Please check web site at www.onboardsystems.com for the latest revision of this manual

E-53 & E-54
Load Weigh Systems
for the
Airbus Helicopters
Puma & Super Puma Helicopters

Owner's Manual

Owner's Manual Number 120-008-00
Revision 13
12/07/23

13915 NW 3rd Court Vancouver Washington 98685 USA
Phone: 360-546-3072 Fax: 360-546-3073 Toll Free: 800-275-0883
www.OnboardSystems.com

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RECORD OF REVISIONS

Revision	*Date*	*Page(s)*	*Reason for Revision*
6	9/17/02	Title, 4-3	Factory address change.
7	04/28/04	4-1, 4-2	Added procedure for replacing bushings
8	09/06/06	Section 2 1-2, 1-3, 1-4, 4-1, 4-2	Updated manual to allow for 270-045-01 wire harness installation. Updated Bill of Materials Added kg equivalents to pounds. Changed daily inspection to daily check and updated part numbers and maintenance information in Table 4-1.
9	10/09/07	TOC, Section 1, 2-5, 3-8, 3-9 & 3-12	Added explanation of warnings, cautions and notes to Section 1. Updated warnings, cautions and notes throughout.
10	3/2/10	TOC, Section 2 & 4-1	Updated manual to reflect new load weigh harness configuration. Changed overhaul frequency criteria.
11	10/09/17	Section 1 and 3	Added AS332C1 and AS332L1 model, updated maintenance section. Removed load weigh instructions and referred to Owner's Manual 120-039-00. General updates throughout.
12	07/31/19	All	Added C-40 indicator.
13	12/07/23	1-2, 2-1	Replaced C-40 Indicator P/N 210-293-00 with 210-293-01 in new production kits.

Register Your Products for Automatic Notifications

Onboard Systems offers a free notification service via fax or email for product alerts and documentation updates. By registering your Onboard Systems products at our website, we will be able to contact you if a service bulletin is issued, or if the documentation is updated.

You can choose to receive notices on an immediate, weekly, or monthly schedule via fax, email or both methods. There is no charge for this service. Please visit our website at www.onboardsystems.com/notify.php to get started.

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CONTENTS

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Section 1
General Information

Introduction

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. The Load Weigh System consists of three components, the cockpit mounted Indicator, the Internal Harness and the Load Cell.

Load weigh system P/N 200-010-00 (E-53 model) is approved for the SA330J (Puma) helicopter and system P/N 200-012-00 (E-54 model) is approved for the AS332C, AS332C1, AS332L, and AS332L1 (Super Puma) helicopters.

Safety Labels

The following definitions apply to safety labels used in this manual.

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

Draws the reader's attention to important or unusual information not directly related to safety.

Used to address practices not related to personal injury.

Specifications

Load cell specifications are listed in the table below. Refer to Owner's Manual 120-039-00 for specifications for the C-39 indicator and Owner's Manual 120-152-00 for the C-40 indicator.

Table 1.1 Load Cell Specifications

SPECIFICATIONS	LOAD CELL
Weight	6 lbs (2.7 kg)
Max. Load Rating	10,000 lbs (4,536 kg)
Accuracy Over Operating Temperature Range	0.5% ± 1 digit
Operating Temperature Range	+70°C to –45°C
Storage Temperature Range	+80°C to –50°C

Bill Of Materials

The following items are included with P/Ns 200-010-00 and 200-012-00.

Table 1.2 Bill of Materials

Part No.	Description	Qty in 200-010-00	Qty in 200-012-00
210-293-01*	C-40 Indicator	1	1
210-025-00	E-53 Puma Load Cell Assembly	1	-
210-026-00	E-54 Super Puma Load Cell Assembly	-	1
270-240-00	Harness Assembly	1	1
400-048-00**	Power Switch	-	-
215-010-00	Placard	2	2
215-012-00**	Placard	-	-
512-001-00	Ty-Wrap	15	15
511-211-00	Screw	4	4
120-008-00	Owner's Manual	1	1
120-152-00	Owner's Manual, C-40 Indicator	1	1
121-067-00	RFMS	1	1

**The C-40 Indicator (P/N 210-293-01) supersedes the C-39 Indicator (P/N 210-095-00) and is supplied with Load Weigh Internal Harness P/N 270-240-00 which supersedes P/N 270-045-01 used with the C-39.*

C-40 Indicator P/N 210-293-01 replaces P/N 210-293-00 in new productions kits as of November 2023, these are interchangeable with the exception of software compatibility. Refer to C-40 Owner's Manual 120-152-00 for specific software versions.

***Previously included with kits with C-39 Indicator. Not included with kits with C-40 Indicator.*

NOTICE

The C-40 Indicator is a direct replacement for the C-39 Indicator if optional items of Figure 2.2.1 (analog meter, C-30 data recorder, etc.) are not connected to the C-39 (see Section 2.2).

Section 2
Installation Instructions

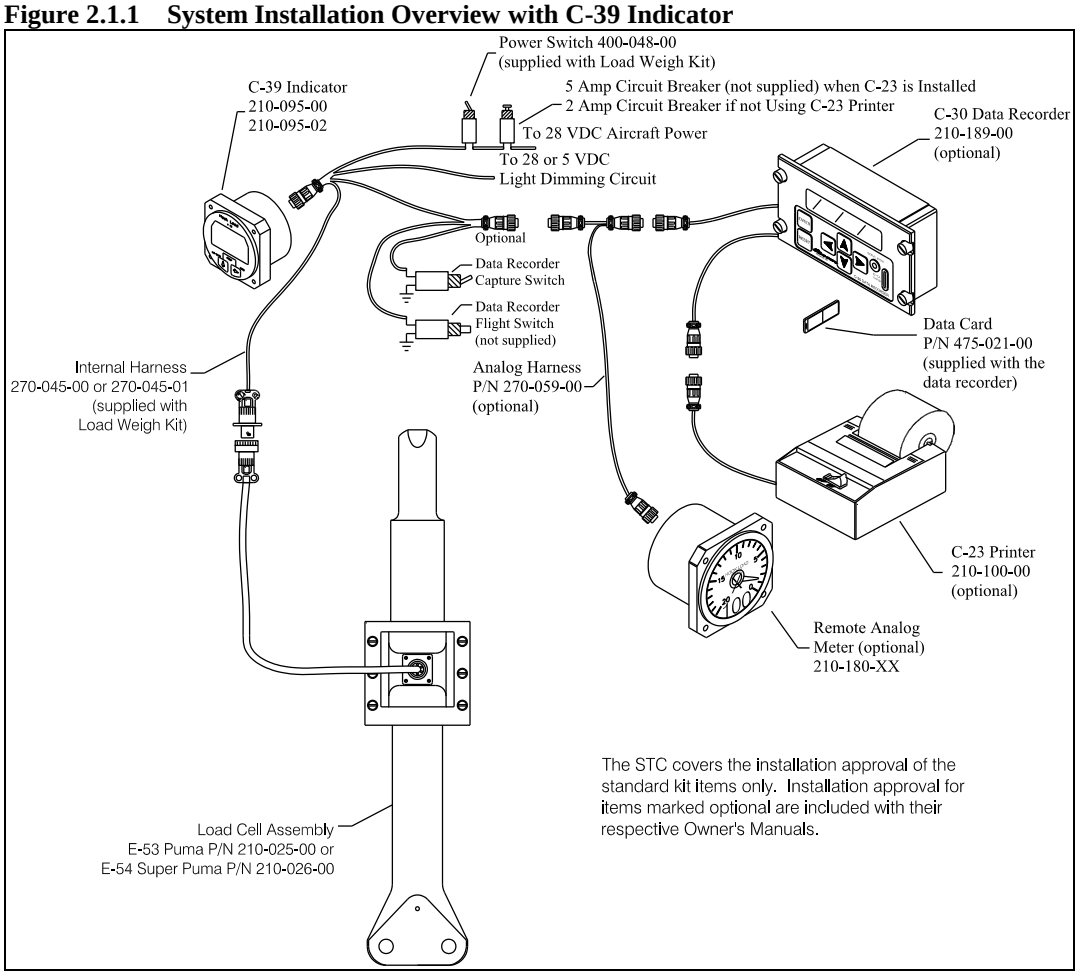
This section describes how to install the components of the Load Weigh System. These procedures are provided for the benefit of experienced aircraft maintenance facilities capable of carrying out the procedures. They must not be attempted by those lacking the necessary expertise.

2.1 C-39 Load Weigh System Installation

This section describes how to install the components of the C-39 Load Weigh System, the C-39 load weigh indicator is identified by P/N 210-095-00. If installing the next generation C-40 indicator (P/N 210-293-00 or 210-293-01) load weigh system skip to section 2.2.

Figure 2.1.1 is an overview of the Load Weigh System installation with the C-39 Indicator. The optional items shown are not compatible with the C-40 indicator.

Figure 2.1.1 System Installation Overview with C-39 Indicator



2.1 C-39 Load Weigh System Installation continued

2.1.1 Internal Harness Installation

The Internal Harness (P/N 270-045-01) is made up of four cables terminated to a connector. This connector is plugged into the back of the Indicator. One of the cables is marked "LOAD CELL" and is fitted with a connector. This cable is connected to the load cell. Another cable is marked "POWER" and is connected to aircraft power. Another cable is marked "LIGHT", refer to section 2.1.3. The last cable is marked "DATA" and can be connected to the optional Data Recorder or Analog Slave Meter. These optional items are not included under this STC.

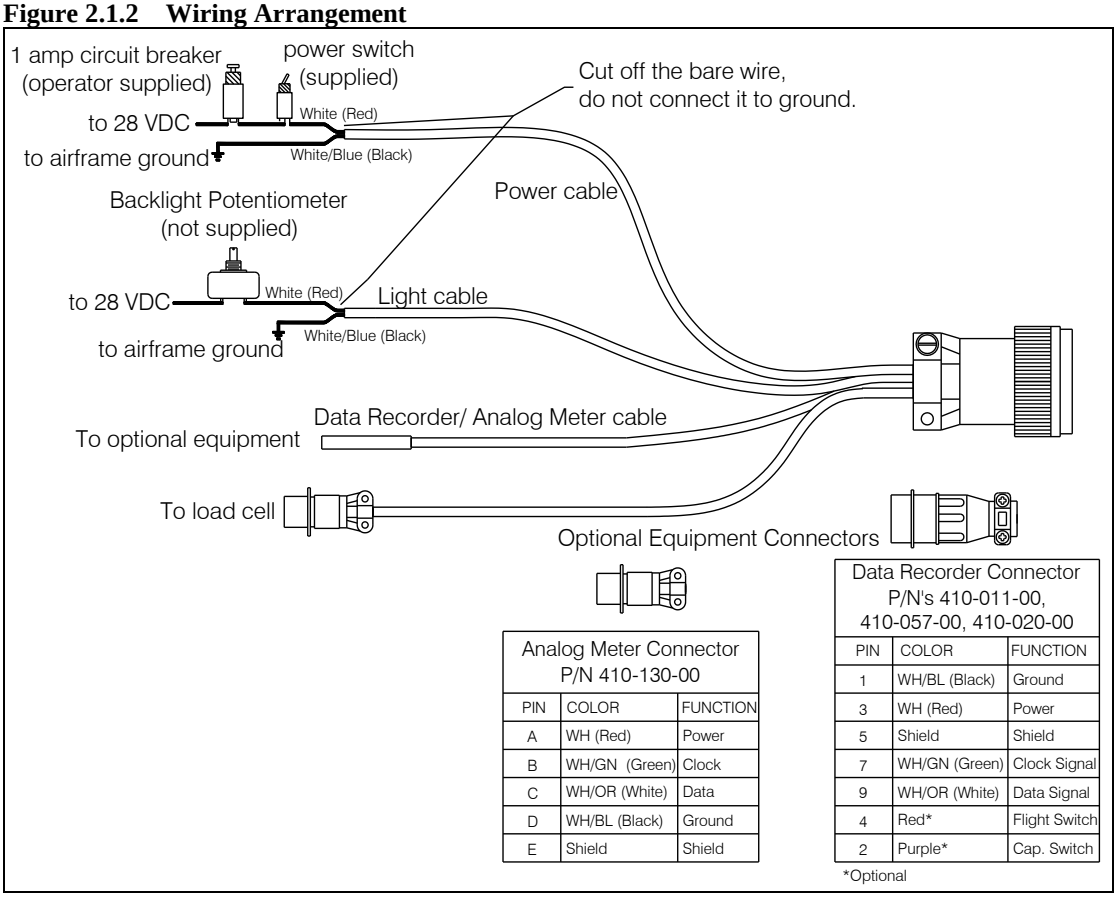
NOTICE

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

Route the load cell cable in the same locations as in the type certificated load weigh system installation (refer to Airbus installation instructions), with the existing overhead electrical harness, to the load cell. Secure the load cell cable to the existing wiring harness with the supplied ty-raps.

Secure the cables clear of flight control rods and hydraulic lines.

Figure 2.1.2 Wiring Arrangement



Analog Meter Connector
P/N 410-130-00

PIN	COLOR	FUNCTION
A	WH (Red)	Power
B	WH/GN (Green)	Clock
C	WH/OR (White)	Data
D	WH/BL (Black)	Ground
E	Shield	Shield

Data Recorder Connector
P/N's 410-011-00,
410-057-00, 410-020-00

PIN	COLOR	FUNCTION
1	WH/BL (Black)	Ground
3	WH (Red)	Power
5	Shield	Shield
7	WH/GN (Green)	Clock Signal
9	WH/OR (White)	Data Signal
4	Red*	Flight Switch
2	Purple*	Cap. Switch

*Optional

2.1 C-39 Load Weigh System Installation continued

2.1.2 Indicator Installation

The Indicator should be mounted in a position that is convenient, accessible and visible to the pilot. It can be mounted in a standard 2¼" instrument hole. Connect the Indicator to the Internal Harness, refer to *Internal Harness Installation*.

2.1.3 Indicator Internal Back Light

The P/N 210-095-00 Indicator is equipped with an Internal Back Lighting System that can be connected to the aircraft 28 VDC light dimming circuit. Use a 22 gauge, twisted pair, shielded cable to connect the aircraft dimming circuit to the Internal Harness. Connect the cable shield wire to airframe ground at the light dimmer end of the cable **ONLY**.

2.1.4 Indicator Hook-Open Warning

The Indicator (P/N 210-095-00) is equipped with a Hook-Open Warning feature that can be connected to a cargo hook equipped with a hook open switch. Depending on the capabilities of the cargo hook switch, the Indicator will flash "HOOK OPEN" when the cargo hook load beam is open. The cargo hook switch must be normally open when the cargo hook load beam is in the closed position. When the load beam is open, one side of the switch must be grounded and the other side of the switch is to be connected to the Indicator. Use a 22 gauge, shielded wire to connect the cargo hook switch to the Indicator. Disassemble the Indicator mating connector and carefully solder the wire, from the cargo hook switch, to pin H. Connect the cable shield wire to airframe ground as close to the cargo hook as possible, at the cargo hook end of the cable **ONLY**.

2.1.5 Remote Analog Meter

The Indicator is equipped with an Analog drive circuit that can be connected to a remote analog meter. Use a 22 gauge, twisted pair, shielded cable to connect the Remote Analog Meter to the Indicator. Disassemble the Indicator mating connector and carefully solder the positive wire, from the analog meter, to pin G and the common wire to pin F. Connect the cable shield wire to airframe ground as close to the Analog Meter as possible, at the Analog Meter end of the cable **ONLY**.

The Indicator can be connected to Onboard Systems' Analog Slave Meter, P/N 210-180-00, through the "DATA" cable. This meter gives solid weight indications without needle bounce. The Analog Slave Meter may be mounted in any convenient location in a standard 3" instrument hole. Attach connector, P/N 410-130-00, to data line per pin out in Figure 2-2 to connect the Analog Slave Meter to the Internal Harness "DATA" cable. If a data connector is present on the data line use cable, P/N 270-059-00, to connect to Analog Slave Meter.

2.1 C-39 Load Weigh System Installation continued

2.1.6 Electrical Connections

Install the supplied power switch, P/N 400-048-00. The "POWER" cable on the Internal Harness is supplied extra long, cut off the excess cable and use as needed to connect the switch and circuit breaker. Connect the "POWER" White (red, if harness 270-045-00 is installed) wire to one side of the power switch, connect another piece of suitable wire to the other side of the switch and then to an available 1 or 2 amp circuit breaker as illustrated in Figure 2.1.2. Connect the circuit breaker to the 24 VDC bus. Connect the White/Blue (black, if harness 270-045-00 is installed) wire to the ground bus. The bare wire should be cut off as it is not needed at this end of the cable. Use a minimum of 22 gauge wire to make all connections. Secure the connections and protect from corrosion.

Install the placard 215-010-00 "ELECTRONIC WEIGHING SYSTEM" next to the power switch and circuit breaker. Install the placard 215-012-00 "TURN THE WEIGHING SYSTEM OFF WHEN NAVIGATION EQUIPMENT IN USE" "NO AIRCRAFT OPERATION SHOULD BE PREDICATED ON THE READING OF THE ONBOARD WEIGHING SYSTEM" next to the Indicator.

NOTICE

If the C-23 Printer is being utilized with the C-30 Data Recorder, a 5 amp circuit breaker should be used.

2.2 C-40 Load Weigh System Installation

The C-40 Indicator is directly interchangeable with the C-39 Indicator (without changing the internal harness) except it does not support the optional components (Analog Meter, C-30 Data Recorder) shown in Figure 2.1.1 (the functions performed by the C-30 data recorder will be integrated into the C-40 Indicator with a future software update).

The internal harness provided with new C-40 Indicator kits is the same as the C-39 internal harness except it does not include the data line but does include an additional wire for TEDS data which will provide for future capability to automatically recognize the load cell's calibration code.

NOTICE

If installing the C-40 indicator as a replacement for the C-39 indicator, the internal harness does not need to be replaced.

2.2.1 C-40 Indicator Installation

The C-40 Indicator is designed to be mounted in a standard 2¼" instrument hole and should be located in a position that is convenient, accessible and visible to the pilot. Another consideration for its mounting location is access to the USB port on the back, this USB port is intended for the firmware updates.

Secure the C-40 Indicator in its mounting location with the four screws (P/N 511-211-00) provided.

2.2.2 C-40 Internal Harness Installation

Route all wires using the following general guidance.

- Pick up existing wire runs by opening existing cable clamps nylon ties alone may not be used for primary support.
- New wire runs should be supported with MS21919WDG loop clamps.
- The distance between supports should not exceed 21 inches.
- The minimum radius of bends in wire groups or bundles must not be less than 10 times the outside diameter of the largest wire or cable.
- Inspect and verify that the wire harness may not be manually deflected into a structure with a bend radius less than .125".

Connect the larger of the connectors on the load weigh harness (P/N 270-240-00) to the back of the C-40 indicator.

Route the LOAD CELL wire in the same locations as in the type certificated load weigh system installation (refer to Airbus installation instructions), with the existing overhead electrical harness, to the load cell. Secure the load cell cable to the existing wiring harness with the supplied ty-raps.

2.2.2 C-40 Internal Harness Installation continued

If it is necessary to remove the load cell connector to facilitate routing, re-connect the wires referring to the schematic in Figure 2.2.1.

Route wire labeled POWER of the harness to the circuit breaker panel and install a 1 or 2 amp circuit breaker (not supplied) and connect this wire to it. Apply the supplied placard P/N 215-010-00 adjacent to the circuit breaker.

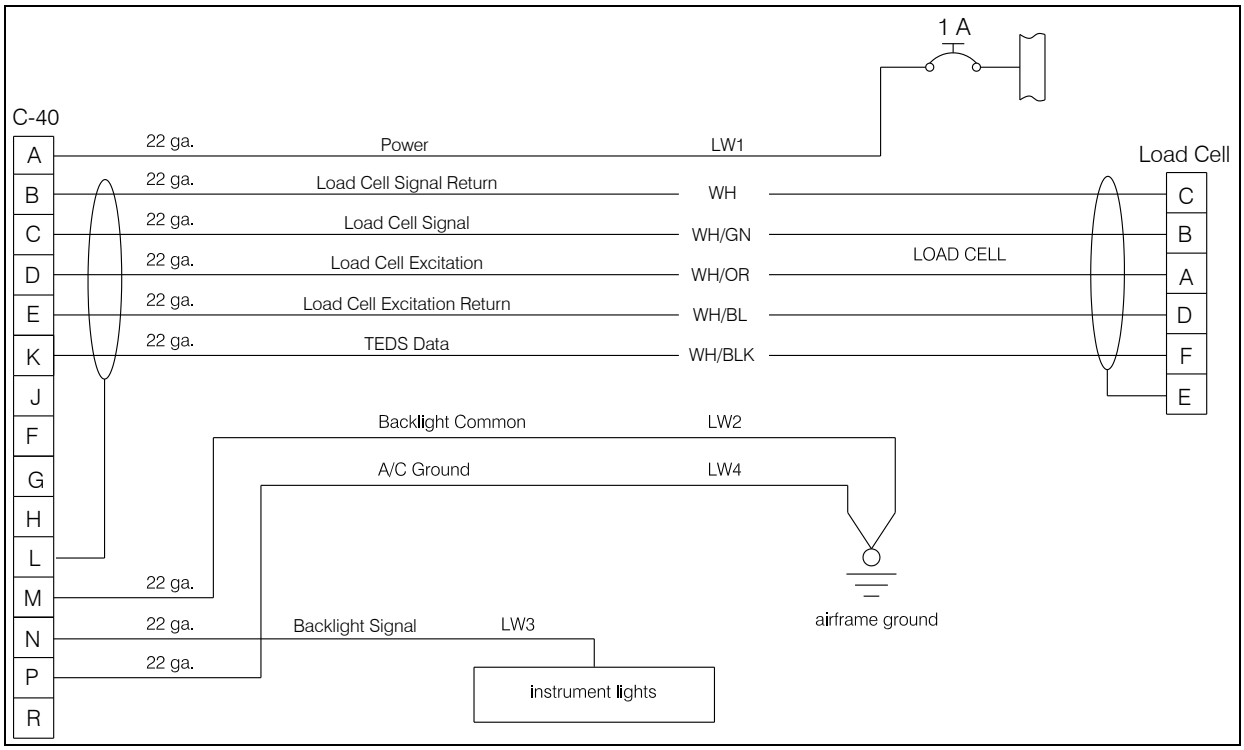
Wires BACKLIGHT SIG and BACKLIGHT COM are for the C-40 Indicator's backlight control voltage. Connect wire BACKLIGHT SIG to the instrument panel lighting circuit and wire BACKLIGHT COM to aircraft ground.

NOTICE

The Indicator does function normally without the Backlight Control Voltage wired, but will just not dim with other instruments. Full brightness of the Indicator is overridden by the aircraft dimming control voltage (if connected).

Connect wire A/C GROUND to a suitable aircraft ground.

Figure 2.2.1 C-40 Internal Harness Schematic



2.3 Load Cell Installation

2.3.1 E-53 Puma Load Cell Installation

Install the P/N 210-025-00 load cell in place of the 53-40200-19 load cell using the hardware removed. The load cell electrical connector should point to the left. Use a general purpose grease (such as MIL-PRF-23827) on the bolts and torque to specifications.

Swing the hook assembly to the full extremes to verify that it does not self-trip.

2.3.2 E-54 Super Puma Load Cell Installation

Install the P/N 210-026-00 load cell assembly in place of the D00455-1 or the 704A41-818-002 tube using the hardware removed. Use a general purpose grease (such as MIL-PRF-23827) on the bolts and torque to specifications.

Swing the hook assembly to the full extremes to verify that it does not self-trip.

2.4 Installation Check-Out

For the C-39 Indicator:

- 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.

NOTICE

Refer to Owner's Manual 120-039-00 for setup instructions including changing the units, zeroing the display, changing the dampening level, etc. and operation instructions.

For the C-40 Indicator:

- Power on the Load Weigh System. On startup the C-40 Indicator will display an information screen while performing a brief self-diagnostic routine and then display the load screen. Set the Installation Zero for the installation per the instructions contained in C-40 Indicator's Owner's Manual 120-152-00.

- In the Settings menu adjust units (lb or kg), brightness of the display, maximum load, and other settings as preferred (refer to the C-40 Indicator Owner's Manual 120-152-00 for detailed instructions). With the C-40 Indicator one setting that must be set properly to function is the backlight voltage. If the wire for the backlight was connected the backlight voltage must be set to the aircraft circuit voltage (5 VDC or 28 VDC).

Perform an EMI ground test per AC 43.13-lb section 11-107. For equipment that can only be checked in flight an EMI flight test may be required.

NOTICE

The load cell is of a class of equipment not known to have a high potential for interference. This class of equipment does not require special EMI installation testing (i.e. FADEC) as required in paragraphs 7 and 8 of FAA policy memorandum ASW-2001-01.

Ensure that the cargo hook is free to move to its full extremes.

Ensure that all electrical cables are secured clear of flight control rods and hydraulic lines.

2.5 Weights

ITEM	WEIGHT
Indicator	0.5 lbs (0.23 kgs)
Internal Harness	1.0 lbs (0.45 kgs)
Load Cell	6 lbs (2.7 kgs)
Total	**7.5 lbs (3.4 kgs)**

2.6 Paper Work

Insert the Flight Manual Supplement into the basic flight manual. 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.

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Section 3
Maintenance

The following 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. It is recommended that only minor repairs be attempted by anyone other than the factory.

Inspection

The scheduled inspection/overhaul intervals noted below are maximums and are not to be exceeded. If the load weigh system is subjected to unusual circumstances, extreme environmental conditions, etc., it is the responsibility of the operator to perform the inspections more frequently to ensure proper operation.

Annually or 100 hours of external load operations, whichever comes first, inspect the load weigh system per the following instructions (see Figure 3.1 for part identification and Table 3.1 for inspection criteria).

*Hours of external load operations should be interpreted to be **(1)** anything is attached to the primary cargo hook (whether or not a useful load is being transported) and **(2)** the aircraft is flying. If these conditions are **NOT** met, time does **NOT** need to be tracked.*

1. Move the load cell and the cargo hook throughout their full ranges of motion and observe the load cell electrical harness to ensure that it has enough slack. The harness must not be the stops that prevent the load cell or cargo hook from moving freely in all directions.
2. Visually inspect the electrical harness connector and strain relief at the load cell for damage and security.
3. Visually inspect the external load cell electrical harness for damage and chafing.
4. Visually inspect the load cell covers for corrosion, damage and security.
5. Visually inspect the load cell link for corrosion, damage and cracks.

Inspection continued

The overhaul interval for the Load Weigh System shall be in accordance with the guidelines below.

Time Between Overhaul (TBO): 1000 hours of external load operations or 5 years, whichever comes first.

At the overhaul interval, in addition to the items listed for the annual/100 hour inspection, perform the following:

1. Return the Load Cell Assembly (P/N 210-025-00 or 210-026-00) to the factory for inspection and calibration. The factory will inspect the condition of the load cell and perform acceptance test procedures including calibration and zero balance, repairing as necessary.
2. Inspect internal electrical harness from the load weigh indicator to the load cell for general condition, security of attachment, and chafing along the length of wire runs.
3. Inspect bushings for corrosion and wear (see table 3.1 for wear limits).

Inspection continued

Figure 3.1 Load Cell Assembly (P/N 210-026-00 shown)

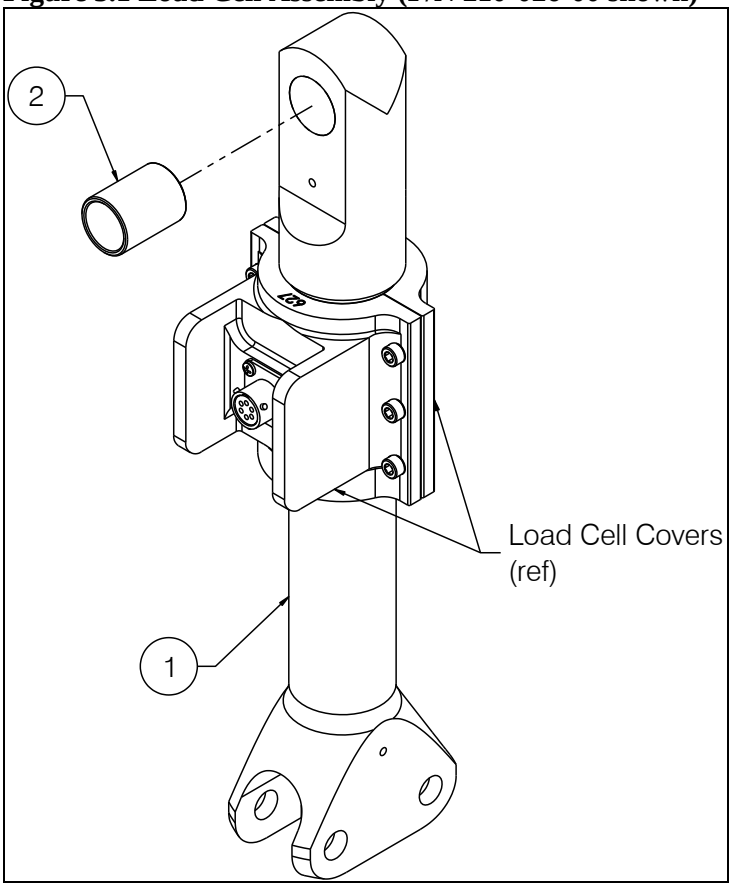

Table 3.1 Inspection Criteria

Item	Part	Inspect for:	Repair
1	Load Cell Assembly P/N 210-025-00 (Puma) P/N 210-026-00 (Super Puma)	Dents, nicks, cracks, gouges, corrosion or scratches in the load cell link.	Repair dents, gouges, nicks, scratches and corrosion if less than .030" deep, blend out at a ratio of 20:1, length to depth, replace assembly if otherwise damaged. For P/N 210-025-00 (Cad-plated) touch up load link with zinc chromate primer. For P/N 210-026-00, load link is 17-4 stainless steel, no finish touch-up required.
		Dents, nicks, cracks, gouges, corrosion or scratches in the covers.	Repair dents, gouges, nicks, scratches and corrosion if less than .060" deep, blend out at a ratio of 20:1, length to depth. Touch up with Alodine and zinc chromate primer.
2	Bushing P/N 290-082-00 (included with P/N 210-025-00 only)	Wear on inside diameter.	Replace bushing if inside diameter exceeds 0.602 in. (15.29 mm). Install bushing with wet zinc chromate primer (TTP1757B-1CY or equivalent) applied to outside diameter.
3	Bushing P/N 290-083-01 (included with P/N 210-026-00 only)	Wear on inside diameter.	Replace bushing if inside diameter exceeds 0.801 in. (20.34 mm). Install bushing with wet zinc chromate primer (TTP1757B-1CY or equivalent) applied to outside diameter.

Trouble Shooting

The following table includes trouble shooting information for the C-39 model indicator. Refer to Owner's Manual 120-152-00 for trouble shooting of the C-40 model.

Table 3.2 Trouble Shooting – C-39 Indicator

DIFFICULTY	PROBABLE CAUSE	CORRECTIVE ACTION
Circuit breaker opens when the circuit to Load Weigh System is energized.	Short in the system, faulty circuit breaker or switch.	Repair or replace defective wiring, circuit breaker and switch.
Load Weigh Indicator does not light up.	Faulty wiring, circuit breaker or switch.	Check the power switch, circuit breaker and wiring. If this doesn't help, return the unit to the factory.
Where Am I?		Turn the Indicator power off for a few moments. When it comes to life it will be in the Run mode.
Displayed load is incorrect.	Incorrect Calibration Code.	Insure the correct Calibration Code has been entered.
Displayed load is not stable.	Dampening level is too small.	Adjust the Dampening level to a larger number.
Displayed load takes too long to change the reading when the load is changed.	Dampening level is too large.	Adjust the Dampening level to a smaller number.
Do not recognize the displayed numbers on the Indicator.	NV Ram failure, A/D or D/A circuit failure.	Refer to *Error Codes* in Owner's Manual 120-039-00.
Load Weigh Indicator does not change with changing hook loads.	Defective load cell or damaged internal harness.	Check for damaged internal harness, replace load cell.

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.

NOTICE

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 e-mail (as applicable).
  - Return the components freight, cartage, insurance and customs prepaid to:

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

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Section 4
Certification
FAA STC

United States of America
Department of Transportation - Federal Aviation Administration

Supplemental Type Certificate

Number **SH4904NM**

This certificate, issued to **Onboard Systems International**
13915 NW 3rd Court
Vancouver, WA 98685

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

Original Product—Type Certificate Number: H4EU
Make: AIRBUS HELICOPTERS
Model: SA330J, AS332C, AS332C1, AS332L
AS332L1

Description of the Type Design Change: Installation of Onboard Systems International Load Weigh Kits in accordance with the Master Drawing List (MDL) No. 155-002-00, Revision 19, dated October 9, 2017, or later Federal Aviation Administration (FAA) approved revision.

Limitations and Conditions: 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. Approval of this change in type design applies to only those SA330J model rotorcraft, which were previously equipped with an Airbus Helicopters link, P/N 53-40200-19 and cargo hook P/N S1509AP-SE; and models AS332C, AS332C1, AS332L, and AS332L1 model rotorcraft, which were previously equipped with an Airbus Helicopters tube, P/N D00455-1 or 704A41-818-002 and cargo sling, P/N S109-3, only. This modification must be maintained in accordance with Owner's Manual 120-008-00, Revision 11, dated October 9, 2017, or later FAA-accepted revision. Operated in accordance with Rotorcraft Flight Manual Supplement (RFMS) 121-067-00, Revision 0, dated May 14, 2018, or later FAA-approved revision. A copy of this certificate, the RFMS, and the Owner's Manual must be maintained as part of the permanent records of the modified rotorcraft.

If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

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: September 15, 1989 *Date reissued:*

Date of issuance: March 6, 1990 *Date amended:* 4/15/91; 3/3/93; 6/6/18

By direction of the Administrator

(Signature)

Manager, Seattle ACO Branch
(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) PAGE 1 OF 2 PAGES

Canadian STC

Transport Canada Transports Canada

Department of Transport

Supplemental Type Certificate

This approval is issued to:

Onboard Systems
11212 NW St. Helens Road
Portland, OR
USA 97231

Number: SH99-022

Issue No.: 1
Approval Date: March 21, 1999
Issue Date: March 21, 1999

Responsible Office: Pacific

Aircraft/Engine Type or Model: Aerospatiale SA330J, AS332C and AS332L

Canadian Type Certificate or Equivalent: H-78

Description of Type Design Change: **Installation of Onboard Systems Model E-53 Cargo Hook Load Cell System per FAA STC SH4904NM**

Installation/Operating Data, Required Equipment and Limitations:

Fabrication of Onboard Systems Model E-53 cargo hook load cell system or P/N 210-059-00 or 210-060-00 load cell indicator replacement options (SA330J) and E-54 cargo hook load cell system (AS332C and AS332L) in accordance with FAA approved Onboard Systems Master Drawing List No. 155-002-00, Revision 3, dated October 10, 1992 * ; and, **Installation** of these systems in accordance with FAA approved Onboard Systems Owner's Manual No. 120-008-00, Revision 3, dated September 10, 1992 * . **Inspect** this cargo hook load cell system in accordance with Section 5 of Onboard Systems Owner's Manual No. 120-008-00, dated September 10, 1992 *.

Basis of Certification as defined in the applicable Type Certificate Data Sheets.

Limitations :
This STC applies to Aerospatiale SA330J rotorcraft which is equipped with an Aerospatiale link, P/N 53-40200-19 and cargo hook P/N S1509AP-SE; and AS332C and AS332L rotorcraft which are equipped with an Aerospatiale tube, P/N D00455-1 or 704A41-818-002 and cargo sling P/N S109-3 only.

(* or later FAA approved revisions)

— See continuation Sheet —

Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.

J. H. Nehera
Regional Manager, Aircraft Certification
For Minister of Transport

Canada

Transport Canada Civil Aviation | Transports Canada Aviation civile

(Continuation Sheet)

Number: SH99-022 Issue 1

NOTE: THIS ADDENDUM SHALL REMAIN PART OF THE CERTIFICATE REFERRED TO THEREIN.

Required Equipment :
FAA approved Onboard Systems Rotorcraft Flight Manual Supplements (RFMS) :

Model	Equipment	RFMS
SA 330J	E-53 cargo hook load cell system	RFMS dated March 6, 1990 *
	210-059-00, or 210-060-00 load cell indicator replacement options	RFMS dated March 3, 1993 *
AS332C and AS332L	E-54 cargo hook load cell system	RFMS dated April 15, 1991 *

(* or later FAA approved revisions)

— End —

EASA STC

EASA
European Aviation Safety Agency

SUPPLEMENTAL TYPE CERTIFICATE

10066031 REV. 1

This Certificate/Approval 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, if applicable, environmental protection requirements when operated within the conditions and limitations specified below:

Type Certificate Number: EASA.R.002
Type Certificate Holder: AIRBUS HELICOPTERS
Type: SA 330/AS 332/EC 225
Model: AS 332 C, AS 332 C1
AS 332 L, AS 332 L1, SA 330 J
Original STC Number: FAA STC SH4904NM

Description of Design Change:
Installation of Onboard Systems International Load Weigh Kits

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.

Associated Technical Documentation:
Master Drawing List (MDL) No. 155-002-00, Revision 19, dated 9 October 2017, or later Federal Aviation Administration (FAA) approved revision.

See Continuation Sheet(s)

For the European Aviation Safety Agency

Cologne, Germany, 04 July 2018

Mathieu HENRY
Heavy Rotorcraft Section
Manager

EASA STC continued

Owner's Manual 120-008-00, Revision 11, dated 9 October 2017, or later FAA accepted revision.

Rotorcraft Flight Manual Supplement (RFMS) 121-067-00, Revision 0, dated 14 May 2018, or later FAA approved revision.

Limitations/Conditions:
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.

Approval of this change in type design applies to only those SA330J model rotorcraft, which were previously equipped with an Airbus Helicopters link, P/N 53-40200-19 and cargo hook P/N S1509AP-SE; and models AS332C, AS332C1, AS332L, and AS332L1 model rotorcraft, which were previously equipped with an Airbus Helicopters tube, P/N D00455-1 or 704A41-818-002 and cargo sling, P/N S109-3, only.

- End -