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E-86 Load Weigh System
For The
Eurocopter AS350 Series

Owner's Manual

Owner's Manual Number 120-126-00
Revision 2
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RECORD OF REVISIONS

<i>Revision</i>	<i>Date</i>	<i>Page(s)</i>	<i>Reason for Revision</i>
0	6/29/06	All	Initial Release
1	09/08/08	1-3 & 2-4	Changed washer P/N 510-476-00 to 510-095-00.
2	03/10/10	TOC & 2-1, 2-2, 2-3, & 2-8	Updated manual to reflect new load weigh harness configuration.

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Section 1

General Information

Introduction

The 200-310-00 Load Weigh System is approved as a replacement for the load weigh system on Eurocopter AS350 Series helicopters, equipped with a B3 type swing suspension system. The B3 type swing systems are installed on AS350 B3s and could be retrofitted to earlier models via Eurocopter Service Bulletin 2500.62.

The Load Weigh System is a compliment to the helicopter lifting system. Its purpose is to display the weight of the load carried on the cargo hook. It consists of three components: the cockpit mounted load weigh indicator, the load cell, and the interconnecting electrical harness between them.

Warnings, Cautions and Notes

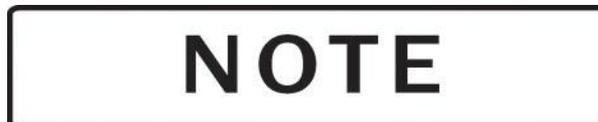
The following definitions apply to Warnings, Cautions and Notes used in this manual.



Means that if this information is not observed, serious injury, death or immediate loss of flight safety could occur.



Means that there is a risk of injury or degradation in performance of equipment if this information is not observed.



Draws the reader's attention to information which may not be directly related to safety, but which is important or unusual.

Indicator Features

The features of the C-39 Load Weigh Indicator include:

- Front panel programmable
- Data Recorder communications link
- Internal back lighting system
- Night Vision Compatible (NVG) When an external NVG source is used in place of the internal back light.
- Hook-Open Warning Display
- Analog Meter Output Signal

Load Cell Specifications

Table 1-1 Load Cell Specifications

Weight	0.80 lbs (.36 kgs)
Accuracy Over Operating Temperature Range	0.5% \pm 1 digit
Operating Temperature Range	+70°C to -45°C
Storage Temperature Range	+80°C to -50°C

Indicator Specifications

Table 1-2 Indicator Specifications

Size	Fits standard 2¼" instrument panel hole
Weight	0.43 lbs (.20 kgs)
Operating Voltage	21 to 31 VDC
Current Consumption	< 25 mA
Accuracy Over Operating Temperature Range	0.1% ± 1 digit
Operating Temperature Range	+70°C to -45°C
Storage Temperature Range	+80°C to -50°C
Scaleable Analog Output	0 to 5VDC ± 0.5%

Bill Of Materials

The following items are included with each system, if shortages are found contact the distributor from whom the system was purchased.

Table 1-3 Bill Of Materials

P/N	DESCRIPTION	QTY.
210-221-00	Load Cell Assembly	1
270-106-02	Load Weigh Internal Harness	1
210-095-00	C-39 Indicator	1
290-772-00	Indicator Mount Bracket	1
235-136-00	Connector Bracket	1
510-475-00	Button Head Screw, Black	3
510-095-00	Washer	3
510-457-00	Screw	4
510-029-00	Nut	4
510-062-00	Washer	4
510-481-00	Screw	4
512-011-00	Tie-wrap	1
120-126-00	Owner's Manual	1
123-026-00	ICA	1
121-032-00	RFMS	1

Inspection

Inspect each component for evidence of mishandling and damage. If damage is evident, do not use it. File a claim with the carrier and notify the distributor from whom the system was purchased.

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Section 2

Installation Instructions

Introduction

These procedures are provided for the benefit of experienced aircraft maintenance facilities capable of carrying out the procedures. They must not be attempted by those lacking the necessary expertise.

Electrical Wiring Installation

Install electrical harness (P/N 270-106-02). Route it along the existing electrical release harnesses (reference Figure 2.1) while observing the following precautions:

- Pick up existing wire runs by opening existing cable clamps. Nylon ties alone may not be used for primary support.
- The distance between supports should not exceed 21 inches.
- Bend radius of wire or harness must not be less than 10 times the wire or harness diameter.
- Inspect and verify that the wire harness may not be manually deflected into a structure with a bend radius of less than .13”.

Make the appropriate connections with terminal lugs. Secure the wire to the C-39 indicator along the canopy with clamps and connect to the C-39 indicator. Refer to Figure 2.3 for electrical schematic.

The P/N 270-106-02 electrical harness includes a data line for use with an Onboard Systems Data Recorder or Analog Meter. These items are not included under this STC. Attach connectors to data line per pin out in Table 2.1 to connect the Analog Slave Meter or Data Recorder to the electrical harness “DATA” line. If a data connector is present on the data line use harness P/N 270-059-00 to connect to Analog Slave Meter. If the accessory connector is not used, stow this line of the harness.

NOTE

The data line may or may not be terminated with a connector depending on manufacture date.

Table 2.1. Optional Equipment Connectors

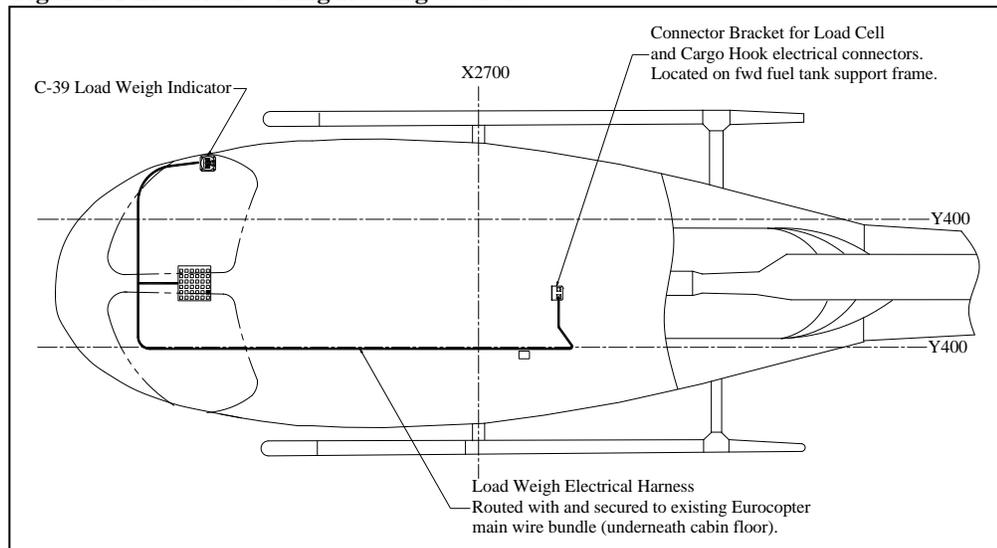
Analog Meter Connector P/N 410-130-00 Mfg P/N: MS3126F10-6P		
Pin	Color	Function
A	WH	Power
B	WH/GN	Clock
C	WH/OR	Data
D	WH/BL	Ground
E	Shield	Shield

Data Recorder Connector P/N 410-011-00, 410-057-00 & 410-020-00		
Pin	Color	Function
1	WH/BL	Ground
3	WH	Power
5	Shield	Shield
7	WH/GN	Clock Signal
9	WH/OR	Data Signal
4	Red*	Flight Switch
2	Purple*	Cap. Switch

*Optional

Electrical Wiring Installation continued

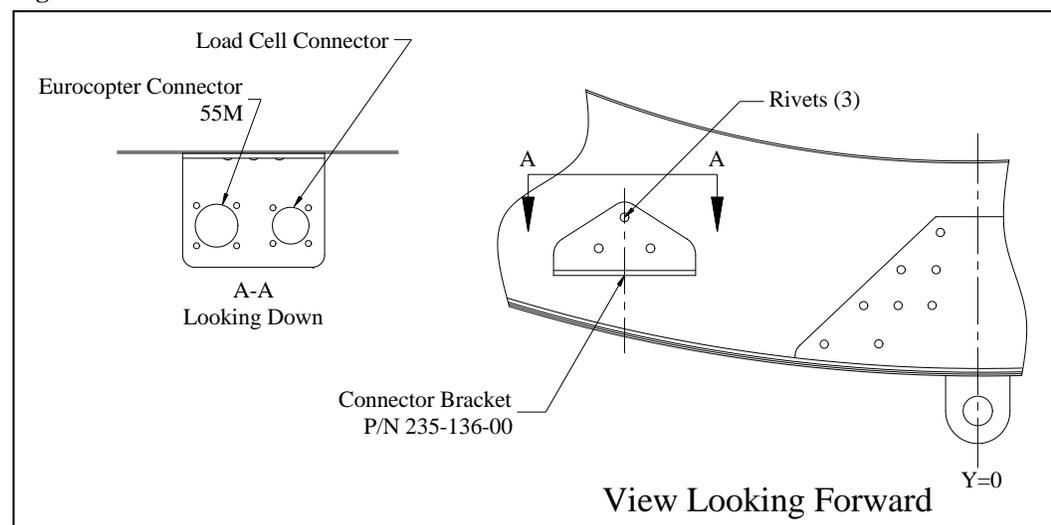
Figure 2.1 Electrical Wiring Routing Overview



- ❑ Remove Eurocopter connector 55M from the existing connector bracket at the forward fuel tank support frame.
- ❑ Remove the connector bracket at the fuel tank support frame by drilling out the three rivets that secure it.
- ❑ Install the supplied Connector Bracket (P/N 235-136-00) using the same holes and rivet p/n as the removed bracket (see Figure 2.2).
- ❑ Re-install Eurocopter connector onto the new Connector Bracket and fasten the load cell harness connector to the Connector Bracket with screws (P/N 510-481-00), washers (P/N 510-062-00), and nuts (P/N 510-029-00).

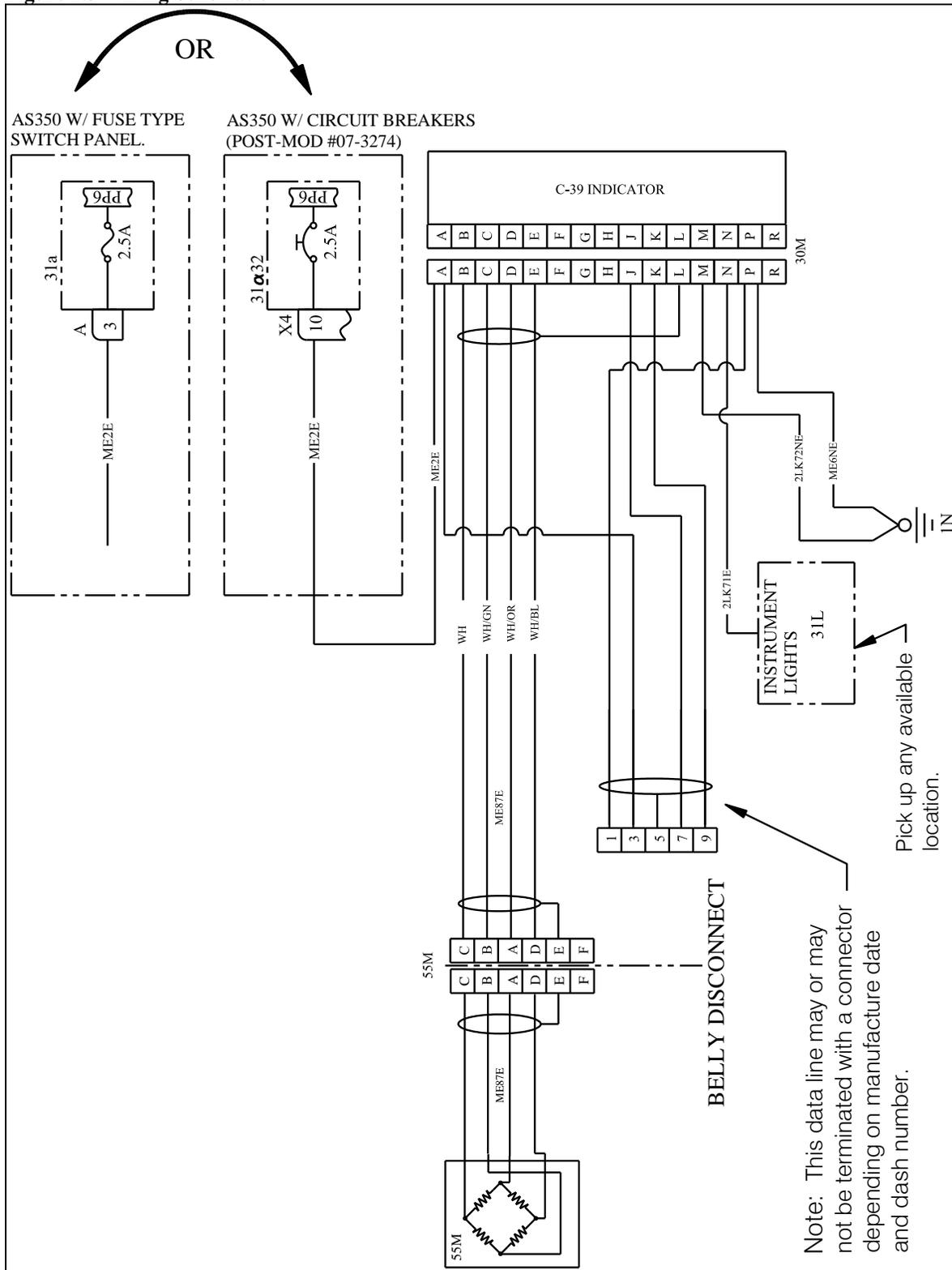
Important: Install screws with their heads on the bottom side of bracket flange (if nuts are installed on bottom side they will interfere with mating connector).

Figure 2.2 Connector Bracket Installation



Electrical Wiring Installation continued

Figure 2.3 Wiring Schematic

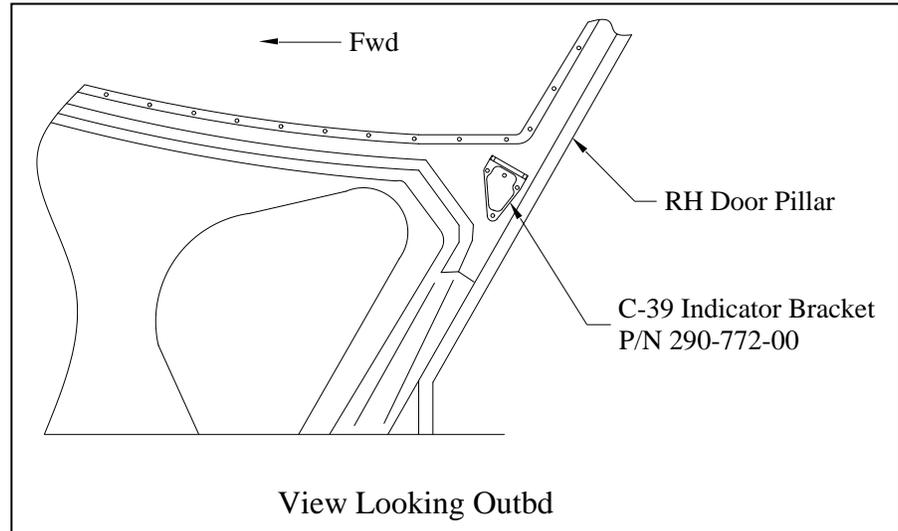


Cockpit Indicator Installation

The Indicator is mounted on the RH forward door pillar. If nut clips are not pre-installed in the door pillar, install them per the following.

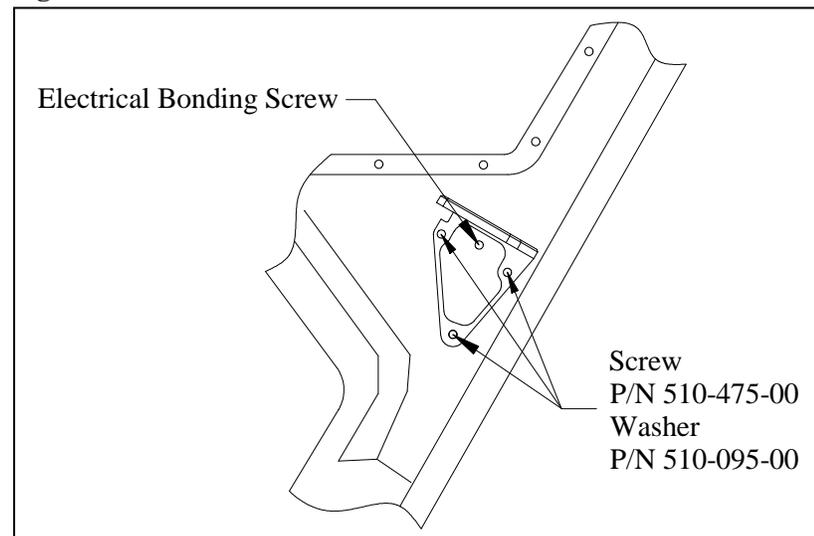
- Hold the Indicator Bracket (P/N 290-772-00) at a location as shown below and transfer its hole pattern to the door pillar.

Figure 2.4 Indicator Bracket Installation



- Drill three mounting holes in the RH door pillar to install the nut clips. Re-use the electrical bonding screw at the fourth location (see below).
- After completing electrical bonding, install the three nut clips (Eurocopter P/N SL211M5-1) and fasten Indicator Bracket with three screws (P/N 510-475-00) and three washers (P/N 510-095-00).

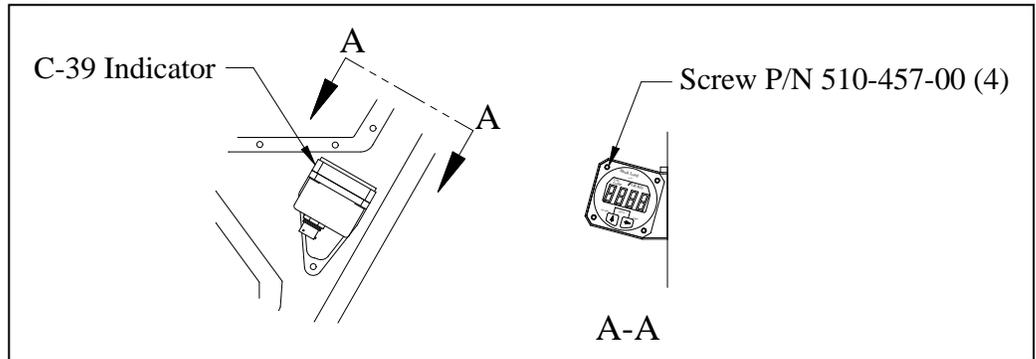
Figure 2.5 Indicator Bracket Hardware



Cockpit Indicator Installation continued

- Install C-39 Indicator (P/N 210-095-00) onto bracket with hardware as illustrated below.

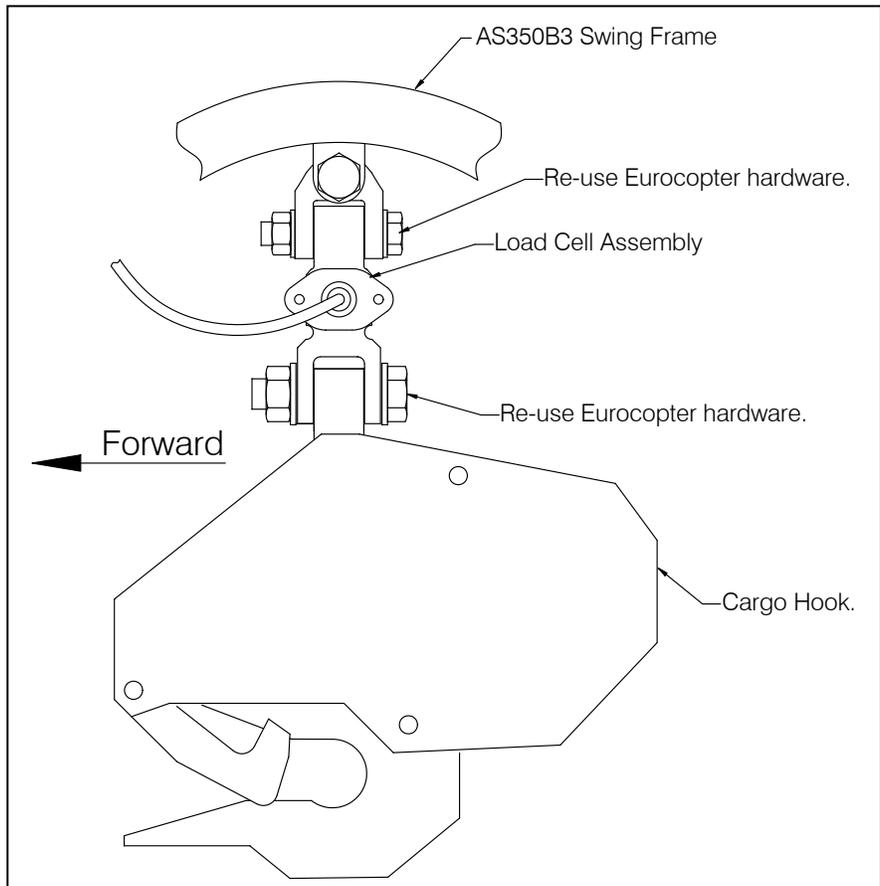
Figure 2.6 C-39 Indicator Installation



Load Cell Installation

Remove the cargo hook and the existing load cell from the swing suspension system and disassemble the load cell from the cargo hook. Retain hardware. Re-assemble the supplied load cell onto the cargo hook re-using the Eurocopter hardware. Attach the cargo hook and load cell onto the swing suspension system gimbal fitting re-using the Eurocopter hardware. The load cell must be oriented such that the load cell harness strain relief is to the left side (when looking forward) of the helicopter.

Figure 2.7 Load Cell Installation

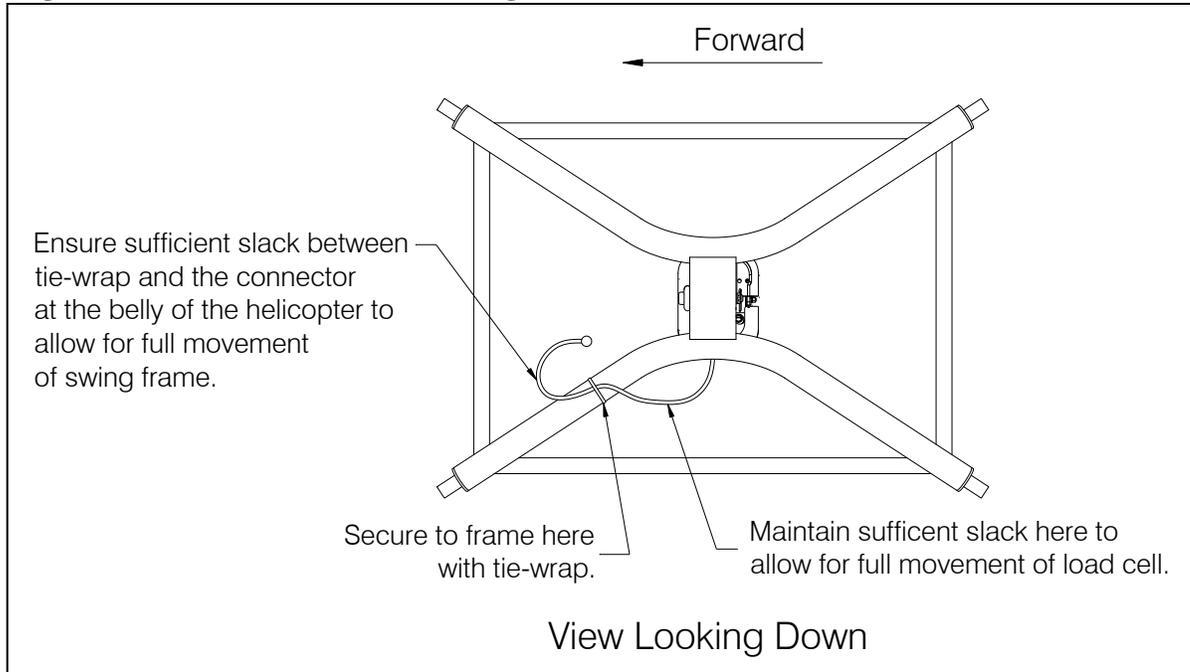


The leg of the Eurocopter Y harness that was routed to the Eurocopter load cell is no longer used. Either stow it or cut it off just outside the Y junction.

Load Cell Installation continued

Route the load cell harness from the load cell to the connector bracket installed previously as shown below.

Figure 2.8 Load Cell Harness routing.



Installation Check-Out

After installation of the load weigh system, perform the following functional checks.

1. Swing the cargo hook, load cell and swing suspension throughout their ranges of motion to ensure that the load cell harness has enough slack to allow full swing of the suspension assembly without being strained or damaged. The harness must not be the stops that prevent the cargo hook, load cell, and swing suspension from swinging freely in all directions.
2. Power on the Indicator and allow it to warm up for 5 minutes (with no load on the hook). Press both Indicator buttons at the same time to go to the Setup Mode. Scroll through the menu until the symbol “0 in” is displayed, then press the right button. Remove any weight that is not to be zeroed out and press either button to complete the procedure.

Component Weights

The weights and cgs of the Cargo Hook kit components are listed below. When performing weight and balance calculations remember to deduct equipment removed, such as load cell, etc.

Table 2.2 Weights and CGs

Item	Weight	Station
Removable Provisions*	.8 lbs (.36 kgs)	133 in (3375 mm)
Fixed Provisions**	1.0 lb (.45 kgs)	110 in (2794 mm)
Total	1.8 lbs (.82 kgs)	120.2 in (3211 mm)

* The removable provisions include the load cell and its associated external electrical harness. These items are easily removed if they are not needed on the helicopter's mission.

** The fixed provisions are those items of the kit that remain on the aircraft. This includes the internal electrical harness and the load indicator.

Cargo Hook Location

See the Eurocopter provided Flight Manual Supplement for external load weight and balance data.

Paper Work

In the US, fill in FAA form 337 for the initial installation. This procedure may vary in different countries. Make the appropriate aircraft log book entry. Insert the Rotorcraft Flight Manual Supplement P/N 121-032-00 into the Rotorcraft Flight Manual.

Section 3

Operation Instructions

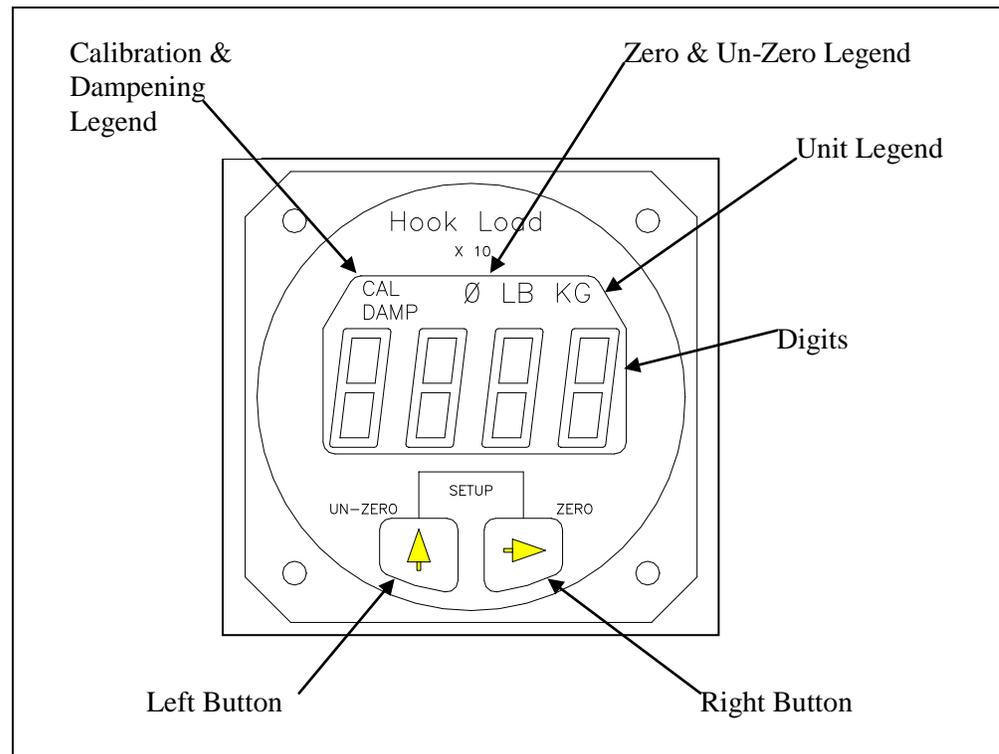
Load Weigh System

Indicator Front Panel

The C-39 Indicator front panel includes the following features.

- The four 7 segment LCD digits show the weight on the Cargo Hook and displays various Setup information.
- The Legends clarify the digital display. i.e. when the LB Legend is turned on, the display will be pounds, etc.
- The Right button is used to Zero the display in the Run Mode and select the digit to be changed in the Setup Mode.
- The Left button is used to Un-Zero the display in the Run Mode and scroll the selected digit in the Setup Mode.

Figure 3-1 Front Panel

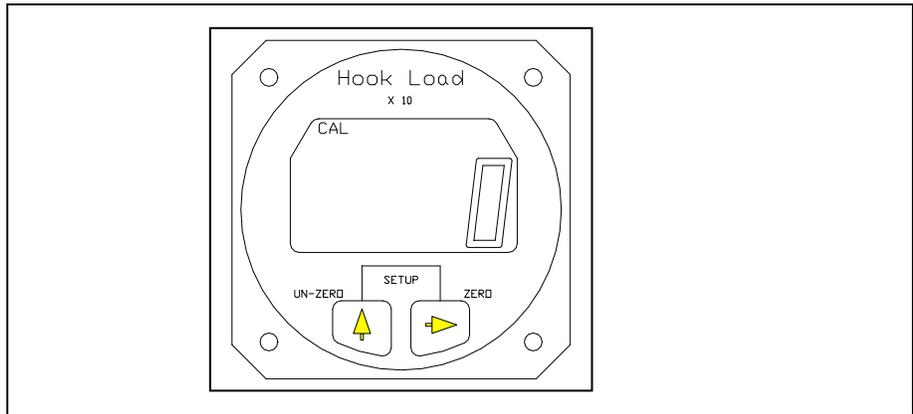


The Run Mode

The C-39 Indicator has two operating modes, Run and Setup. The Run Mode is used to display the cargo hook weight and the Setup Mode is used to setup or configure the Indicator to the helicopter and to the Load Cell. When powered up, the Indicator always comes to life in the Run Mode.

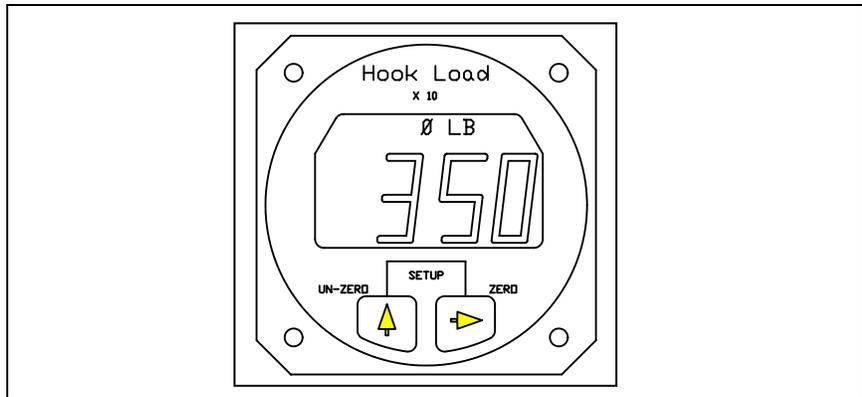
After the indicator is powered up, it will go through a self diagnostic routine. During this routine the display will display all of the digits and legends. If a problem is found during the routine an Error Code will be displayed. For an explanation of Error Codes see the section *Error Codes*. After the diagnostic routine the display should look like this:

Figure 3-2 After Diagnostic Routine



The illustration is of the Indicator in the Run Mode with no load on the hook. Note the LB legend displayed.

Figure 3-3 LB Legend Displayed

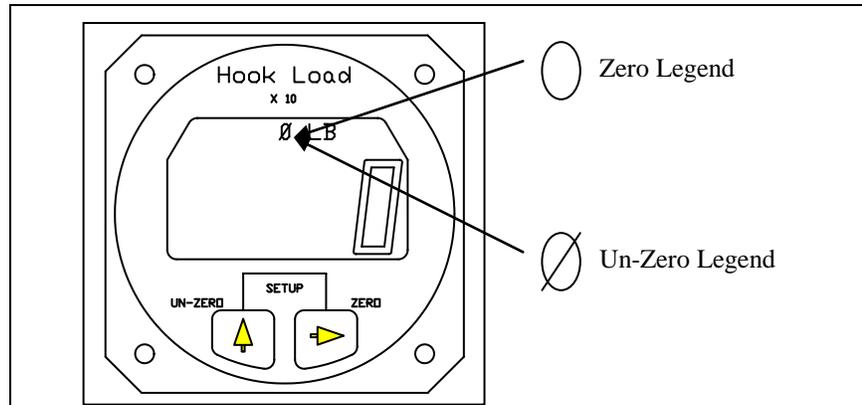


The illustration is a typical hook load reading. The display is 3,500 pounds, note the last digit is not displayed.

To Zero or Tare the Display

The zero feature is used to zero or tare the weight on the Cargo Hook that is not wanted, such as the weight of a cargo net or long line. The Right button is used to zero the Indicator reading. When the Right button is pressed the display is zeroed. The zero legend is turned on and the zeroed number is stored in memory. If the Right button is pressed again, before the Un-zero button is pressed, the display blinks in response to the button closure. Zero is only available in the Run Mode.

Figure 3-4 Zeroing the Display



To Un-Zero the Display

The Left button is used to add the zeroed value back into the current Indicator reading or Un-zero the display. When the Left button is pressed, the number previously zeroed is added to the current display and the Un-zero legend is turned on. If the Left button is again pressed before the zero button is pressed, the display blinks in response to the button closure. Un-Zero is only available in the Run Mode.

Error Codes

Error Codes are the result of difficulties discovered during the Indicator diagnostic tests. Diagnostic tests occur at power up and during the execution of certain routines. Listed below is a matrix of the Error Code displays, their meaning and possible corrective action. Pressing either button will usually bypass the error code, however, the displayed information may be suspect.

Table 3-1 Indicator Error Codes

DISPLAY	CAUSE	POSSIBLE CORRECTIVE ACTION
Err 1	A/D or D/A circuit failure	Potential short in the optional analog meter cable. Clear short and power cycle the Indicator by turning the power to the Indicator off for a few moments. If Error Code continues, return the Indicator to the factory.
Err 2	NV Ram failure	Power cycle the Indicator; if Error Code continues, return the Indicator to the factory.
Err 3	NV Ram write failure	Re-enter data, if Error Code continues, return the Indicator to the factory.
Err 4	NV Ram busy failure	Power cycle the Indicator, if Error Code continues return the Indicator to the factory.

The Setup Mode

The C-39 Indicator can be used with a wide range of helicopters and load cells. The Setup Mode on the Indicator matches the Indicator to the Load Cell and to the helicopter. This is done by entering data into the Indicator. Entered data includes the load cell Calibration Code, the units that the Indicator should read-out (pounds or kilograms), and several other items.

The Indicator has a group of Setup routines, arranged in menu form, that are used to configure the Indicator. Shown on the next page is a matrix of the Setup routines and a brief discussion of their function and how they are programmed. A complete discussion of each setup item is presented later in this section.

To enter the Setup Mode press both the Right and Left buttons at the same time while the Indicator is powered up and in the Run Mode. To exit the Setup Mode and return to the Run Mode, press both the buttons at the same time. If you are in a Setup routine and have started to change an entry, but you change your mind before completing the procedure, power cycle the Indicator to exit the Setup Mode and then go to the Run Mode without changing the item. The Indicator is power cycled by turning the Indicator power off for a few moments.

The Setup Mode, continued

Table 3-2 Indicator Setup Routines

MENU	FUNCTION	DISPLAY
Press the Left button to scroll through the menu	Press the Right button to view or change the menu item.	To return to the Run Mode press both the Right and Left buttons at the same time.
DAMP	<u>Dampening Level</u> , sets the pilots preference for display dampening.	Blinking display is previously entered Dampening Level. Select the desired dampening level by pressing the Left button.
CODE	<u>Calibration Code</u> , matches the Indicator to the Load Cell.	Display is previously entered CAL Code. The Code is changed by selecting the digit to be changed with the Right button. The selected digit will blink. Change the blinking digit by pressing the Left button.
0 in	<u>Installation ZERO</u> , matches the Indicator to the installed Load Cell and to the helicopter. After this procedure the display will be zero when no load is on the Cargo Hook.	Display is a combination of load on the Load Cell, and normal load cell zero offset. Remove all weight from the installed Load Cell except the Cargo Hook, and press any button to complete the procedure and return to the Run Mode.
LOAD	<u>Load</u> , is used to calibrate the system by lifting a known load.	No previous display is shown. Enter the known load using the Right button to select the digit to be changed and Left button to enter the number. Known load is entered "X 10" i.e.; 5000 kilograms is entered as 500. After the known load is entered, press both buttons at the same time and lift the known load. When the load is stabilized press either button. A new Calibration Code will be calculated and the known load will be displayed. This completes the procedure.
Scale	<u>Scale</u> , matches the analog output of the Indicator to an optional remote analog meter.	Display is previously entered number. To change the number use the Right button to select a digit, use the Left button to scroll the digit to the desired number. Entry is times 10.
LB KG	<u>Units</u> , selects the Indicator units (pounds or kilograms).	Display is previously selected unit. To change the unit, use the Left button.
XX - V	<u>Version</u> , is the revision level of the Indicator hardware and software.	Version is for information only, it cannot be changed.

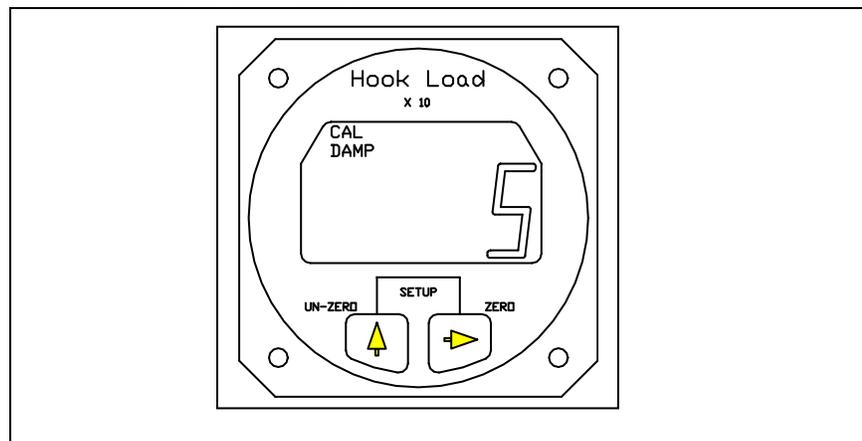
Indicator Dampening

The Damp or dampening routine allows the pilot to adjust the Indicator dampening level to his preference. The dampening routine is a program that stabilizes the Indicator reading. It offers a trade-off between Indicator responsiveness and stability. Ten dampening levels are available, from 0 through 9. At level 0 the display responds to the slightest change in weight. However, if the load bounced even slightly, the display digits would respond instantly, making the display look unstable. With a dampening level of 9, the display would be stable under the most turbulent conditions, however, it would take several seconds for the display to respond to a change in weight. The ideal dampening level will depend on the flying conditions. A mid range setting of 5 or 6 is usually adequate.

To Look at or Change the Dampening Level

With the Indicator powered up and in the Run Mode, press both buttons at the same time to go to Setup. Scroll through the menu, using the Left button, until the word DAMP is displayed. To look at or change the Dampening Level press the Right button. The display should look like this:

Figure 3-5 Changing Dampening Level



The CAL and the DAMP legend is turned on and the previously set dampening level is displayed. To return to Run without changing the current dampening level press both the Right and Left buttons at the same time. To change the dampening number, use the Left button to scroll the blinking digit to the desired number. After the selection has been made press both the Right and Left buttons at the same time to return to Run.

Indicator Calibration

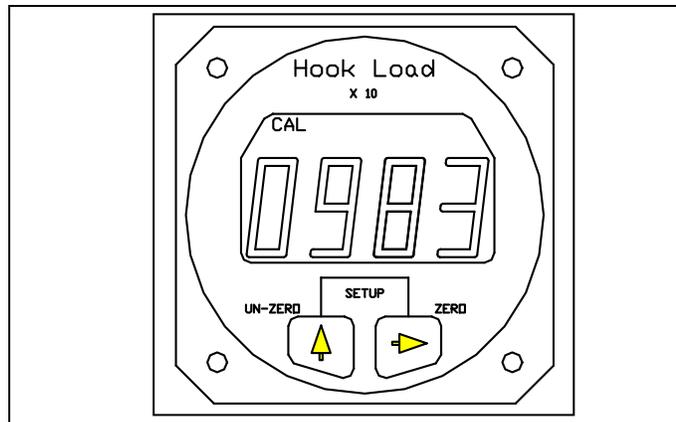
The Calibration Code, or CAL code, is a mandatory input. The Indicator will not accurately display the load without the correct Calibration Code. The Calibration Code scales the signal from the Load Cell.

If the C-39 Indicator was supplied as part of a Load Weigh System, the Calibration Code will have been entered into the Indicator by the factory, however, it should be confirmed. If the Indicator is to be mated to a different Load Cell, it must be calibrated before use. Calibration can be done by entering a known Calibration Code or by lifting a known load and having the Indicator calibrate itself. Both options are discussed below.

To Look at or Change the Calibration Code

With the Indicator powered up and in the Run Mode, press both buttons at the same time to go to Setup. Scroll through the menu until the word CODE is displayed, then press the Right button. The display should look like this:

Figure 3-6 Changing the CAL Code



The CAL legend is turned on and the previously entered or computed Calibration Code is displayed. To return to Run without changing the CAL Code, press both the Right and Left buttons at the same time. To change the Calibration Code, use the Right button to select the digit to be changed, then use the Left button to scroll the blinking digit to the desired number. When the Calibration Code has been entered, press both the Right and Left button at the same time to return to Run.

NOTE

Depending on the type of Load Cell, the Calibration code could be a 3 or 4 digit number. If the Calibration Code is a 3 digit number a leading zero (0) must be used. For example if a Load Cell had a CAL Code of 395 it would be entered as 0395.

If the load cell Calibration Code is not known or as a cross check, the Indicator can generate the Calibration Code. This is done by entering the weight of a known load into the Indicator LOAD routine and then lifting the load. See the section *Calibration by Lifting a Known Load*.

Installation Zero

Installation zero is a routine that matches the Indicator to the ***INSTALLED*** Load Cell. It adjusts the Indicator reading to compensate for the weight of the Cargo Hook on the Load Cell and whatever zero offset is built into the Load Cell. The Installation Zero procedure is not mandatory. If done the Indicator will read zero when the Un-Zero button is pressed and there is no weight on the Cargo Hook. If the Installation Zero is not done, the Indicator will show the weight of the Cargo Hook plus the value of the Load Cell zero offset.

To Run the Installation Zero Routine

With the Indicator powered up and in the Run Mode, press both buttons at the same time to go to Setup. Scroll through the menu until the symbol "0 in" is displayed, then press the Right button. The CAL legend will be turned on and the current weight on the Cargo Hook will be displayed and blinking. Remove any weight that is not to be zeroed out and press either button to complete the procedure and return to the Run Mode.

Calibration by Lifting a Known Weight

Calibration by lifting a known weight is a Setup routine that calculates the Calibration Code for the Load Cell attached to the Indicator. It is useful if the load cell Calibration Code is not known or as a cross check to the accuracy of a known Calibration Code. The procedure is done by entering the known weight into the Indicator and then lifting the weight. This procedure can be done in the shop or on the helicopter. The accuracy of the procedure is directly related to the weight of the known load. If for example the procedure was done with a 1,000 pound load that was assumed to weigh only 900 pounds, all subsequent lifts would be displayed 10% light.



Be sure to include the weight of everything between the Cargo Hook and the load, i.e. the cable, net, dirt, etc.

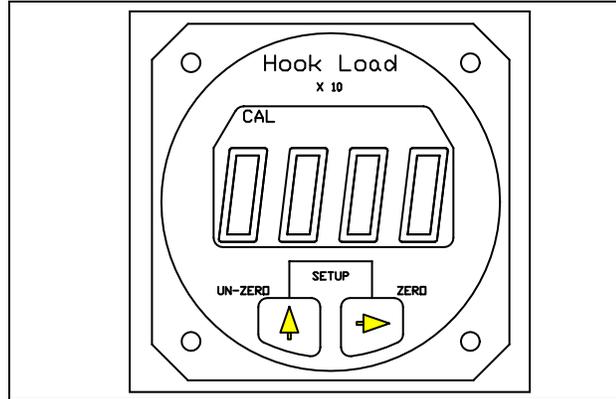
The closer the known load approaches the lifting capacity of the helicopter, the more accurate the calculated Calibration Code will be.

Calibration by Lifting a Known Weight, continued

To Run the Calibration by Lifting a Known Weight Routine

With the Indicator powered up and in the Run Mode, press both buttons at the same time to go to Setup. Scroll through the menu until the word LOAD is displayed, then press the Right button. The display should look like this:

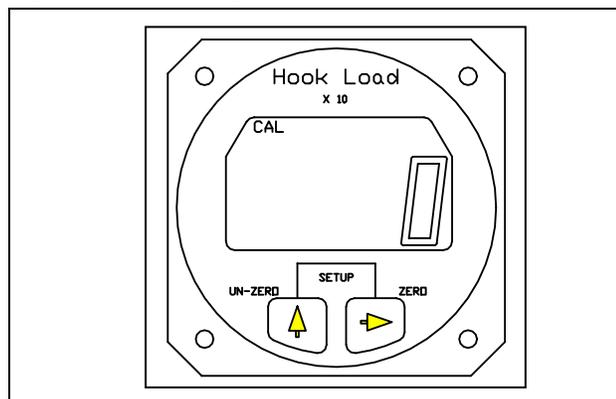
Figure 3-7 Running CAL Routine



The CAL legend is turned on and the first digit is blinking. The previous load is not displayed. At this point if you wish to return to the Run Mode without changing the Calibration Code, power cycle the Indicator. At this point it is not possible to return to the Run Mode without changing the Calibration Code by using the buttons on the Indicator front panel.

To proceed with the procedure, use the Right button to select the digit to be changed, then use the Left button to scroll the blinking digit to the desired number. Note that the known weight is entered "X 10"; a 1000 pound load is entered as 100. When the known load has been entered, press both the Right and Left button at the same time. The display will look like this:

Figure 3-8 Entering Load in CAL Routine



Calibration by Lifting a Known Weight, continued

The CAL legend and the digits will be blinking. Again, at this point if you wish to return to the Run Mode without changing the Calibration Code, power cycle the Indicator. It is not possible to return to the Run Mode by using the buttons on the Indicator front panel without changing the Calibration Code. If you wish to proceed, lift the known load and when it is stabilized, press either button to complete the procedure. The Indicator will display the load. This ends the procedure. The Indicator is now calibrated to the Load Cell. It is a good practice to go to the Code routine and record the new Calibration code for later reference.

Setting the Scale for a remote analog meter

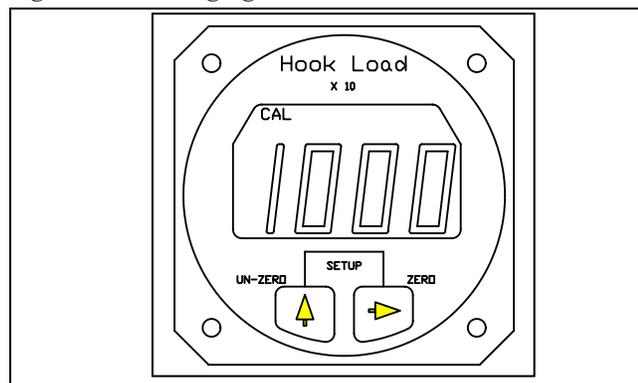
The Scale routine is used when a user supplied analog meter is connected to the Indicator. It is used to match or calibrate the analog meter to the Indicator. The Indicator outputs a 0 to 5 VDC analog signal which is proportional to the Load Cell load. The Scale number tells the Indicator at what point in pounds or kilograms it should reach the 5 VDC output. If for example a 5 volt analog meter is used and its full scale reading is 10,000 pounds, the number entered into the Indicator Scale routine would be 1000 (the number is entered X 10). This number tells the Indicator that it should output the proportional 0 to 5 VDC signal between zero pounds and 10,000 pounds.

The Scale number does not affect Onboard Slave Meters, P/N 210-106-00 or 210-180-00. This number only affects user supplied instruments connected to the analog out signal.

To Look at or Change the Scale

With the Indicator powered up and in the Run Mode, press both buttons at the same time to go to Setup. Scroll through the menu until the word SCALE is displayed, then press the Right button. The display should look like this:

Figure 3-9 Changing the Scale



To Look at or Change the Scale, continued

The CAL legend is turned on and the previously set Scale number is displayed. To return to Run without changing the Scale, press both the Right and Left button at the same time. To change the Scale number, use the Right button to select a digit to be changed, then use the Left button to scroll the blinking digit to the desired number. When the complete Scale number has been entered, press both the Right and Left button at the same time to return to Run.

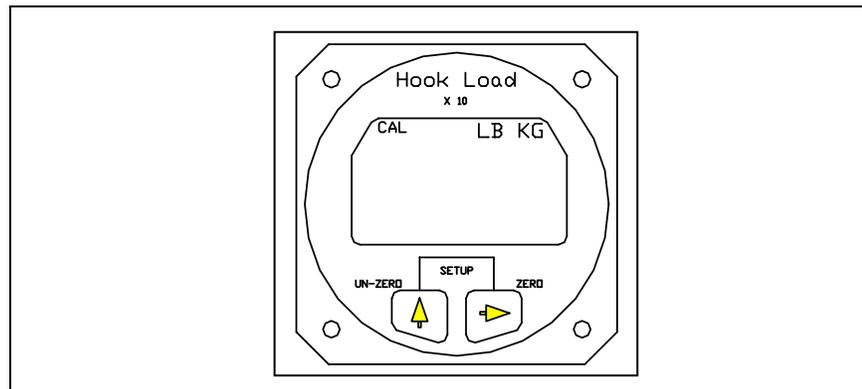
Select KG or LB Units

The units routine sets the display to read in pounds (LB) or kilograms (KG).

To look at or change the Units

With the Indicator powered up and in the Run Mode, press both buttons at the same time to go to Setup. Scroll through the menu until the word LB or KG is displayed, then press the Right button. The display should look like this:

Figure 3-10 Changing the Units



The CAL legend is turned on and the previously set unit is displayed. To return to Run without changing the units, press both the Right and Left button at the same time. To change the units press the Left button. When the selection has been made, press both the Right and Left button at the same time to return to Run.

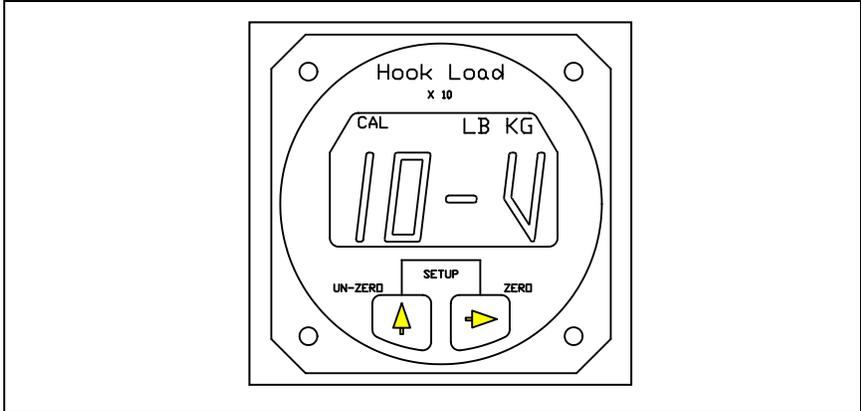
NOTE

The selected units are displayed when in the Run Mode.

Indicator Version

The Version routine displays the Indicator's hardware and software revision levels. Version is set at the factory and cannot be changed.

Figure 3-11 Looking at Indicator Version



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Section 4

Maintenance

Refer to Instructions for Continued Airworthiness document no. 123-026-00 for maintenance information for the Load Weigh System.

Instructions for Returning Equipment to the Factory

If an Onboard Systems product must be returned to the factory for any reason (including returns, service, repairs, overhaul, etc) obtain an RMA number before shipping your return.



An RMA number is required for all equipment returns.

- To obtain an RMA, please use one of the listed methods.
 - Contact Technical Support by phone or e-mail (Techhelp@OnboardSystems.com).
 - Generate an RMA number at our website: <http://www.onboardsystems.com/rma.php>
- After you have obtained the RMA number, please be sure to:
 - Package the component carefully to ensure safe transit.
 - Write the RMA number on the outside of the box or on the mailing label.
 - Include the RMA number and reason for the return on your purchase or work order.
 - Include your name, address, phone and fax number and email (as applicable).
 - Return the components freight, cartage, insurance and customs prepaid to:

Onboard Systems
13915 NW 3rd Court
Vancouver, Washington 98685
USA
Phone: 360-546-3072

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Section 5 Certification STC

United States of America
Department of Transportation—Federal Aviation Administration
Supplemental Type Certificate

Number SR01804SE

This certificate, issued to

**Onboard Systems
13915 NW 3rd Court
Vancouver, WA 98685**

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 27 of the Federal Aviation Regulations.

Original Product—Type Certificate Number: H9EU
Make: Eurocopter
Model: AS350B, AS350B1, AS350B2, AS350B3, AS350BA, and AS350D

Description of the Type Design Change: Fabrication of Onboard Systems Model 200-310-00 Load Weigh Kit in accordance with FAA-approved Onboard Systems Master Drawing List No. 155-116-00, Revision 0, dated December 13, 2006, or later FAA-approved revision. Installation of the 200-310-00 Load Weigh Kit in accordance with FAA-approved Onboard Systems Owner's Manual No. 120-126-00, Revision 0, dated June 29, 2006, or later FAA-approved revision. This modification must be inspected and maintained in accordance with section ATA 5 of the FAA-approved Onboard Systems Instructions for Continued Airworthiness, document no. 123-026-00, Revision 0, dated July 24, 2006, or later FAA-approved revision.

Limitations and Conditions: Approval of this change in type design applies only to those Eurocopter AS350 model rotorcraft listed above that are equipped with the Eurocopter 1400 kg Cargo Swing System as installed per Eurocopter Service Bulletin 25.00.62. This approval should not be extended to other rotorcraft of these models on which other previously approved modifications are incorporated unless it is determined by the installer that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that rotorcraft. Rotorcraft modified in accordance with this STC must be operated in accordance with an FAA-approved copy of Onboard Systems Rotorcraft Flight Manual Supplement (RFMS) 121-032-00, Revision 0, dated November 21, 2007, or later FAA-approved revision. A copy of this certificate, FAA-approved RFMS, Owner's Manual, and Maintenance Manual must be maintained as part of the permanent records of the modified rotorcraft.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: June 23, 2006
Date of issuance: December 5, 2007

Date reissued:
Date amended:



By direction of the Administrator

[Signature]
(Signature)

Acting Manager, Seattle Aircraft
Certification Office

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.

FAA FORM 8110-2(10-68)

Canadian Approval



Transport
Canada

Transports
Canada

Civil Aviation

Aviation Civile

Suite 620
800 Burrard Street
Vancouver, B.C.
V6Z 2J8

Your file Votre référence

Our file Notre référence
130S-GA-08-69
RDMIS 4149477
NAPA P-08-0191

May 29, 2008

Onboard Systems
13915 NW 3rd Court
Vancouver, WA 98685
USA

Attention: Mr. Mark Hanson

Subject: Acceptance of Foreign STC SR01804SE

Dear Sir:

This is in response to FAA letter dated April 22, 2008, requesting Transport Canada approval of the subject STC.

In accordance with our current policy associated with the review of foreign STCs, some STCs applicable to certain categories of aircraft may be accepted solely on the basis of their foreign certification, and do not require the issue of a corresponding certificate by Transport Canada. The subject STC falls within these criteria.

This STC will be entered in the national index of STCs that have been reviewed and accepted by Transport Canada for installation on Canadian-registered aeronautical products.

This letter confirms formal acceptance of the referenced STC by Transport Canada. Should you require additional information with regards to this matter or clarification please do not hesitate to contact the undersigned at (604) 666-5597.

Yours truly,

H. W. Wong
Senior Engineer, Aircraft Certification

for
Minister of Transport

c.c. Mr. Philip L. Forde
Acting Manager, Seattle ACO


Canada

1/1

EASA STC



SUPPLEMENTAL TYPE CERTIFICATE

10059395

This Supplemental Type Certificate is issued by EASA, acting in accordance with Regulation (EC) No. 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation and in accordance with Commission Regulation (EU) No. 748/2012 to:

ONBOARD SYSTEMS INTERNATIONAL

13915 NW 3RD COURT
VANCOUVER WA 98685
USA

and certifies that the change in the type design for the product listed below with the limitations and conditions specified meets the applicable Type Certification Basis and environmental protection requirements when operated within the conditions and limitations specified below:

Original Type Certificate Number: EASA.R.008

Type Certificate Holder: AIRBUS HELICOPTERS

Type: AS 350/EC 130

Model: AS 350 B, AS 350 B1, AS 350 B2
AS 350 B3, AS 350 BA, AS 350 D

Original STC Number: FAA STC SR01804SE

Description of Design Change:

Installation of the 200-310-00 Load Weigh Kit.

EASA Certification Basis:

The Certification Basis (CB) for the original product remains applicable to this certificate/ approval. The requirements for environmental protection and the associated certified noise and/ or emissions levels of the original product are unchanged and remain applicable to this certificate/ approval.

See Continuation Sheet(s)

For the European Aviation Safety Agency

Date of Issue: 21 September 2016


Mathieu HENRY
Heavy Rotorcraft Section
Manager

10045811
SUPPLEMENTAL TYPE CERTIFICATE - 10059395 - ONBOARD SYSTEMS INTERNATIONAL - 302945



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EASA STC continued



Associated Technical Documentation:

Onboard Systems Master Drawing List No. 155-116-00, Revision 0, dated December 13, 2006, or later FAA-approved revision.

Onboard Systems Owner's Manual No. 120-126-00, Revision 0, dated June 29, 2006, or later FAA-approved revision.

Section ATA 5 of Onboard Systems Instruction for Continued Airworthiness, document no. 123-026-00, Revision 0, dated July 24, 2006, or later FAA-approved revision.

Onboard Systems Rotorcraft Flight Manual Supplement (RFMS) 121-032-00, Revision 0, dated November 21, 2007, or later FAA-approved revision.

Limitations/Conditions:

Approval of this change in type design applies only to those Airbus Helicopters AS350 model rotorcraft listed above that are equipped with the Airbus Helicopters 1400 kg Cargo Swing System as installed per Eurocopter Service Bulletin 25.00.62.

Prior to installation of this design change it must be determined that the interrelationship between this design change and any other previously installed design change and/ or repair will introduce no adverse effect upon the airworthiness of the product.

- End -

10045811
SUPPLEMENTAL TYPE CERTIFICATE - 10059395 - ONBOARD SYSTEMS INTERNATIONAL - 302945



An Agency of the European Union

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