

|  |   |  |                                   |
|--|---|--|-----------------------------------|
| U.S. DEPARTMENT OF TRANSPORTATION<br>FEDERAL AVIATION ADMINISTRATION<br><b>STATEMENT OF COMPLIANCE WITH THE FEDERAL AVIATION REGULATIONS</b>   |   |  | DATE<br>7/5/2011                  |
| <b>AIRCRAFT OR AIRCRAFT COMPONENT IDENTIFICATION</b>   |   |  |                                   |
| MAKE<br>Pilatus  | MODEL NO.<br>PC-6/B2-H4   | TYPE (Airplane, Radio, Helicopter, etc.)<br>Airplane | NAME OF APPLICANT<br>Aerocet Inc. |
| <b>LIST OF DATA</b>  |   |  |                                   |
| IDENTIFICATION   | TITLE   |  |                                   |
| PC-6-100-FMS<br>REVISION IR<br>DATE 7/5/2011   | FLIGHT MANUAL SUPPLEMENT, PILATUS PORTER PC-6 UNDER WING CARGO PODS |  |                                   |
| PURPOSE OF DATA      Show Compliance FAA STC Project ST10463SE-A   |   |  |                                   |
| APPLICABLE REQUIREMENTS (List specific sections)      CAR 3.73, 3.81, 3.84, 3.85, 3.86, 3.766, 3.777, 3.778, 3.779, 3.780  |   |  |                                   |
| <b>CERTIFICATION</b> - Under authority vested by direction of the Administrator and in accordance with conditions and limitations of appointment under Part 183 of the Federal Aviation Regulations, data listed above and on attached sheets numbered <u>N/A</u> have been examined in accordance with established procedures and found to comply with applicable requirements of the Federal Aviation Regulations. |   |  |                                   |
| <input checked="" type="checkbox"/> <b>Recommend approval of these data</b><br><input type="checkbox"/> <b>Approve these data</b>  |   |  |                                   |
| I (We) Therefore   |   |  |                                   |
| SIGNATURE(S) OF DESIGNATED ENGINEERING REPRESENTATIVE(S)   | DESIGNATION NUMBERS(S)  | CLASSIFICATION(S)                                    |                                   |
| <i>Eric Leaver</i>   | DERT636435NM  | Structures/Flight Analyst                            |                                   |
| Eric Leaver  |   |  |                                   |
|  |   |  |                                   |

**AEROCET INC.  
PILATUS PORTER PC-6 UNDER WING CARGO POD  
FLIGHT MANUAL SUPPLEMENT**



**FLIGHT MANUAL SUPPLEMENT  
PILATUS PC6 UNDER WING CARGO PODS  
Report PC-6-100-FMS  
Revision IR**

**PILATUS PORTER PC-6**

STC NUMBER \_\_\_\_\_

The information and data contained in this document supersede or supplement that contained in the basic Approved Flight Manual in those areas listed herein. For limitations, procedures and performance not contained in this document refer to the Approved Flight Manual and other applicable Approved Flight Manual Supplements.

This supplement must be attached to the Approved Flight Manual for the aircraft with the subject design change incorporated.

FAA APPROVED \_\_\_\_\_

*for*   
Federal Aviation Administration,  
Manager, Flight Test Branch,  
Seattle Aircraft Certification Office

Initial Issue Date: July 5, 2011  
New Issue Date: N/A

**AEROCET INC.  
PILATUS PORTER PC-6 UNDER WING CARGO POD  
FLIGHT MANUAL SUPPLEMENT**

**TABLE OF CONTENTS**

|                                     |     |
|-------------------------------------|-----|
| LIST OF TABLES AND FIGURES.....     | ii  |
| RECORD OF REVISIONS.....            | iii |
| ACRONYMS.....                       | iv  |
| SECTION 1 GENERAL.....              | 1   |
| SECTION 2 LIMITATIONS.....          | 2   |
| 2.1 WEIGHT LIMITS.....              | 2   |
| 2.2 PLACARDS.....                   | 2   |
| 2.3 UNDERWING FUEL TANKS.....       | 4   |
| 2.4 SKIS.....                       | 4   |
| SECTION 3 EMERGENCY PROCEDURES..... | 4   |
| SECTION 4 NORMAL PROCEDURES.....    | 4   |
| 4.1 LOADING UWP.....                | 4   |
| 4.2 PREFLIGHT.....                  | 5   |
| SECTION 5 PERFORMANCE.....          | 6   |
| 5.1 TAKE OFF DISTANCES.....         | 6   |
| 5.2 RATE OF CLIMB.....              | 6   |
| 5.3 STALL SPEED.....                | 6   |
| 5.4 BALKED LANDING.....             | 6   |
| SECTION 6 WEIGHT AND BALANCE.....   | 6   |

**AEROCET INC.  
PILATUS PORTER PC-6 UNDER WING CARGO POD  
FLIGHT MANUAL SUPPLEMENT**

**LIST OF TABLES AND FIGURES**

|   |   |
|---|---|
| Table 1 Weight and balance loading form for UWP ..... | 7 |
| Figure 1 Loading placard .....                        | 2 |
| Figure 2 Door latch placard .....                     | 3 |
| Figure 3 Removal and installation of bulkhead.....    | 3 |
| Figure 4 UWP bulkheads.....                           | 5 |

**AEROCET INC.  
PILATUS PORTER PC-6 UNDER WING CARGO POD  
FLIGHT MANUAL SUPPLEMENT**

**RECORD OF REVISIONS**

| <b>Revision</b> | <b>Revised pages</b> | <b>Description of revision</b> | <b>Date</b>  | <b>FAA signature and date</b> |
|-----------------|----------------------|--------------------------------|--------------|-------------------------------|
| IR              | All                  | Initial Issue                  | JULY 5, 2011 | <i>[Signature]</i> 8/25/2011  |

**AEROCET INC.  
PILATUS PORTER PC-6 UNDER WING CARGO POD  
FLIGHT MANUAL SUPPLEMENT**

**ACRONYMS**

AFM..... Aircraft Flight Manual  
CG ..... Centre of gravity  
Fwd ..... Forward  
in ..... Inches  
kg ..... Kilograms  
KIAS ..... Knots indicated airspeed  
lb ..... Pounds  
LD..... Landing  
m ..... Metres  
STC ..... Supplementary Type Certificate  
TO ..... Takeoff  
UWP ..... Under Wing Cargo Pod

**AEROCET INC.  
PILATUS PORTER PC-6 UNDER WING CARGO POD  
FLIGHT MANUAL SUPPLEMENT**

## **SECTION 1 GENERAL**

The Under Wing Cargo Pods (UWP) extend the flexibility of the Pilatus Porter by allowing cargo to be carried under the wings, close to the centre of gravity of the aircraft. The UWPs are designed to mount on the same fittings used for the Under Wing Fuel Tanks. The UWPs have the same shape as the tanks and are made of composite materials. This STC is valid for PC-6-B2/H4.

The Under Wing Cargo Pod and the Under Wing Fuel Tank have the same external shape. Therefore, the changes in performance and flight handling will be the same whether Pods or Tanks are installed.

**AEROCET INC.  
 PILATUS PORTER PC-6 UNDER WING CARGO POD  
 FLIGHT MANUAL SUPPLEMENT**

**SECTION 2 LIMITATIONS**

**2.1 WEIGHT LIMITS**

|  |                                     |
|--|-------------------------------------|
| Maximum weight per UWP (excluding weight of empty pod) ..... | 119 kg (262.5 lb)                   |
| Maximum load imbalance between left and right UWP .....      | 25 kg (55 lb)                       |
| Centre of gravity range of cargo inside either UWP           |                                     |
| Forward limit  | at 119 kg ..... Station 3188        |
|  | at 27 kg or less ..... Station 2462 |
| Aft limit (at all weights).....                              | Station 3327                        |
| Straight line variation between points                       |                                     |

For the purposes of calculating zero fuel weight, the total weight in the UWP (i.e. weight of cargo) plus the empty weight of the pod may be considered the same as fuel. The empty weight of each pod is 17 kg (37.5 lb.).

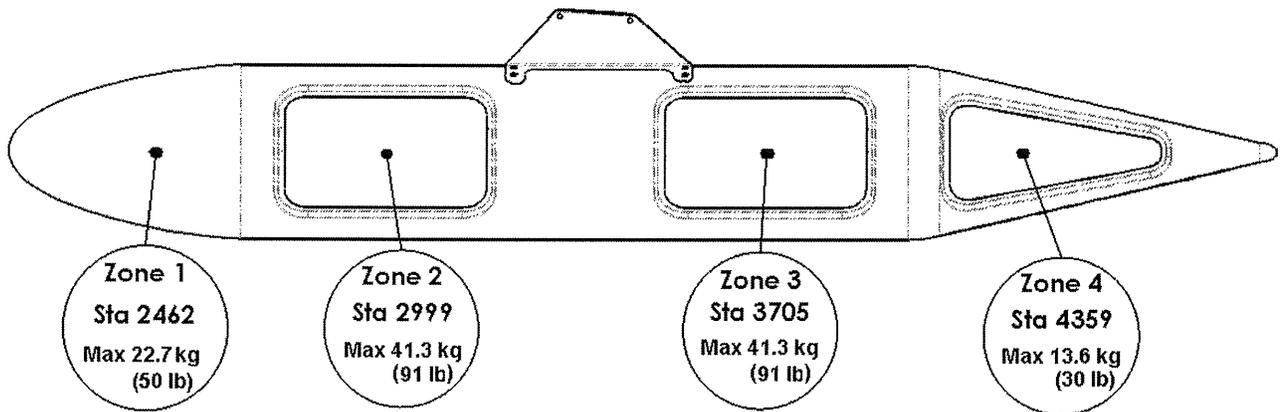
**NOTE:**  
 The range of centre of gravity applies to the cargo in the pod. It is permissible to fly with an empty pod

**2.2 PLACARDS**

On UWP, inside all doors

**Maximum load 119 kg (262.5 lb)**

**Consult Flight Manual Supplement for proper loading and determination of CG**



**Figure 1 Loading placard**

AEROCET INC.  
PILATUS PORTER PC-6 UNDER WING CARGO POD  
FLIGHT MANUAL SUPPLEMENT

On UWP, on the outside of each door, next to each latch

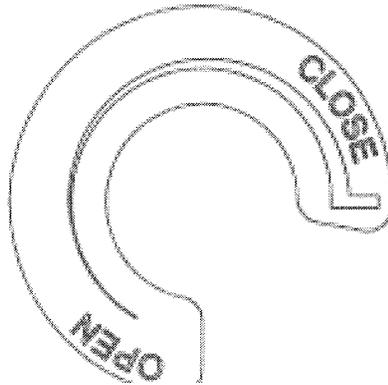


Figure 2 Door latch placard

On both sides of each bulkhead

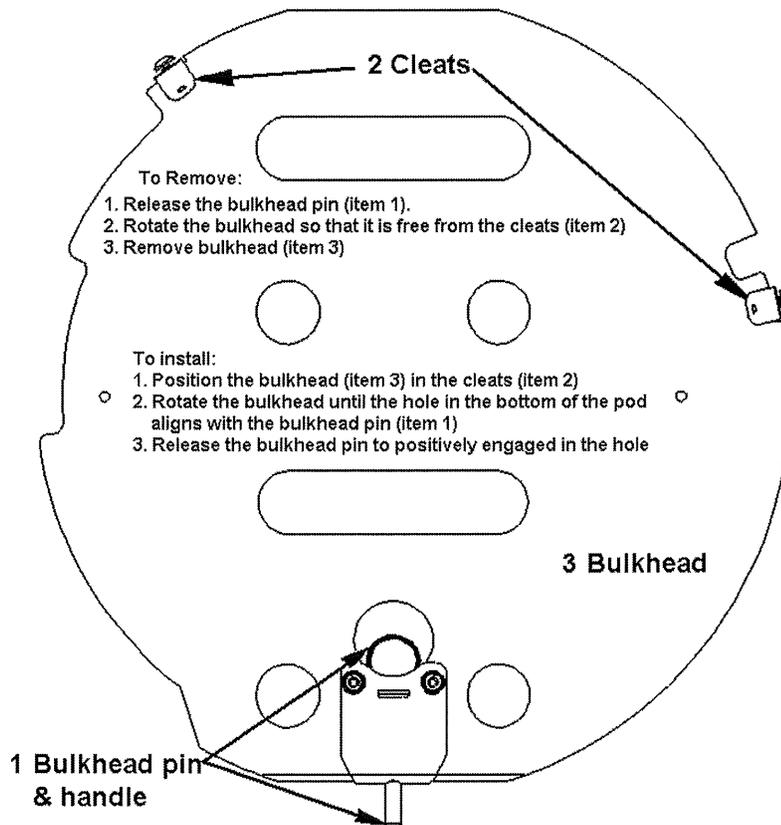


Figure 3 Removal and installation of bulkhead

**AEROCET INC.  
PILATUS PORTER PC-6 UNDER WING CARGO POD  
FLIGHT MANUAL SUPPLEMENT**

### **2.3 UNDERWING FUEL TANKS**

Installation of an UWP on one side and a Pilatus Underwing Fuel Tank part number 115.55.06.305 on the other side is permitted. Fuel may only be carried for tankering and may not be used in flight. The maximum weight imbalance between the UWP and the fuel tank must not exceed 25 kg (55 lb)

### **2.4 SKIS**

Operation with skis prohibited when UWPs are installed.

## **SECTION 3 EMERGENCY PROCEDURES**

There are no specific emergency procedures associated with this STC. Please refer to the Pilot's Operating Handbook and Approved Flight Manual (AFM).

## **SECTION 4 NORMAL PROCEDURES**

### **4.1 LOADING UWP**

When loading the UWPs, observe the following general guidelines:

1. Distribute the load between the left and right UWPs as evenly as possible. The maximum difference between the pods must not exceed 25 kg (55 lb).
2. Within each UWP, distribute the load about the centre of the UWP. As a general rule, load zones 1 & 2 first, followed by zone 3, and finally zone 4. (However, note that if cargo is to be put in zone 1, it must be loaded before zone 2, as zone 1 has no direct access). Ensure that the cg of the load is within the limits specified in Section 6.
3. The purpose of the wooden bulkheads (Figure 4) is to prevent the load from shifting between the zones. The UWPs may be operated with the bulkheads removed whenever it is necessary to carry long items that straddle various zones. The forward bulkhead must be removed to gain access to zone 1. The bulkheads may be used to secure cargo. To remove a bulkhead:

AEROCET INC.  
PILATUS PORTER PC-6 UNDER WING CARGO POD  
FLIGHT MANUAL SUPPLEMENT

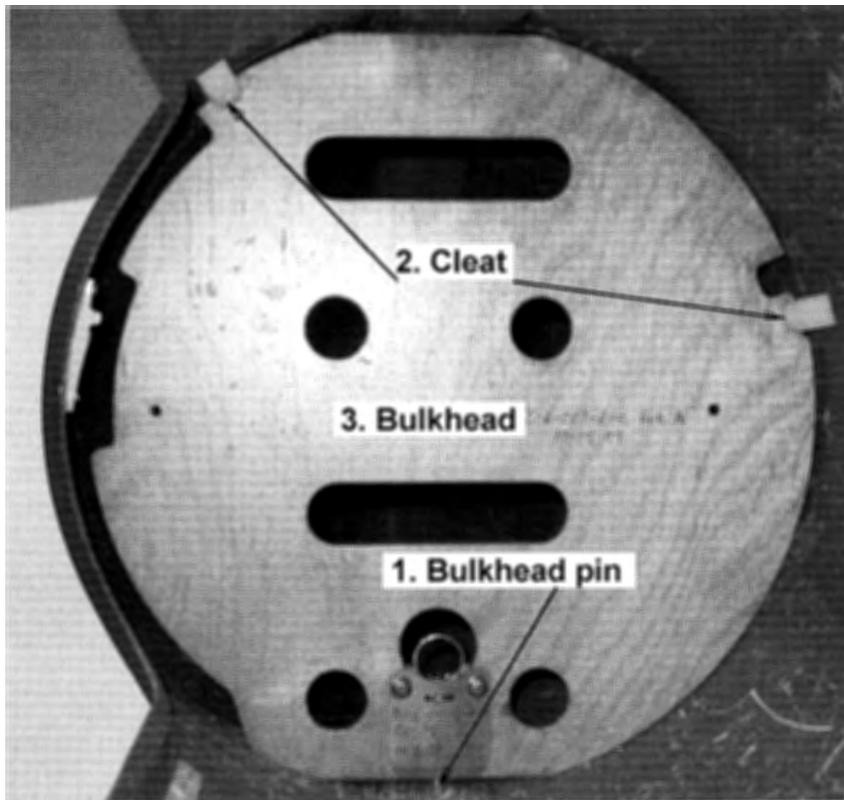


Figure 4 UWP bulkheads

- a. Release the bulkhead pin (item 1 Figure 4)
- b. Rotate the bulkhead so that it is free from the cleats (item 2 Figure 4)
- c. Remove bulkhead (item 3 Figure 4)

To install:

- a. Position the bulkhead (item 3 Figure 4) in the cleats (item 2 Figure 4)
- b. Rotate the bulkhead until the hole in the bottom of the pod aligns with the bulkhead pin (item 1 Figure 4)
- c. Release the bulkhead pin and ensure that it is positively engaged in the hole

#### 4.2 PREFLIGHT

Weight and balance ..... Calculated (see section 6)  
Right UWP ..... Ensure all three doors are latched  
Left UWP ..... Ensure all three doors are latched

AEROCET INC.  
PILATUS PORTER PC-6 UNDER WING CARGO POD  
FLIGHT MANUAL SUPPLEMENT

## SECTION 5 PERFORMANCE

### 5.1 TAKE OFF DISTANCES

The values shown in the AFM must be increased by 5%.

### 5.2 RATE OF CLIMB

The values shown in the AFM must be reduced by 15%.

### 5.3 STALL SPEED

| Flap setting | KIAS |
|--------------|------|
| 0° (UP)      | 56   |
| 28° (TO)     | 52   |
| 38° (LD)     | 52   |

### 5.4 BALKED LANDING

The values shown in the AFM must be reduced by 15%.

## SECTION 6 WEIGHT AND BALANCE

Insert the respective loads in . Arm measured from aircraft datum

1. Table 1

Multiply each load by its respective arm and note the moment in . Arm measured from aircraft datum

2. Table 1

Add the loads to calculate the total load in the left UWP and in the right UWP and note the results in . Arm measured from aircraft datum

3. Table 1. The load must not exceed 119 kg (262.5 lb) per UWP.

Add the moments to compute the total moment in the left UWP and in the right UWP and note the results in . Arm measured from aircraft datum

4. Table 1

5. Calculate the position of the resultant centre of gravity in each pod:

$$\text{C.G. position left UWP} = \frac{\text{Moment in left UWP}}{\text{Load in left UWP}}$$

$$\text{C.G. position right UWP} = \frac{\text{Moment in right UWP}}{\text{Load in right UWP}}$$

**AEROCET INC.  
PILATUS PORTER PC-6 UNDER WING CARGO POD  
FLIGHT MANUAL SUPPLEMENT**

The position of the C.G. of the load in each pod must lie within the CG envelope shown in Chart 1. . If not, redistribute the load.

**Add the loads in the left and right UWPs and note the results in .** Arm measured from aircraft datum

6. Table 1

**Add the moments in the left and right UWPs and note the results in .** Arm measured from aircraft datum

7. Table 1

**Divide the resultant moment by the resultant load to calculate the position of the centre of gravity. Note in .** Arm measured from aircraft datum

8. Table 1

$$\text{C.G. position both UWP} = \frac{\text{Moment in both UWPs}}{\text{Load in both UWPs}}$$

| <b>Left UWP</b>  | <b>Weight kg (lb)</b> | <b>Arm mm (in)*</b> | <b>Moment kg.mm (in.lb)</b> |
|--|-----------------------|---------------------|-----------------------------|
| Zone 1   |                       | 2462 (96.93)        |                             |
| Zone 2   |                       | 2999 (118.07)       |                             |
| Zone 3   |                       | 3705 (145.87)       |                             |
| Zone 4   |                       | 4359 (171.61)       |                             |
| Total in left UWP.<br>Do not exceed 119 kg (262.5 lb)  |                       |                     |                             |
| <b>Right UWP</b>                                       | <b>Weight kg (lb)</b> | <b>Arm mm (in)*</b> | <b>Moment kg.mm (in.lb)</b> |
| Zone 1   |                       | 2462 (96.93)        |                             |
| Zone 2   |                       | 2999 (118.07)       |                             |
| Zone 3   |                       | 3705 (145.87)       |                             |
| Zone 4   |                       | 4359 (171.61)       |                             |
| Total in right UWP.<br>Do not exceed 119 kg (262.5 lb) |                       |                     |                             |
| <b>BOTH PODS<br/>Do not exceed 272 kg (600.0 lb)</b>   | <b>Weight kg (lb)</b> | <b>Arm mm (in)*</b> | <b>Moment kg.mm (in.lb)</b> |
| <b>LEFT + RIGHT.</b>                                   |                       |                     |                             |
| <b>Empty pod</b>                                       | 34 (75)               | 3400 (133.86)       | 115,600 (10,040)            |
| <b>Total</b>   |                       |                     |                             |

\*Consult **Figure 5** to ensure CG is within limits. Arm measured from aircraft datum

**Table 1 Weight and balance loading form for UWP**

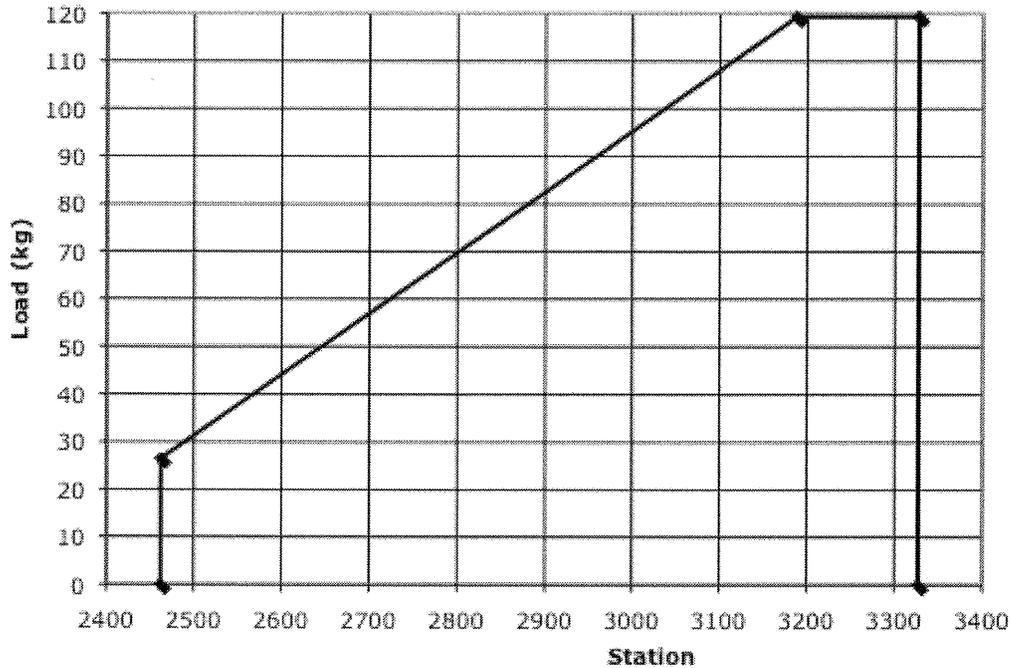
**AEROCET INC.  
PILATUS PORTER PC-6 UNDER WING CARGO POD  
FLIGHT MANUAL SUPPLEMENT**

Take the results from . Arm measured from aircraft datum

9. Table 1 and insert the weight and moment in the corresponding weight and balance chart in the AFM for the computation of the aircraft weight and balance

**NOTE:**

For the purposes of calculating zero fuel weight, the total weight in the UWP (i.e. weight of empty pod plus cargo) may be considered the same as fuel



**Figure 5 UWP Weight and Balance Chart**