05 and higher) per the previous section to make the system dump the correct amount of water.

    a. If the amount of water left in the hopper at the end of the delivery is less than 200 gallons, the door offset should be decreased (reduces the flow of water).
    b. If the amount of water left in the hopper at the end of the delivery is greater than 200 gallons, the door offset should be increased (increases the flow of water).
    c. An adjustment of 1 to 3 degrees per parameter adjustment is recommended. The total adjustment required should be less than $\pm$ 15 degrees.

    See Table 1 for examples of the door offset value.

    - Positive numbers are represented as integers from 1 to 127.
    - Negative numbers are represented as numbers from 128 to 255.

11. Once the door offset parameter has been modified, always exit to the main menu before dumping since this may affect the dump performance.
12. Repeat steps 2 thru 11 until the correct amount of water is present at the end of the delivery. (i.e. 200 gallons within 10~15 gallons)
    a. This offset is the optimum offset for the specific gatebox/actuator mechanical setup.
    b. Note that it may not be possible to achieve EXACTLY 200 gallons at the end of the delivery. The goal is to adjust the offset to get as close as possible to 200 gallons at the end of the delivery.
13. Now save the new offset value to memory per the section below.

XII. Save memory

Once the door offset parameter has been adjusted, memory must be saved to retain the value just entered.

To save memory, perform the following steps:

1. Set the HYD POWER switch to ON.
2. Set the MODE switch to TIMER. Adjust the timer to the values that you want the system to use as default values when the system is powered up for TIMER mode.
3. Set the MODE switch to AUTO.
4. Adjust the Coverage Level and Gallons to Dump to the values that you want the system to use as default values when the system is powered up for AUTO mode.
5. Set the HYD POWER switch to OFF.
6. From the main display, press the NO/MENU switch to enter the “Main Menu”.
7. Rotate the selector knob to select “Maint” and push the selector knob.
8. Rotate the selector knob to select “Save Memory” and push the selector knob.
9. Select “both” and push the selector knob.
10. Wait for “SaveMemory” to briefly appear and disappear from the bottom line of the display.
11. Display should return to the main screen but if not exit out using the NO/MENU switch until the main screen appears.

Now remove all power from the system, restart the system and verify that the system delivers the proper gallons for a 0.5 coverage level and 600 gallons to dump delivery.

The system is now ready for dump pit calibration in “Learn” mode as described in Section XIII below.

XIII. Entering Learn Mode

The system has a special mode called "LEARN" that is used only during dump pit calibration of the system. The GEN II FRDS self calibrates or "learns" the flow characteristics of the gatebox as specific deliveries are made when operated in this mode.

Before performing the dump pit calibration for each of the coverage level and gallons to dump conditions to be calibrated, place the system in "learn" mode by performing the following steps:

1. Power-up the system. (Turn on the master power to the aircraft)
2. Set the MODE switch to AUTO. Turn the HYD POWER switch to the OFF position.
3. Press the NO/MENU panel switch to enter the main system menu.
4. Use the selector knob to select "Maint" and push the selector knob to enter the maintenance menu.
5. *Optional* - Select "Leakage Table" and push the selector knob to display the Leakage Table.
6. *Optional* - Use the selector knob to scroll through the "ACTIVE" Leakage Table to determine which, if any, cells are already calibrated.
   a. Cells that are set to factory values are shown in "normal" text. Cells that are **different** than factory values are highlighted in "inverse" text.
   b. Pressing the YES/FOAM panel switch will toggle the display between "active" values and "factory" values. The factory values are for reference only
7. *Optional* - Press the NO/MENU panel switch (or push the selector knob) to exit Leakage Table display.
8. Press the NO/MENU panel switch to enter the main system menu.
9. Select "Config" and push the selector knob to enter the configuration menu.
10. Confirm that the proper aircraft is selected, and if not, select the aircraft you are calibrating.
11. Select the line beginning with "Learn" and push the selector knob.
12. Select the item "Learn" (to activate Learn mode) and push the selector knob.
13. Confirm that Learn mode is activated (the display should show "Learn:Learn").

14. Press the NO/MENU panel switch to exit the configuration menu.

15. Confirm that two integer values separated by a hyphen (initially "999-999") are displayed immediately below the Hopper gallons value.

16. Set the HYD POWER switch to the ON position. This switch must be set to ON to display, and allow changing the values for "Coverage Level" and "Gallons to Dump".

17. Toggle the ARMED switch up (armed position) to enable the "DUMP" switch for auto-dump operation.

Note that "LEARN" mode is active **only** for the duration of the current system run. If power is removed from the system or restarted for any reason, these steps need to be repeated.

XIV. Process Steps for each Calibration Point

The settings for the Coverage Level, the Gallons to Dump, and the initial gallons that should be contained in the aircraft hopper for each delivery are shown in Table 2 (AT802F) & Table 3 (AT1002F).

NOTE: The calibration sequence for a specific starting hopper quantity, coverage, and gallons to dump condition (or cell in the table) should be repeated until the actual gallons remaining in the hopper (after the delivery is complete) is within the following tolerances:

- Coverage level 0.5 ~ 2.0: Remaining gallons after dump is within 10 ~ 15 gallons of the expected amount.
- Coverage level greater than 2.0: Remaining gallons after dump is within 15 ~ 25 gallons of the expected amount.

Table 2 ~ Calibration points for AT802F aircraft (GEN II FRDS only)

AT802F Calibration Points			
Initial Gallons in Hopper	**800**	**800**	**800**
Coverage Level	**Gallons to Dump**	**Gallons to Dump**	**Gallons to Dump**
Coverage Level 0.5	600	400	200
Coverage Level 1.0	600	400	200
Coverage Level 2.0	600	400	200
Coverage Level 3.0	600	400	200
Coverage Level 4.0	600	400	200
Coverage Level 4.5	600	400	200

Table 3 ~ Calibration points for AT1002F aircraft (GEN II FRDS only)

AT1002F Calibration Points				
Initial Gallons in Hopper	**1000**	**1000**	**1000**	**1000**
Coverage Level	**Gallons to Dump**	**Gallons to Dump**	**Gallons to Dump**	**Gallons to Dump**
Coverage Level 0.5	800	600	400	200
Coverage Level 1.0	800	600	400	200
Coverage Level 2.0	800	600	400	200
Coverage Level 3.0	800	600	400	200
Coverage Level 4.0	800	600	400	200
Coverage Level 4.5	800	600	400	200
Coverage Level 5.0	800	600	400	200
Coverage Level 6.0	800	600	400	200
Coverage Level 6.5	800	600	400	200

For each cell in the Leakage Table above, perform the following steps:

1. Fill the hopper with water until the hopper gauge (side-loader gauge) reads 800 gallons ± 5 gallons (full tank for AT802) or 1000 gallons ± 5 gallons (full tank for AT1002).

2. On the main display, use the selector knob to select a "coverage level" value and a "gallons to dump" value to be calibrated ("learned"). Values for coverage level are 0.5, 1, 2, 3, 4, and "Max" (4.5) for the AT802 and include 5, 6, and "Max" (6.5) for the AT1002. Values for "gallons to dump" should be set to 200, 400, or 600 gallons.

3. After selecting a "coverage level" value and a "gallons to dump" value to be "learned", confirm that the dump area is clear and press the "DUMP" switch to activate the delivery.

4. After the dump operation is complete, the gate doors will close, the system will wait a short delay for the water level to stabilize, and then the system will measure the actual amount of water in the tank and compare it to the expected amount of water in the tank. The appropriate cell in the Leakage Table will be adjusted accordingly, and the entire Leakage Table will be saved to EEPROM.

5. The two integer values (separated by a hyphen) immediately below the "hopper (gallons)" display will show the number of gallons in the hopper before and after the dump.

6. Wait for the bottom line of the pilot interface to briefly display: **"SaveMemory".**

7. This indicates that the current leakage value has been saved and it's OK to fill the hopper again and test the next point.

8. Set the HYD PWR switch to OFF.

9. **LEARN mode should be turned OFF at the end of the calibration process to avoid data corruption. This must be done by doing the following:**

    a. **Set the Hyd Pwr switch to OFF.**
    b. **enter the "Config" menu and reset the "Learn" mode to "Normal".** ***Confirm that "Normal" mode is activated (the display should show "Learn:Normal")***.

10. Now save memory using the procedure outlined in the SAVE MEMORY section of this document on page 10.

XV. Document the calibration data

The calibration data for the system should be recorded and saved to ensure that it can be manually re-entered if it is lost or if the pilot interface needs to be serviced or replaced.

A. Calibration Leakage Table - Documentation

Once the aircraft has been calibrated, record the leakage values in Table 4. This is important since this data can be used to re-construct the leakage data for a given aircraft in the event that the data is lost.

Use the maintenance menu to display the leakage table and record the leakage table values as displayed on the pilot interface in Table 4. Perform the following steps:

1. Press the NO/MENU panel switch to enter the main system menu.
2. Select “Maint” and push the selector knob to enter the maintenance menu.
3. Select “Leakage Table” and push the selector knob to display the Leakage Table.
4. Use the selector knob to display the Leakage Table. Cells that are set to factory values are shown in “normal” text. Cells that are **different** than factory values are highlighted in “inverse” text. Pressing the YES/FOAM panel switch will toggle the display between “active” values and “factory” values.
5. In the figure shown, leakage factors for coverage 0.5 and 1.0 are shown. Rotate the selector knob to scroll through the table and display the leakage factors for coverage levels higher than 1.0.
6. Press the NO/MENU panel switch (or press the selector knob) to exit the Leakage Table display.
7. Record the leakage values in Table 4 for the corresponding aircraft.

XVI. Calibration Analog Data – Documentation

Factory Use – Required, Field Use – Optional

Once the aircraft has been calibrated, record the analog calibration values in Table 5. This is important since this data can be used to restore analog calibration data for a given aircraft in the event that the data is lost.

Use "Tweak Parameters" from the "Maint" menu to read and record this data. In tweak mode, this data must be viewed in "word" mode (tweak 0 contains value of 2, and tweak number increments by 2 are shown, Ex., 0, 2, 4, 6…100, 102.., tweak 100 also contains the counts for 101, and 102 also contains the values for 103 and so on). If the tweak numbers are not shown in increments of 2, press the LAMP TEST switch until the numbers do show as increments of 2 as explained previously.

Note that these values can also be read using "Analog Calibrate" from the "Maint" menu, and recording the two numeric values under the column heading "Count" for each of the analog devices.

Calibration Fingerprint Data

Once the aircraft has been calibrated, record the fingerprint values in the table below. This is extremely important since this data can be used to quickly verify the leakage and analog calibration data for a given aircraft in the event that it is lost. Since this data is exclusively specific to each aircraft it can be considered like a fingerprint.

1. Press the NO/MENU panel switch to enter the main system menu.
2. Select "Maint" and push the selector knob to enter the maintenance menu.
3. Select "Logo/Version" and push the selector knob to display the Logo, Version, and Version Date.

4. The menu below displays the Software version and the compile date.
5. Press the Yes/FOAM panel switch twice more to enter the Fingerprint configuration display menu shown below.

6. The menu, shown above, displays the aircraft configuration and fingerprint information.
7. Record the analog and leakage fingerprint values in Table 4 for the corresponding aircraft.
8. Archive the recorded values for possible future reference.
9. Keep Pressing and releasing the Yes/FOAM panel switch until the main AUTO or TIMER display appears.

Note: *Fingerprint information can also be viewed under Maint – Compare RAM/EE. It may be necessary to hold the "Run Pump" switch down and push the selector knob to skip down to the display shown in the figure above.*

XVII. Calibration Data Sheets – AIRCRAFT SPECIFIC

After calibration is complete, record the values on the tables below and place inside the relay enclosure for future reference.

Table 4 ~ Dump pit data Calibration Data table

PI S/N:_____	**Analog Calibration Fingerprint:**_____		**Leakage Calibration Fingerprint:**_____	
A/C Model: AT_____F A/C S/N : _____		**Date: _____ By:_____**	**Door Offset:_____**	**(AT1002 ONLY)**
Gallons to Dump	**200**	**400**	**600**	**800**
Coverage Level 0.5				
Coverage Level 1.0				
Coverage Level 2.0				
Coverage Level 3.0				
Coverage Level 4.0				
Coverage Level 4.5				
Coverage Level MAX				(N/A)
(AT1002 ONLY)				
Coverage Level 5.0				
Coverage Level 6.0				
Coverage Level MAX				

This section is for factory use only (field use optional). Air Tractor and Trotter Controls maintains this information for each pilot interface.

Table 5 ~ Analog Calibration Data table

Pilot Interface S/N _____
Date _____ **By** _____

Tweak number	Value	Description
100		Photo 0 volt calibration value
102		Photo 4.50 volt calibration value
112		Accel One, -1 G calibration value
114		Accel One, +1G calibration value
124		Accel Two, -1 G calibration value
126		Accel Two, +1G calibration value
136		Gate Angle 0 volt calibration value
138		Gate Angle 4.50 volt calibration value
148		Hopper Gallons 0 volt calibration value
150		Hopper Gallons 4.50 volt calibration value
160		Hyd. Pressure 0 volt calibration value
162		Hyd. Pressure 4.50 volt calibration value
172		Foam Gallons 0 volt calibration value
174		Foam Gallons 4.50 volt calibration value
184		15.00 volt calibration value
186		24.00 volt calibration value

Notes: