AIRGLAS, INC.

DOCUMENT AE11-1FM Landplane

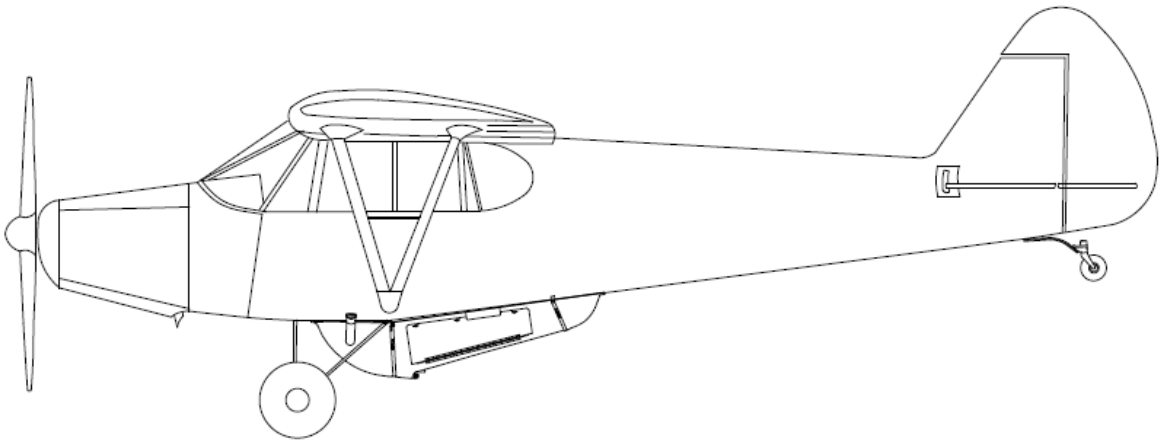
FAA-APPROVED AIRPLANE FLIGHT MANUAL SUPPLEMENT

For FS 2003 (Piper) PA-12 and FS 2002 (Piper) PA-14 with
LTC18-1214 Fuel/Cargo Pod Installed

Registration Number _____

Serial Number _____

This supplement must be attached to the DMCR Approved Airplane Flight Manual listed on page 2 of this supplement or later approved revision and must be carried in the airplane when the Airglas LTC18-1214 Fuel/Cargo Pod is installed in accordance with Airglas, Inc. STC SA02049AK. The information contained in this document supplements or supersedes the basic manual and applicable appendices only in those areas listed. For limitations, procedures, and performance information not contained in this supplement, consult the basic Airplane Flight Manual.



FAA Approved: _____
Manager, Anchorage Aircraft Certification Office
Anchorage, Alaska

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Date: _____

CAA (FAA) Approved Airplane Flight Manual, Piper Model PA-14, dated March 10, 1948, for Serial Nos. 14-1 to 14-489 and dated December 16, 1948, for Serial Nos. 14-490 and up.

CAA (FAA) Approved Airplane Flight Manuals for Piper Model PA-12 revised to include any statement required under "Propellers and Propeller Accessories" and/or Item 103, if applicable.
(a) Airplane Flight Manual dated March 24, 1947, or Piper Report No. 551 dated March 24, 1947 - includes Propeller Item 1 and O-235-C engine.
(b) Piper Report No. 570 dated April 15, 1947, includes Propeller Item 3 and O-235-C engine.
(c) Piper Report No. 565 dated June 13, 1947, includes Propeller Item 1 and Item 103.
(d) Piper Report No. 571 dated June 13, 1947, includes Propeller Item 3 and Item 103.

LOG OF REVISIONS

REV	Pages Affected	Description	FAA Approved	Date
Initial Release	1 - 8	Original		28 Oct. 2011
A	3-4	Added Vne placard, changed transfer to right tank		

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SECTION I. General

This airplane is equipped with an Airglas, Inc., LTC18-1214 combination Fuel/Cargo Pod and auxiliary fuel transfer system. The forward section of the pod is an auxiliary fuel tank with a capacity of 18 U.S. gallons. The aft section of the pod is a cargo compartment in which up to 159 lbs. of cargo may be carried. A fuel tight bulkhead separates the two sections and forms the aft wall of the fuel tank. The bulkhead is reinforced with UHMW plastic to reduce the likelihood of foreign object penetration. The LTC18-1214 pod is belly-mounted to the fuselage aft of the main landing gear using stainless steel clamps, brackets, and straps. The auxiliary fuel transfer system, consisting of an electric fuel pump, associated electrical components, and fuel lines, is mounted in the cabin. The pod extends approximately 17 inches below the bolts which attach the main landing to the fuselage, and it reduces the airplane's ground clearance accordingly. The actual minimum ground clearance of the pod will vary with tire type and inflation pressure, airplane loading, and ground roughness. **Use Caution when selecting a landing site as ground clearance is reduced.**

WARNING

The reinforced bulkhead is not designed to resist the effects of detonating explosives, bullets discharged from loaded firearms, or other high-energy impacts. Exercise extreme caution when selecting items to be carried in the cargo compartment.

SECTION II. Limitations

1. The Never Exceed Speed (V_{ne}) with the pod installed is 138 MPH IAS (red radial line on airspeed indicator).

2. The range of speed in which operations should be conducted with caution and only in smooth air extends from 110 MPH to 138 MPH IAS with the pod installed (yellow arc on airspeed indicator).

3. The Maximum Cruising Speed (V_{no}) with the pod installed is 110 MPH IAS (upper end of green arc on airspeed indicator).

4. The maximum weight that can be carried in the cargo compartment of the pod is limited to 159 lbs.

5. 1/2 gallon of the fuel carried in the auxiliary tank is unusable.

6. The left wing tank must be selected before fuel is transferred from the auxiliary tank to the right wing tank. Transfer fuel in level flight only.

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SECTION II. Limitations (Continued)

7. This airplane must be operated in the Normal Category only with the pod installed. All Utility Category limitations are deleted.

8. **Placards** : The following placards are added:

51 lbs. Max. Baggage with full pod fuel. Total combined pod fuel and baggage must not exceed 159 lbs.

Located on the side door of the Fuel/Cargo Pod.

51 lbs. Max. Baggage with full pod fuel. Total combined pod fuel and baggage must not exceed 159 lbs. -WARNING- FLIGHT NOT PERMITTED WITH DOOR OPEN

Located on the aft door of the Fuel/Cargo Pod.

80/87 Octane Minimum Aviation Gasoline (18 gallons capacity)

Located adjacent to the filler spout of the Fuel/Cargo Pod.

AUX FUEL TRANSFER ON

Adjacent to Auxiliary Fuel Annunciator Light

ON OFF

AUX FUEL (17.5 gallons useable)

Adjacent to Auxiliary Fuel Switch

ONLY NORMAL CATEGORY OPERATIONS APPROVED WITH AIRGLAS POD INSTALLED **SPINS ARE PROHIBITED**

Located on instrument panel in full view of the pilot.

DO NOT EXCEED **138 MPH IAS** WITH AIRGLAS POD INSTALLED

Place Airspeed Limitation Placard on instrument panel adjacent to airspeed indicator.

SECTION III. Emergency Procedures

1. TOTAL ELECTRICAL FAILURE

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SECTION III. Emergency Procedures (Continued)

WARNING

In the event of total electrical failure it is not possible to transfer fuel from the auxiliary belly tank to the left wing tank. All fuel remaining in the AUX tank is unusable. Consideration should be given to diverting to an alternate airport within range of the fuel remaining in the wing tanks.

2. AUX FUEL ANNUNCIATOR OFF WITH AUX FUEL SWITCH ON or NO FUEL TRANSFER (indicated by left wing tank fuel quantity not increasing)

   A. Annunciator Light - Press to Test

   B. Aux Fuel Pump Circuit Breaker -- Reset (one time only)

WARNING

If the auxiliary fuel pump is inoperative it is not possible to transfer fuel from the auxiliary tank to the right wing tank. All fuel remaining in the AUX tank is unusable. Consideration should be given to diverting to an alternate airport within range of the fuel remaining in the wing tanks.

SECTION IV. Normal Procedures

1. PREFLIGHT INSPECTION

   A. (Right Side) Attaching Hardware/Straps -- Secure
   B. Auxiliary Fuel/Cargo Pod Drain -- Check for water and contaminants
   C. Fuel/Cargo Pod Doors -- Hinge secure and doors closed and latched
   D. Auxiliary Fuel/Cargo Pod -- No leaks
   E. Auxiliary Fuel Quantity -- Visually Check
   F. Auxiliary Fuel/Cargo Pod Filler Neck Cap -- Secure
   G. Fuel Vent -- Closed.
   H. (Left Side) Attaching Hardware/Straps -- Secure

2. COCKPIT/CABIN PREPARATION

   A. Aux Fuel Switch -- OFF. Amber Light -- OFF.

3. CRUISE

   A. Fuel Transfer - As required (when right tank is 1/2 full or less preferred)

      (1) Airplane Flight Attitude -- Straight and Level

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Date: _____

SECTION IV. Normal Procedures (Continued)

(2) Left Wing Tank Fuel Quantity Indicator -- Check and verify that usable fuel quantity present in left wing tank is sufficient to run engine for entire duration of fuel transfer operation.

(3) Airplane Fuel Selector Valve -- Left

(4) Aux Fuel Switch -- ON. Amber Light -- ON

(5) Right Wing Tank Fuel Quantity Indicator -- Monitor at intervals not to exceed 5 minutes. As fuel quantity in right wing tank approaches 7/8 full, stop transfer.

(6) Aux Fuel Switch -- OFF. Amber Light -- OFF

(7) Airplane Fuel Selector Valve -- LEFT or RIGHT as desired, if any usable fuel remains in left tank. Right if no usable fuel remains in left tank.

WARNING

The auxiliary fuel transfer system has no provisions for automatically shutting off the auxiliary fuel transfer pump to prevent overflow or rupture of the right wing fuel tank. When transferring fuel, the pilot must monitor the fuel quantity in the right wing tank at intervals not to exceed 5 minutes to prevent it from being overfilled and consequently overflowing or rupturing. As the fuel quantity in the left wing tank approaches 7/8 full, turn Aux Fuel switch to OFF to stop transfer.

4. APPROACH

A. Aux Fuel Switch -- OFF. Amber Light -- OFF.

5. LANDING

A. The landing site should be free of large rocks or other obstacles.

WARNING

Be aware of the reduced clearance beneath Fuel/Cargo Pod. Collision with obstacles may rupture the fuel tank and result in fire. Exercise extreme caution when selecting off-airport landing sites.

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SECTION V. Performance Information

1. CLIMB Climb performance is unaffected by this modification.

2. CRUISE Cruise performance is unchanged by this modification.

SECTION VI. Weight and Balance/Equipment List

The equipment added to this airplane by this modification consists of the LTC18-1214 and an auxiliary fuel transfer system. Because the weight of the pod varies slightly from one production article to another, the empty weight of a complete installation weight is 37 lbs. ±1 lbs. at an arm of 35.75 inches. See the airplane's current weight and balance report for exact weight and balance information. The arm of the fuel in the auxiliary fuel tank is 21.5 inches. The arm of the center of the cargo compartment is 54.5 inches, but the arm of the cargo carried in the compartment may be as far forward as 31.25 inches or as far aft as 75.75 inches depending on the weights and locations of the individual items carried. The actual arm of the pod cargo must be determined when computing the airplane's weight and balance for each flight on which pod cargo is to be carried.

Aircraft	Pod Model	Datum Location	Pod Installation Arm and Weight	Plumbing Installation Arm and Weight	Pod Full Fuel Arm and Weight	Cargo Arm
FS 2003 (Piper): PA-12, PA-12S FS 2002 (Piper): PA-14	**LTC18-1214**	**Wing Leading Edge**	**37 lbs. +/- 1 lbs. @ +35.75"**	**3.1 lbs. @ +31"**	**108 lbs. @ +21.5"**	**Centered @ +54.5 Ranges from +31.25 to +75.75**

SECTION VII. Systems Descriptions

This airplane is equipped with an Airglas, Inc., LTC18-1214 combination Fuel/Cargo Pod and auxiliary fuel transfer system. The forward section of the pod is an auxiliary fuel tank with a capacity of 18 U.S. gallons, of which 17.5 gallons is usable. The aft section of the pod is a cargo compartment in which up to 159 lbs. of cargo may be carried. The pod is belly-mounted to the fuselage aft of the main landing gear using stainless steel clamps, brackets, and straps. The auxiliary fuel transfer system consists of an electric fuel pump and associated fuel transfer line which pumps fuel from the auxiliary fuel tank into the right wing tank. There is a one way check valve to prevent reverse transfer of fuel from the wing tank to the pod tank. The pump is mounted under the rear seat and is controlled by a switch on the instrument panel. Both the switch and the pump are protected by a 2-amp circuit breaker mounted on the circuit breaker panel. During normal operation the pump can transfer fuel at the rate of approximately 0.367 gallons per minute, or one gallon in approximately 2 minutes and

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SECTION VII. Systems Descriptions (Continued)

44 seconds.

WARNING

The auxiliary fuel transfer system has no provisions for automatically shutting off the auxiliary fuel transfer pump to prevent overflow or rupture of the right wing fuel tank. When transferring fuel, the pilot must monitor the fuel quantity in the right wing tank at intervals not to exceed 5 minutes to prevent it from being overfilled and consequently overflowing or rupturing. As the fuel quantity in the left wing tank approaches 7/8 full, turn Aux. Fuel switch to OFF to stop transfer. An amber annunciator light advises that the Aux. fuel pump switch is in the ON position and is energized. The circuit breaker protects the pump and its switch circuit against overload and short circuits.

CAUTION

The amber annunciator light indicates only that a fuel transfer is being attempted. The pilot must monitor the fuel quantity in the right wing tank to verify fuel transfer.

SECTION VIII. Handling, Servicing and Maintenance

All handling procedures for this modification are standard. The LTC18-1214 Fuel/Cargo Pod and auxiliary fuel transfer system must be maintained in accordance with Part 43 of the Federal Aviation Regulations (14 CFR 43). Service and maintain in accordance with Airglas Inc. Document No: LC18/LTC18-105, original issue dated 29 July 2011 or later FAA-approved revision, to insure the continued airworthiness of this modification. Information on removing and re-installing the LTC18 & LTC18WB Fuel/Cargo Pod and auxiliary fuel transfer system and information on testing the auxiliary fuel transfer system for proper operation can be found in Airglas Inc. Document No. LC18/LTC18-105.

END

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