



## APPROVED FLIGHT MANUAL SUPPLEMENT

### **Hughes/MDHI 369 rotorcraft DG500 external cargo pod NZ CAA STC 11/21E/2**

for

**ZK-\_\_\_\_\_ Serial No.\_\_\_\_\_**

This supplement must be attached to the Aircraft Flight Manual when the External Cargo Pod has been installed in accordance with NZ CAA STC 11/21E/2.

The information contained herein supplements or supersedes the basic Aircraft Flight Manual only in those areas described. For limitations, procedures, and performance information not contained in this supplement, consult the basic Aircraft Flight Manual.

Approved:

Date:



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## **1. GENERAL**

NZ CAA STC 11/21E/2 installs an external cargo pod on the RH side of the belly of the aircraft

The cargo pod is FRP construction with one side door and one door on the nose of the pod.

The pod attaches to the aircraft via a centre fitting installed under the cargo hook mounting bracket, an outboard centre fitting attached to the aircraft's jacking point and a lateral stabilising bracket assembly mounted in place of an existing inspection panel under the nose of the aircraft.

## **2. LIMITATIONS**

When the aircraft is fitted with the External Cargo Pod system all of the limitations laid down in the Flight Manual remain applicable in addition to the following:

### **2.1 Maximum baggage weight**

The maximum baggage that can be loaded into the cargo pod is 150 kg (330 lb), whilst the cargo hook is not in use.

### **2.2 Weight and balance limits**

#### **CAUTION**

Loading the cargo pod to maximum weight and seating two passengers only in the RH forward and RH aft seats may cause the lateral balance limits to be exceeded.

The weight of the empty Cargo Pod assembly is 33 kg.

The centre of gravity envelope of the modified aircraft is unchanged. Refer to the basic RFM for the centre of gravity limits of the rotorcraft.

**2.3 Never exceed velocity**

For models 369D, 369E, 369FF 500N.

$V_{NE}$  limitations are as follows: 132 KIAS

**2.4 Flight Load Factors**

No change

**2.5 Types of operation:**

No change

**2.6 Yaw limits**

At  $V_{NE}$  the maximum allowable yaw is +/- 10 degrees unless otherwise restricted by the RFM.

At  $V_{(min \text{ rate of descent})}$  -15 kts the maximum allowable yaw is +/- 25 degrees unless otherwise restricted by the RFM.

Maximum allowable yaw varies linearly between the above specified limits unless otherwise restricted by the RFM.

**2.7 Cargo Hook Limitations**

Cargo hook structural load limit, with the cargo pod fitted, is reduced to:

- For the 369D, 369E, 369FF and 500N Versions: 1968 pounds
- For the 369HS Version: 1800 pounds
- For the 369HE Version: 1768 pounds

The cargo pod must be empty during operations with a load suspended by the cargo hook under NZ-CAR Part 133 operations.

## 2.8 Precautions

Adhere to all precautions as per basic Flight Manual.

## 2.9 Placards

The following placards shall be installed in the a/c as follows:

### 2.8.1 On the outside of each door of the Cargo Pod

**MAXIMUM BAGGAGE LOAD: 150 kg (330 lb)**

**CAUTION**

Loading the cargo pod to maximum weight and seating two passengers in the RH forward and RH aft seats may cause the lateral centre of gravity limits to be exceeded.

### 2.8.2 For models 369D, 369E, 369FF 500N. In the cockpit close to the ASI

**Vne 132 KIAS**

### 2.8.3 Adjacent to the cargo hook (2 places):

- For the 369HE Version

**MAXIMUM CARGO WEIGHT 1768 lb**

- For the 369D, 369E, 369FF, 500N Versions

**MAXIMUM CARGO WEIGHT 1968 lb**

## 3. EMERGENCY AND MALFUNCTION PROCEDURES

No change

## **4. NORMAL PROCEDURES**

### **4.1 General:**

The normal procedures given in the basic flight manual are still applicable but are supplemented by the following:

### **4.2 Inspections and Checks**

Carry out the following checks/inspections and correct any discrepancies before further flight.

#### **4.2.1 Prior to every day of operation:**

1	Cargo Pod system	<ul style="list-style-type: none"><li>• Generally inspect cargo pod for condition and operation.</li></ul>
2	Centre attach points	<ul style="list-style-type: none"><li>• Inspect both inboard and outboard centre attach fittings for condition. Ensure there are no signs of cracking or deterioration</li><li>• Ensure all fasteners are present and secure</li><li>• Ensure at attachment to the fibreglass shell there are no signs of delamination or cracking.</li><li>• Ensure centre outboard turnbuckle is at the correct length (pod is held firmly against fuselage surface – but not too tight) and secured against rotation and loosening.</li></ul>
3	Forward attach point	<ul style="list-style-type: none"><li>• Inspect attach fitting for condition. Ensure there are no signs of cracking or deterioration</li><li>• Ensure all fasteners are present and secure</li><li>• Ensure at attachment to the fibreglass shell there are no signs of delamination or cracking.</li><li>• Ensure turnbuckle is at the correct length (pod is held firmly against fuselage surface – but not too tight) and secured against rotation and loosening.</li></ul>



4.2.2 Prior to every flight:

1	Loaded baggage weight and security	<ul style="list-style-type: none"><li>• Ensure loaded cargo weight does not exceed 150 kg.</li><li>• High density items are to be individually strapped down and in the centre of the pod using a minimum of four tie down points with strops rated to 150kg or more.</li><li>• Ensure all loaded cargo is restrained from movement during flight – if cargo pod volume is not fully utilised use supplied partition nets to prevent cargo movement</li><li>• Ensure the rotorcraft will remain within the centre of gravity envelope throughout the flight considering all items of mass loaded on the rotorcraft.</li></ul>
2	Nets	<ul style="list-style-type: none"><li>• Always secure net across forward door opening</li><li>• Always secure net across side door opening</li><li>• Install additional nets to prevent cargo shifting in flight</li></ul>
3	Cargo Pod Doors	<ul style="list-style-type: none"><li>• Ensure forward door of cargo pod is closed and locked.</li><li>• Ensure side door net is installed across the side door opening</li><li>• Ensure side door of cargo pod is closed and locked.</li></ul>

**5. PERFORMANCE**

No change except as specified in the limitations section of this supplement.

**6. WEIGHT AND BALANCE**

It is the responsibility of the pilot in command to ensure that the Centre of Gravity (C of G) position and weight of the helicopter does not exceed the limits specified in the basic RFM.

Refer to the approved Rotorcraft Flight Manual and any applicable Flight Manual Supplements for the appropriate Centre of Gravity and weight limitations.

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The weight and balance of the installed items are as follows:

<u>ITEM</u>	<u>STA</u>	<u>Mass</u>	<u>Moment</u>
	(in)	(lb)	(in.lb)
<b>Longitudinal weight and balance</b>			
<u>Fixed parts and provisions</u>			
Centre support fitting	+96.42	+1.00	+96.4
Front support fitting	+60.00	+1.00	+60.0
TOTAL 1	+78.21	+2.00	+156.4
<u>Parts installed for operations with cargo pod</u>			
Cargo Pod Installation assy	+96.9	+72.7	+7042.7
TOTAL 2	+96.9	+72.7	+7042.7
<b>TOTAL 1 + 2</b>	<b>+96.4</b>	<b>+74.7</b>	<b>+7199.1</b>

Cargo (Max)	+96.89	+330.00	+31973.7
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<u>ITEM</u>	<u>L/R (+/-) BL</u>	<u>Mass</u>	<u>Moment</u>
	(in)	(lb)	(in.lb)
<b>Lateral weight and balance</b>			
<u>Fixed parts and provisions</u>			
Centre support fitting	+6.0	+1.0	+6.0
Front support fitting	+6.0	+1.0	+6.0
TOTAL 1	+6.0	+2.0	+12.0
<u>Parts installed for operations with cargo pod</u>			
Cargo Pod Installation assy	+16.0	+72.7	+1163.2
TOTAL 2	+16.0	+72.7	+1163.2
<b>TOTAL 1 + 2</b>	<b>+15.7</b>	<b>+74.7</b>	<b>+1175.2</b>

Cargo (Max)	+16.0	+330.0	+5280.0
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