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FAA APPROVED ROTORCRAFT FLIGHT MANUAL SUPPLEMENT

STC SR01164SE

Swing Suspension System
With Talon LC Hydraulic Cargo Hook
Airbus Helicopter Models
AS350B, AS350B1, AS350B2, AS350B3
AS350BA & AS350D

R/N _____ S/N _____

FAA Approved: _____
Manager, Seattle Aircraft Certification Office
Federal Aviation Administration
Renton, Washington

Date: 4/25/2016

Record of Revisions

Rev.	Date	Page(s)	Reason for Revision
0	02/02/2005	All	Initial Release.
1	06/06/2007	All	Removed reference to Class C rotorcraft load combinations. Minor formatting changes including CAUTION notes.
2	06/12/2007	All	Re-worded section I.4 per EASA request to state: The lesser of that specified by the Eurocopter "Cargo Swing" Flight Manual Supplement for your particular AS350 model or 3086 lbs (1400 kg).
3	10/25/2007	All	Revised to add new applicable kit part no. 200-280-03. Added Figures 1, 2, 3, and 4.
4	07/31/2015	All	Re-format and re-write of manual.
5	10/07/2015	Page 6	Corrected Placards section.
6	04/25/2016	All	Added instructions for optional Cargo Hook with Surefire Release.

1 GENERAL

This supplement must be attached to the appropriate FAA approved Airbus Helicopters Rotorcraft Flight Manual when an Onboard Systems P/N 200-280-02, 200-280-03, 200-280-05, or 200-280-06 Cargo Hook Swing Suspension is installed in accordance with Supplemental Type Certificate (STC) NO. SR01164SE. In addition it is necessary to obtain Airbus Helicopters' EXTERNAL LOAD TRANSPORT "CARGO SWING" Flight Manual Supplement for your particular AS350 model helicopter.

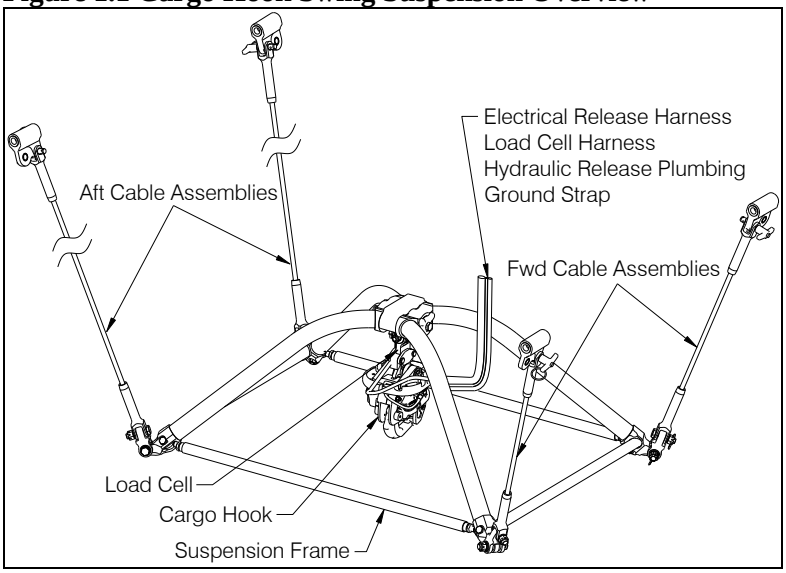
The information contained herein supplements or supersedes the basic manual only in those areas listed herein. For limitations, procedures and performance information not contained in this supplement consult the basic Rotorcraft Flight Manual and the Airbus Helicopters' "CARGO SWING" Flight Manual Supplement for your particular AS350 model helicopter.

1 GENERAL continued

The 200-280-02, 200-280-03, 200-280-05, and 200-280-06 Cargo Hook Swing Suspension Systems are comprised of:

- A "swing" suspension that is suspended from the belly of the rotorcraft by four cable assemblies. It supports the cargo hook and load cell and is designed to reduce swinging of the load.

Figure 1.1 Cargo Hook Swing Suspension Overview



- A load weigh system, which is comprised of an indicator mounted to the RH door pillar within the cockpit, a load cell above the cargo hook, and the interconnecting wire harnesses. This system provides an indication of the weight of the load being carried on the cargo hook.

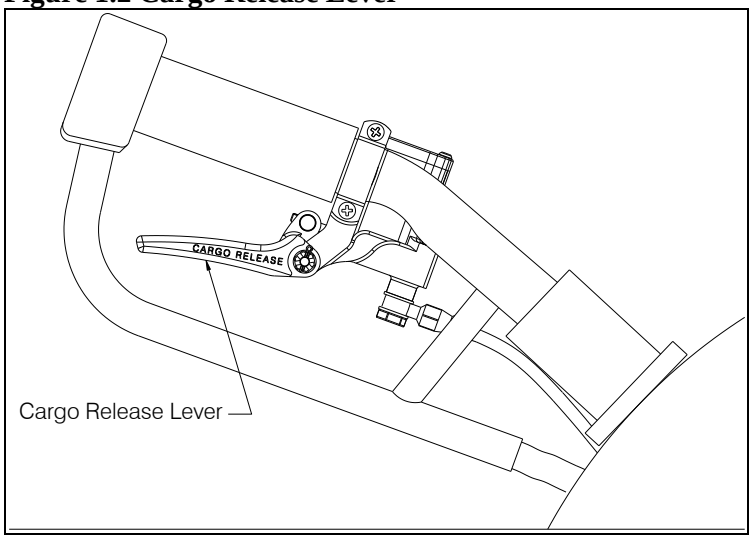
1 GENERAL continued

- An electrical release system that provides a means for load release. The system is operated by arming the system with the SLING push button on the console and actuating the Cargo Release switch on the cyclic. These systems interface with the Airbus Helicopters' push button on the console and the switch on the cyclic.

  Kit P/Ns 200-280-05 and 200-280-06 include a cargo hook (P/N 528-028-02) with a delay circuit to help protect against inadvertent load release as a result of accidental contact with the Cargo Release switch or inadvertently pressing this switch. This delay circuit requires that the release switch be held for approximately ½ second in order to release the cargo hook load. This feature is referred to as Surefire Release.

- A hydraulic release system which provides an additional means of releasing a cargo hook load. A lever mounted to the collective (see Figure 1.2) actuates it.

Figure 1.2 Cargo Release Lever



2 LIMITATIONS

The limitations specified in the basic flight manual and the Airbus Helicopters' "Cargo Swing" flight manual supplement remain applicable and are complemented by the following.

Operating Limitation

With a load attached to the cargo hook, operation shall be conducted in accordance with the respective national operational requirements.

The cargo hook kit configurations (as installed per this STC SR01164SE) do not meet the 14 CFR part 27 certification requirements for Human External Cargo (HEC).

NOTICE

The cargo hook kit equipment certification approval does not constitute operational approval; operational approval for external load operations must be granted by the local Aviation Authority.

⚠ WARNING

The swing suspension is designed to allow the cargo hook to pivot and align with the external load in all directions with limits to protect the cargo hook and suspension frame from damage. Take precautions to prevent external load angles which exceed the limits of rotation provided by the suspension as the load may not be releasable in this position.

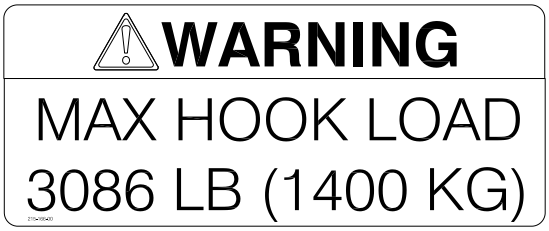
Cargo hook maximum load

The maximum load to be carried on the cargo hook is the lesser of that specified by the Airbus Helicopters' Cargo Swing Flight Manual Supplement or 3086 lbs (1400 kg).

Placards

The following placards are included with the Cargo Hook Swing Suspension Systems.

- Mounted near to the cargo hook and in clear view of ground crew:



- Adhered on the solenoid housing of optional cargo hook P/N 528-028-02 which is equipped with Surefire Release:

- Adhered adjacent to the cockpit cargo release switch if optional Cargo Hook with Surefire Release P/N 528-028-02 is installed:

3 EMERGENCY PROCEDURES

⚠ DANGER

In an emergency such as snagged load or engine failure, the manual release system should be the first option for release of the external load as this system provides greater load release authority in an overload condition. If the manual release option fails, NEXT try the electrical release.

In the event of engine failure in flight while transporting external load, establish auto-rotational flight and release external load immediately.

In the event of engine failure while ground crew is attaching the external load move the rotorcraft to the right. Ground crew is to be instructed to move to the left of the rotorcraft.

In the event that the cargo hook fails to release electrically in any case, pull the manual release lever on the collective to release the external load.

4 NORMAL PROCEDURES

The normal procedures specified in the basic flight manual remain applicable and are complemented by the following.

Pre-Flight Check

Before a flight involving external load operations perform the following procedures. If the procedures are not successful do not use the equipment until the problem has been corrected.

1. Check all mounting fasteners to ensure that they are tight.
2. Check the electrical harnesses and connectors for damage and security.
3. Check the cargo hook and suspension components for cracks and damage.
4. Visually check for cracks in the suspension frame. The frame tubes contain a corrosion preventative compound which may leak out through a crack and also provide an indication of a crack.
5. Swing the cargo hook and the suspension assembly to their full extremes to verify that they do not reach the limit of the range of motion of the electrical harnesses and hydraulic hose.

Pre-Flight Check continued

6. Cycle the electrical release system to ensure proper operation. The following instructions are applicable to cargo hook P/N 528-028-00.

NOTICE

If Cargo Hook with Surefire Release (P/N 528-028-02) is installed, the electrical release includes a ½ second time delay. See specific procedures in this step for this cargo hook model.

- Press the Cargo Release switch on the cyclic, the load beam should fall to the open position.
- Push up on the load beam and verify that it latches and the hook lock indicator is aligned with the engraved line on the manual release cover (see Figure 4.2).

NOTICE

The cargo hook kits use the OEM electrical release switch located on the cyclic. Refer to the Airbus Helicopters RFMS for operational information for the rotorcraft's cargo hook electrical release system.

The following instructions are applicable to the optional cargo hook P/N 528-028-02. In addition to the P/N, this cargo hook can also be identified by its gold color solenoid cover (see Figure 4.1).

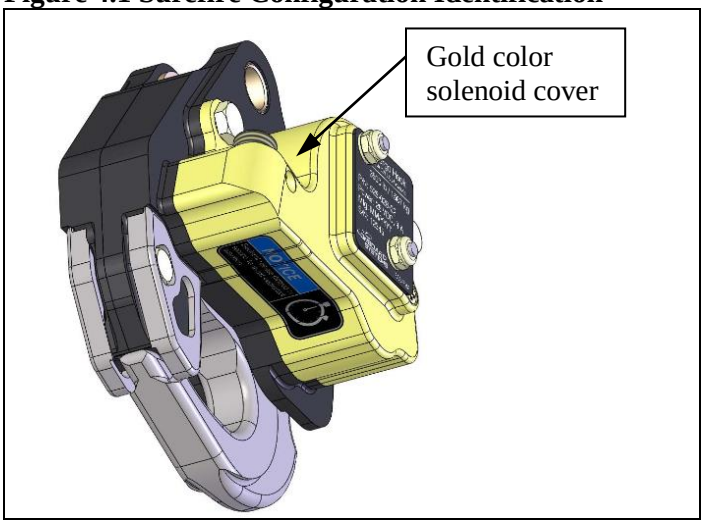
Pre-Flight Check continued

- *Very* briefly press the Cargo Release switch, the cargo hook should not actuate and the load beam should remain closed.
- Press and hold the Cargo Release switch for several seconds, the load beam should fall to the open position and the cargo hook solenoid should continue to cycle repeatedly.
- Push up on the load beam and verify that it latches and the hook lock indicator is aligned with the engraved line on the manual release cover (see Figure 4.2)

NOTICE

By design (to help protect against inadvertent load release) cargo hook P/N 528-028-02 requires that the Cargo Release switch on the cyclic be held for at least ½ second to release the load.

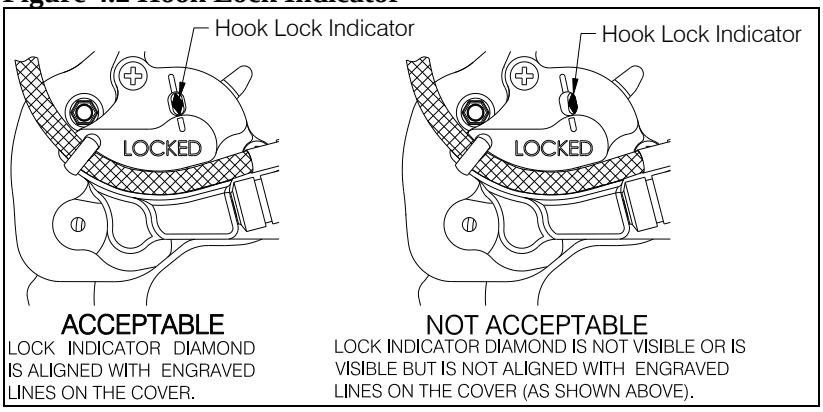
Figure 4.1 Surefire Configuration Identification



Pre-Flight Check continued

7. Cycle the hydraulic release system to ensure proper operation. Pull the manual release lever on the collective and the cargo hook should open. The cargo hook may be returned to the closed and locked position by manually pushing up on the load beam. The load beam should snap shut. Verify that the hook lock indicator on the side of the hook returns to the fully locked position. In the fully locked position the hook lock indicator should align with the lines on the cover (see Figure 4.2). The cargo hook may be flown in the open position to facilitate loading by a ground crew.

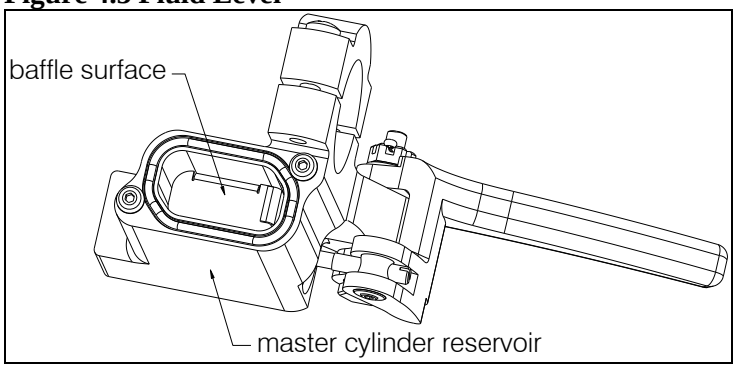
Figure 4.2 Hook Lock Indicator



Pre-Flight Check continued

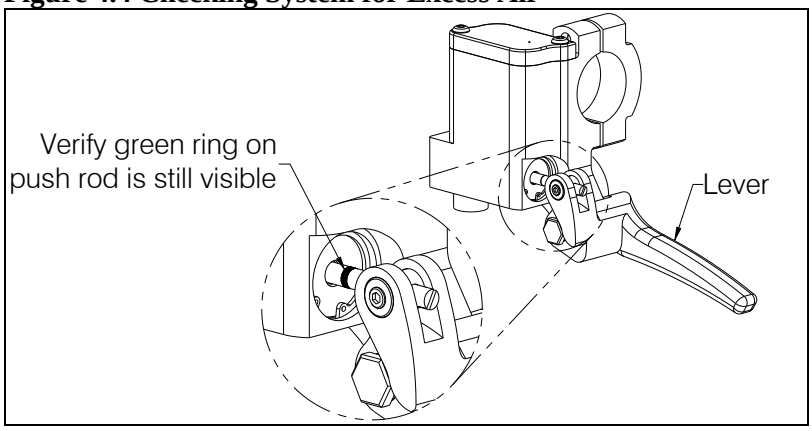
8. Check the fluid level in the master cylinder reservoir. The reservoir features a transparent lid through which the fluid level can be checked. Hydraulic fluid must be visible over the baffle surface (see Figure 4.3).

Figure 4.3 Fluid Level



9. Check the hydraulic release system for excess air in the lines by pulling the release lever firmly until it bottoms out. Check the push rod position (see Figure 4.4). If some of the green ring on the push rod is visible, the system is ready for use. If none of the green ring is visible, the system needs to be bled. Refer to applicable ICA for bleed instructions.

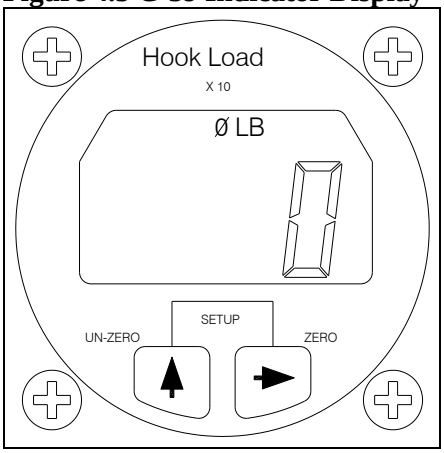
Figure 4.4 Checking System for Excess Air



Pre-Flight Check continued

10. Power on the C-39 Load Indicator. After a brief self-diagnostic routine is complete the indicator display should indicate "0" as shown below (with no load on the cargo hook):

Figure 4.5 C-39 Indicator Display



NOTICE

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

Cargo Hook Rigging

Prior to attaching an external load, instruct the ground crew to ensure that the helicopter has been electrically grounded to discharge static electricity. If possible, maintain ground contact until hook up is completed.

Extreme care must be exercised in rigging a load to the Cargo Hook. The following illustration shows the recommended rigging configuration and rigging to avoid.

⚠ WARNING

The examples shown are not intended to represent all possibilities. It is the responsibility of the operator to ensure the hook will function properly with the rigging. Some combinations of small primary rings and large secondary rings could cause fouling during release.

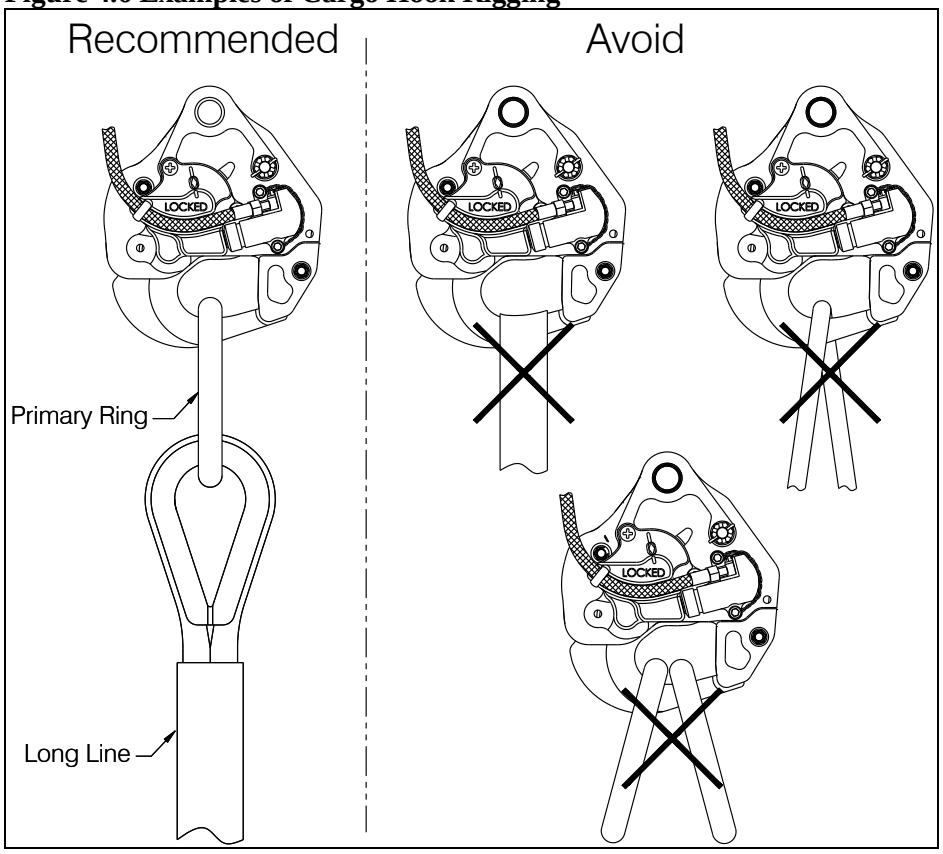
Nylon Type Straps or Rope

⚠ WARNING

Nylon type straps (or similar material) or rope must not be used directly on the cargo hook load beam. If nylon straps or rope must be used they should be first attached to a steel primary ring. Verify that the ring will freely slide off the load beam when it is opened. Only the primary ring should be in contact with the cargo hook load beam. See Figure 4.6.

Cargo Hook Rigging continued

Figure 4.6 Examples of Cargo Hook Rigging



Take-off

1. Following attachment of the external load, slowly increase the collective pitch and ascend vertically, maintaining the rotorcraft directly above the load.
2. When the slack in the long line is removed dwell briefly before lifting the load vertically from the surface.
3. Check torque required to hover with the external load.
4. Check for adequate directional control.
5. Take off into the wind, if possible, and ensure clearance of the external load over obstacles.

Maneuvers

Make all control movements gently with gradual acceleration and deceleration and only slightly banked turns.

Control movements should be made gently and kept to a minimum to prevent oscillation of the load and to maintain the external load angle within the limits of rotation of the cargo hook.

Approach and Release of External Load

1. Perform the approach at minimum rate of descent.
2. Execute the approach to hover with sufficient height to prevent the load from hitting obstacles on or being dragged along the ground and then slowly descend vertically to set the load on the ground.
3. Press the CARGO RELEASE switch on the cyclic to release the external load from the cargo hook.

   The manual release lever on the collective may also be used to release the external load in normal circumstances.
4. Visually check to ensure that the external load has been released.

Verify that the external load and long line has dropped free from the rotorcraft before departing the drop-site.

5 PERFORMANCE

The basic Flight Manual remains applicable when there is no external load attached.

When there is an external load, performance will be reduced depending on its size, weight and shape.

The Load Weigh System is designed and installed as a means of MONITORING the load (weight) suspended from the Cargo Hook. Functional and performance characteristics have not been determined on the basis of Load Cell indication or display. Therefore, this instrument shall NOT be used as a primary indication of performance and flight operation must NOT be predicated on its use.