

**PLEASE CHECK WEB SITE AT WWW.ONBOARDSYSTEMS.COM FOR
THE LATEST REVISION OF THIS MANUAL**

FAA APPROVED

***ROTORCRAFT FLIGHT MANUAL
SUPPLEMENT***

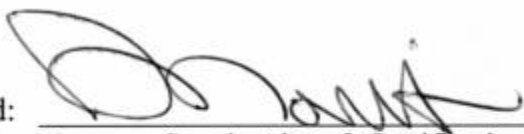
***Onboard Systems
Swing Suspension System
With Keeperless Cargo Hook***

***Airbus Helicopters Models
AS355E, AS355F, AS355F1,
AS355F2, AS355N, and AS355NP***

R/N _____ S/N _____

FAA Approved:

FOR



Manager, Seattle Aircraft Certification Office

Date: *29 APR 2014*

Revised:



RFM Supplement

Document Number

121-019-02

Cargo Hook

Page

1 of 16

Revision 0

1. General

This supplement must be attached to the appropriate FAA approved Airbus Helicopters Rotorcraft Flight Manual when an Onboard Systems 200-292-02 Cargo Hook Swing Suspension is installed in accordance with Supplemental Type Certificate (STC) NO. SR01424SE. In addition it is necessary to obtain Airbus Helicopter's EXTERNAL LOADS TRANSPORT "CARGO SWING" Flight Manual Supplement for your particular AS355 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 "Cargo Swing" Flight Manual Supplement issued by Airbus Helicopters.

	RFM Supplement	Document Number 121-019-02	Rev. 0
	Cargo Hook	Page 2 of 16	FAA Approved APR 24 2014

1. **General** continued

The 200-292-02 Cargo Hook Swing Suspension System is comprised of:

- A pyramidal shaped welded frame suspended by four cables (referred to as swing suspension, see Figure 1.1 for overview) from attachments on the rotorcraft's skid gear cross tubes. The swing suspension supports the cargo hook and swings in the direction of the external load.
- An electrical release system that provides means for release of the cargo hook load by pilot actuation of a pushbutton switch on the cyclic. The system interfaces with the rotorcraft's electrical release mission selector and release pushbutton switch as supplied by Airbus Helicopters.
- A manual release system, which provides a backup means of releasing a cargo hook load. It is actuated by a lever mounted to the collective (see Figure 1.2).
- A load weigh system, which is comprised of a load indicator mounted within the cockpit, a load cell at the cargo hook, and the interconnecting wire harness. The indicator informs the pilot of the weight of the load being carried on the cargo hook.



RFM Supplement

Document Number
121-019-02

Rev. 0

Cargo Hook

Page
3 of 16

FAA Approved
APR 24 2014

1. General continued

Figure 1.1 Swing Suspension Overview

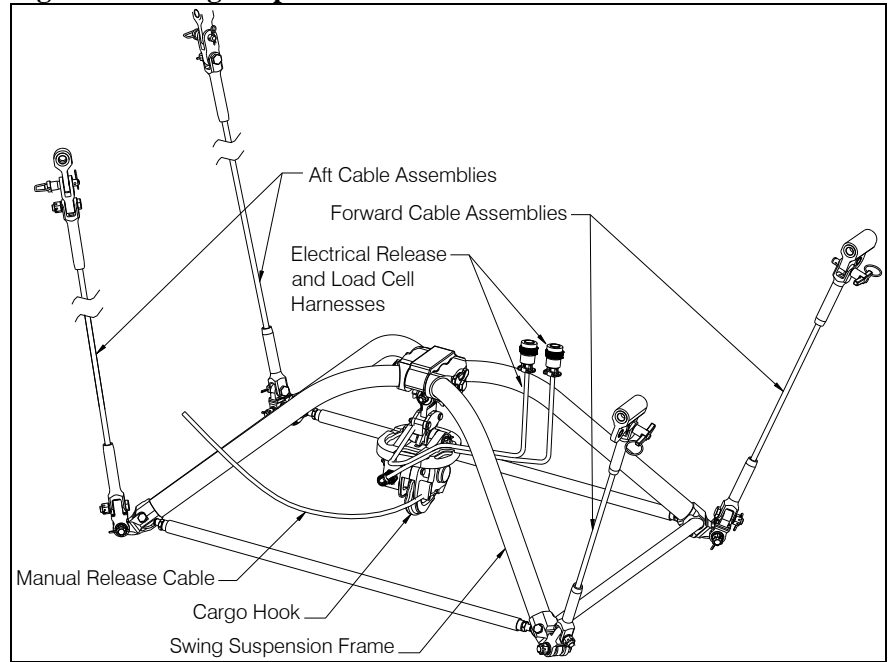
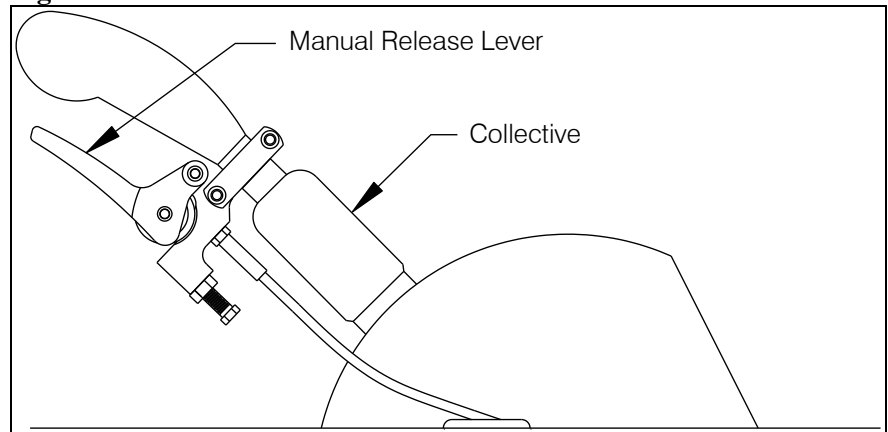


Figure 1.2 Manual Release Lever



RFM Supplement

Document Number
121-019-02

Rev. 0

Cargo Hook

Page
4 of 16

FAA Approved
APR 24 2014

2. Limitations

2.1 Weight Limitations

The maximum external load to be carried on the cargo hook is the lesser of that specified by the Airbus Helicopters "Cargo Swing" Flight Manual Supplement for your particular AS355 model or 2500 lbs (1134 kg).

For the maximum all up weight with external load, refer to the Airbus Helicopters "Cargo Swing" Flight Manual Supplement for your particular AS355 model.

2.2 Longitudinal CG

Consult the Airbus Helicopters "Cargo Swing" Flight Manual Supplement for your particular AS355 model for longitudinal cg limits when an external load is attached.

2.3 Airspeed Limitations

Consult the Airbus Helicopters "Cargo Swing" Flight Manual Supplement for your particular AS355 model for airspeed limits including Vne when an external load is attached.

Maximum operational air speed with external loads is dependent upon the size, weight and shape of the load and the sling length. It is the operator's responsibility to establish the maximum operational speed for each specific load configuration.



RFM Supplement

Document Number
121-019-02

Rev. 0

Cargo Hook

Page
5 of 16

FAA Approved
APR 24 2014

2.4 Operating Limitations

With a load attached to the cargo hook, operation shall be conducted in accordance with the local Aviation Authority operational requirements. For U.S. operator's 14 CFR part 133 is applicable.

NOTICE

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

This cargo hook kit is approved for jettisonable non-human external cargo (NHEC).

When external loads are carried, no person may be carried unless: (1) he is a flight crew member, (2) he is a flight crew member trainee, or (3) he performs an essential function in connection with the external load operation.

The rotorcraft may also be operated with the swing suspension removed and the fixed provisions portion of the kit installed only. The fixed provisions include fittings at the rotorcraft skid gear hard points, the internal manual release cable and release lever, internal electrical release and load weigh harnesses, and all cargo hook related equipment in the cockpit.



RFM Supplement

Document Number
121-019-02

Rev. 0

Cargo Hook

Page
6 of 16

FAA Approved
APR 24 2014

3. Emergency Procedures

The emergency procedures specified in the basic Flight Manual remain applicable and are complemented by the following.

3.1 Cargo Hook Fails to Release Load Electrically.

In the event that the Cargo Hook will not release the external load electrically, proceed as follows.

1. Maintain tension on the sling.
2. Pull the manual release lever located on the collective to release the load.



RFM Supplement

Document Number
121-019-02

Rev. 0

Cargo Hook

Page
7 of 16

FAA Approved
APR 24 2014

4. Normal Procedures

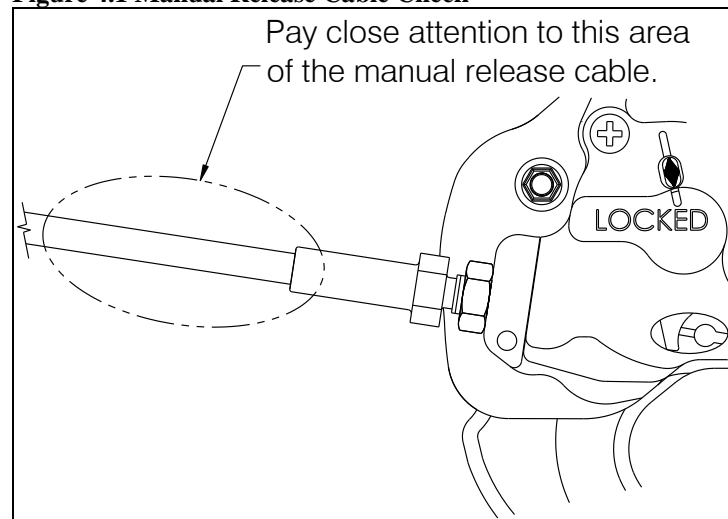
The normal procedures specified in the basic flight manual are applicable and are completed or modified by the following.

4.1 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. Swing the cargo hook and the suspension assembly to their full extremes to verify that the manual release cable and the electrical harnesses are not pulled tight in any position.
2. Visually check the manual release cable for damage, paying close attention to the flexible conduit at the area of transition to the cargo hook end fitting (refer to Figure 4.1). Check for splitting of the outer black conduit in this area and separation of the conduit from the steel end fitting.

Figure 4.1 Manual Release Cable Check



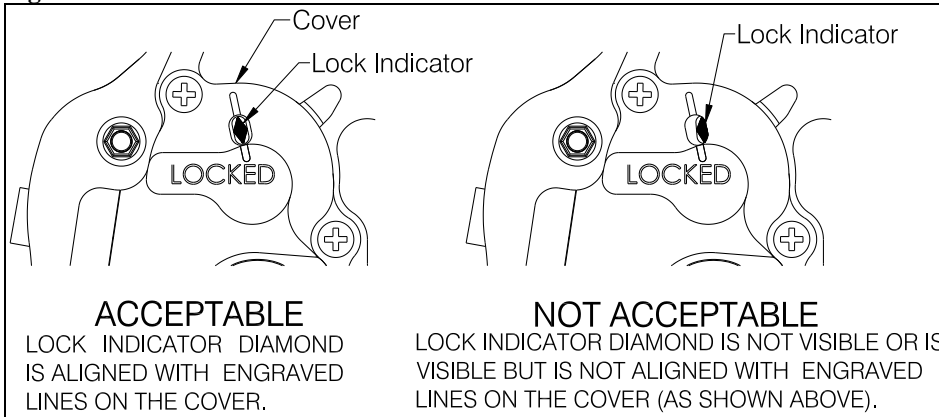
4.1 Pre-Flight Check continued

3. Cycle the manual release system to ensure proper operation. Pull the manual release lever on the collective. The cargo hook load beam must open. Return the cargo hook load beam to the locked position by manually pushing up on it. The load beam should snap shut. Verify that the hook lock indicator on the side of the hook returns to the fully locked position (see Figure 4.2).



In the closed and fully locked position the hook lock indicator must align with the lines on the manual release cover (see Figure 4.2).

Figure 4.2 Hook Lock Indicator



4.1 Pre-Flight Check continued

4. Cycle the electrical release system to ensure proper operation per the following. Arm the cargo hook electrical release system using the rotorcraft's mission selector. Press the CARGO REL pushbutton switch on the cyclic and ensure the cargo hook opens. Return the cargo hook load beam to the locked position by manually pushing up on it. The load beam should snap shut. Verify that the hook lock indicator on the side of the hook returns to the fully locked position (see Figure 4.2). The cargo hook may be flown in the open position to facilitate loading by a ground crew.

NOTICE

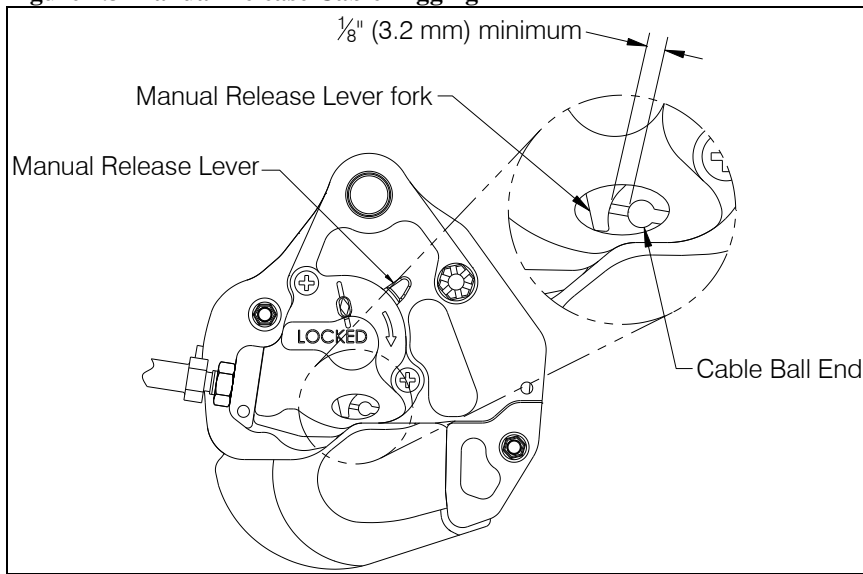
The cargo hook swing suspension interfaces with the rotorcraft's electrical release mission selector and release pushbutton switch as supplied by Airbus Helicopters. Consult the Airbus Helicopters "Cargo Swing" Flight Manual Supplement for operation of these components.

	RFM Supplement	Document Number 121-019-02	Rev. 0
	Cargo Hook	Page 10 of 16	FAA Approved APR 24 2014

4.1 Pre-Flight Check continued

5. Check the manual release cable rigging through the window in the cargo hook manual release cover. With the cargo hook load beam closed and locked, rotate the manual release lever clockwise to remove the free play (the free play is taken up when the hook lock indicator begins to move, this is also readily felt as the lever rotates relatively easily for several degrees as the free play is taken up) and hold it in this position while checking the gap between the release lever fork and the cable ball end as shown below. Visually check that there is approximately a minimum gap of 1/8" (3.2 mm) as shown in Figure 4.3.

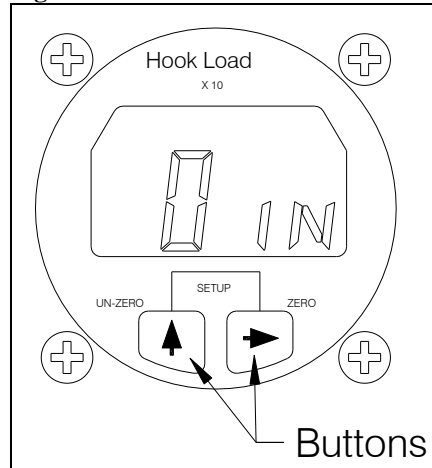
Figure 4.3 Manual Release Cable Rigging



4.1 Pre-Flight Check continued

6. Power on the hook load 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.

Figure 4.4 Hook Load Indicator



	RFM Supplement	Document Number 121-019-02	Rev. 0
	Cargo Hook	Page 12 of 16	FAA Approved APR 24 2014

4.2 Take-off



In wet weather, the ground operator should wear thick rubber gloves. Before attaching the load, discharge static electricity by placing a ground wire or tube between the cargo hook and ground.

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

4.3 Maneuvers

Control movements should be made gently and kept to a minimum to prevent oscillation of the load on the cargo hook.

4.4 Approach with 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.
4. Visually check to ensure that the external load has been released.



RFM Supplement

Document Number
121-019-02

Rev. 0

Cargo Hook

Page
13 of 16

FAA Approved
APR 24 2014

4.5 Cargo Hook Rigging

Extreme care must be exercised in rigging a load to the Cargo Hook. Figure 4.5 shows a recommended rigging configuration and rigging configurations to avoid.



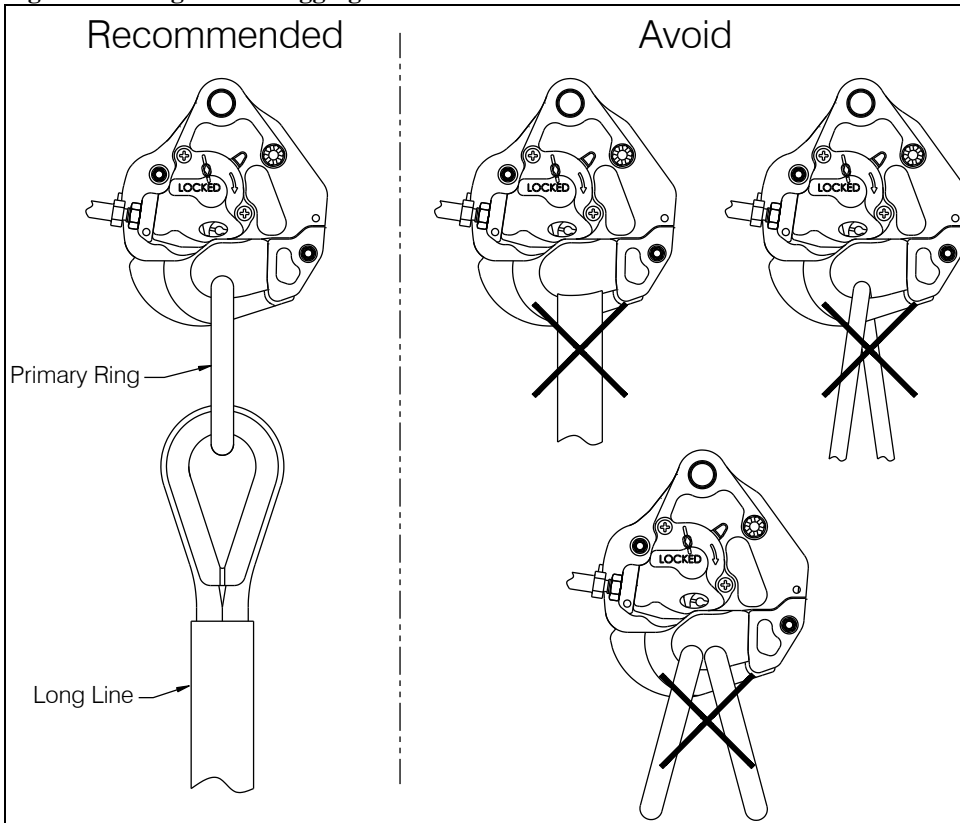
The configurations shown are not intended to represent all possibilities. It is the responsibility of the operator to assure the hook will function properly with the rigging configuration being used.



Multiple load rings, 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 the cargo hook is opened. Only the primary ring should be in contact with the cargo hook load beam. See Figure 4.5.

	RFM Supplement	Document Number 121-019-02	Rev. 0
	Cargo Hook	Page 14 of 16	FAA Approved APR 24 2014

Figure 4.5 Cargo Hook Rigging



5. Performance

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

When there is an external load attached to the cargo hook, 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.

	RFM Supplement	Document Number 121-019-02	Rev. 0
	Cargo Hook	Page 16 of 16	FAA Approved APR 24 2014