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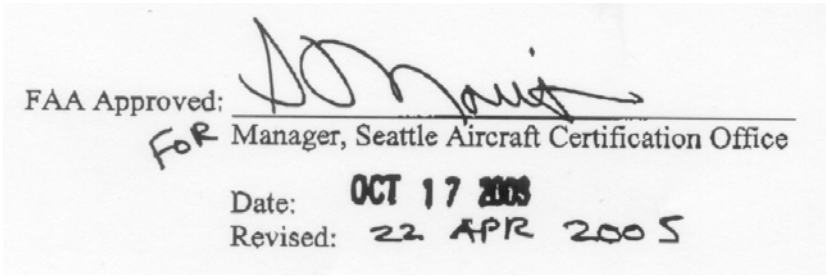
FAA APPROVED

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT

Onboard Systems
28V Cargo Hook Suspension System
with Keeperless Cargo Hook

Robinson R44 Raven II

R/N _____S/N _____



INTRODUCTION

This supplement must be attached to the appropriate FAA approved Rotorcraft Flight Manual when an Onboard Systems 200-288-00 or 200-289-00 Cargo Hook Kit is installed in accordance with Supplemental Type Certificate (STC) NO. SR01064SE. 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.

I. LIMITATIONS

I.1 Airspeed Limits

Vne= 85 KIAS, or less with external load. Do not exceed Vne of basic helicopter.
(Vne determined from maximum demonstrated airspeed with dense cargo.)

CAUTION

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

I.2 Type of Operation

The basic Flight Manual remains applicable. With a load attached to the cargo hook, operation shall be conducted in accordance with the respective national operational requirements. For U.S. operators FAR Part 133 is applicable.

This cargo hook is approved for non-human cargo, class B rotorcraft load combinations only.

The helicopter may also be operated with the fixed provisions portion of the kit installed only. This includes the hardpoint, stowed manual and electric release cables and all Cargo Hook related equipment in the cockpit.

I.2 Weight and CG

The maximum weight and CG of the combined helicopter and external load remains the same as the basic manual.

Table I.2-1 Weight and CG data

DESCRIPTION	WEIGHT lbs (kg)	FUSELAGE STATION inches (mm)	LATERAL STATION inches (mm)
Complete Cargo Hook Kit with Load Weigh	6.3 (2.9)	93.9 (2385)	-4.1 (-104)
Complete Cargo Hook Kit without Load Weigh	4.8 (2.2)	93.9 (2385)	-4.1 (-104)
Provisions Kit (no hook) with Load Weigh	3.3 (1.5)	93.9 (2385)	-4.1 (-104)
Provisions Kit (no hook) without Load Weigh	1.8 (0.8)	93.9 (2385)	-4.1 (-104)

Load Weigh Indicator location is variable: Indicator weight = 0.43 lbs (.20 kg).

Center of gravity limits must be checked with and without the external load to verify that the rotorcraft is within the approved weight and center of gravity limits.

I.3 Cargo Hook Load

Maximum Cargo Hook loading is 800 lbs (363 kgs).

I.4 Placards

EXTERNAL LOAD LIMIT = 800 LBS (363 KGS)

Mounted on the belly of the aircraft adjacent to the cargo hook attachment point in clear view of the ground support personnel.

WITH EXTERNAL LOADS, APPROVED FOR
CLASS B ROTORCRAFT – LOAD OPERATIONS
DAY – VFR ONLY

Mounted on the instrument panel in clear view of the pilot.

FOR FAR PART 133.35(A) OPERATIONS:
NO PERSON MAY BE CARRIED UNLESS HE IS:
(1) A FLIGHT CREW MEMBER OR TRAINEE;
(2) PERFORMS AN ESSENTIAL FUNCTION IN CONNECTION WITH THE EXTERNAL LOAD OPERATION; OR
(3) IS NECESSARY TO ACCOMPLISH THE WORK ACTIVITY DIRECTLY ASSOCIATED WITH THAT OPERATION.

Mounted on the instrument panel in clear view of the pilot.

I.4 Placards, continued

PLACARD	LOCATION
CARGO RELEASE	Mounted adjacent to the cyclic release switch in clear view of the pilot.
CARGO RELEASE	Mounted adjacent to the copilot's release switch.
CARGO RELEASE	Mounted adjacent to the mechanical release in clear view of the pilot.
PULL	Mounted adjacent to the mechanical release in clear view of the pilot.
CARGO	Mounted adjacent to the Cargo Hook circuit breaker in clear view of the pilot

I.4 Placards, continued

TURN THE WEIGHING SYSTEM OFF WHEN NAVIGATION EQUIPMENT IN USE. NO AIRCRAFT OPERATION SHOULD BE PREDICATED ON THE READING OF THE ONBOARD WEIGHING SYSTEM.
When an Onboard Systems 200-289-00 system is installed, mount adjacent to the Onboard Systems digital/ analog indicator in full view of the pilot and co-pilot.
ELECTRONIC WEIGHING SYSTEM
When an Onboard Systems 200-289-00 system is installed, mount adjacent to both the power switch and the circuit breaker in full view of the pilot and co-pilot.

II. NORMAL PROCEDURES

II.1 STATIC DISCHARGE

Instruct the ground crew to ensure that the helicopter has been electrically grounded prior to attaching cargo to discharge static electricity. If possible, maintain ground contact until hook up is completed.

II.2 DAILY OR PRE-FLIGHT CHECK

Before each Cargo Hook use perform the following procedures. If the procedures are not successful do not use the equipment until the problem has been corrected.

II.2.1 EXTERIOR CHECK

Inspect all mounting fasteners to ensure that they are tight.

Visually inspect the electrical connector for loose or damaged pins and sockets.

Inspect the case and covers for cracks and damage.

4. Inspect the load beam for gouges and cracks.
5. Swing the hook to its full extremes to verify that it does not reach the limit of the mechanical release cable range of motion and actuate the mechanical release mechanism.

II.2.2 INTERIOR CHECK

1. Cycle the manual release handle to ensure proper operation.
2. Cycle the electrical release system to ensure proper operation.

When an Onboard Systems 200-289-00 Cargo Hook Suspension System with Load Weigh is installed, perform the following additional procedures:

1. After installation of the Load Weigh System, swing the suspension assembly to the full extremes to verify that it does not reach the limit of the mechanical release cable range of motion and actuate the mechanical release mechanism.
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.

II.3 CARGO HOOK RIGGING

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

CAUTION: The example shown is not intended to represent all possibilities. It is the responsibility of the operator to assure the hook will function properly with the rigging.

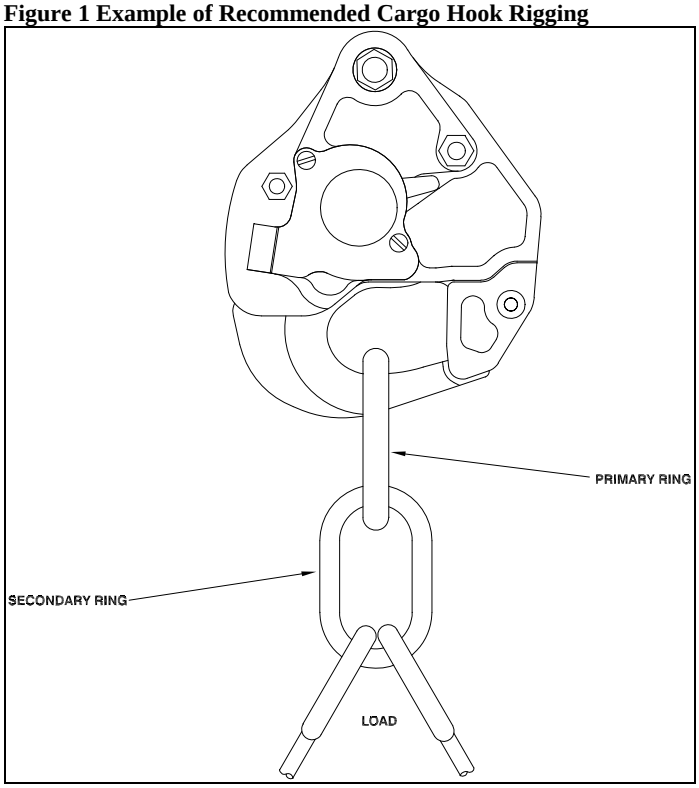
II.3 CARGO HOOK RIGGING, continued

Some combinations of small primary rings and large secondary rings could cause fouling during release.

Nylon Type Straps or Rope

CAUTION: 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 1.

Figure 1 Example of Recommended Cargo Hook Rigging



II.4 IN-FLIGHT OPERATION

Note

Control movement should be made smoothly and kept to a minimum to prevent oscillation of the load

Actuate either the electrical release switch located above the Start switch on the right side of the cyclic grip assembly (see Figure 2.1) or the optional switch on the outboard co-pilot's seat support (see Figure 2.2) to release the external load.

Figure 2.1 Cyclic Grip Release Switch

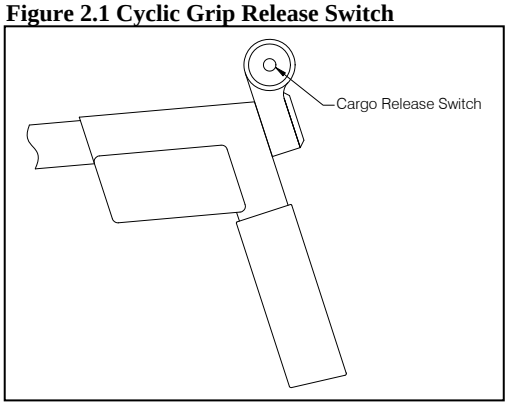
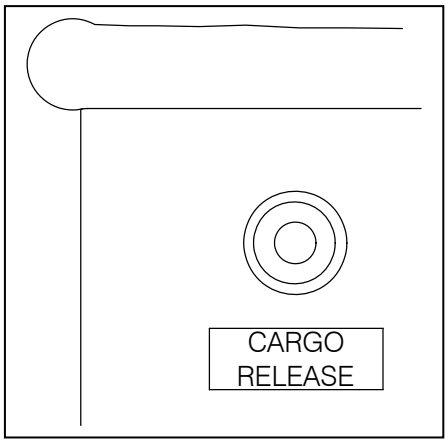


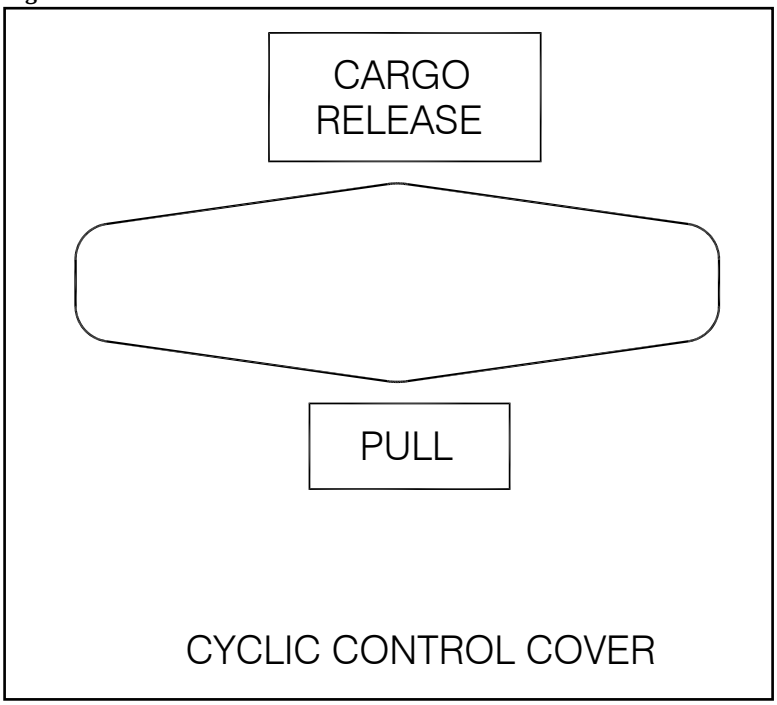
Figure 2.2 Co-Pilot's Seat Switch



IN-FLIGHT OPERATION, continued

The mechanical release handle may be used to release the external load in normal circumstances.

Figure 2.3 Mechanical release handle



It is the responsibility of the operator to establish safe operational limits for each specific configuration.

III. EMERGENCY PROCEDURES

III.1 CARGO FAILS TO RELEASE 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 mechanical release handle to release the external load.

IV. PERFORMANCE

The basic Flight Manual issued by Robinson Helicopter Company remains applicable.
There is no change from basic flight performance with no load attached to the Cargo Hook. Performance will be reduced depending on the size, weight and shape of the external load.

When an Onboard Systems 200-289-00 Cargo Hook Suspension System with Load Weigh is installed the following applies:

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