

Airglas Engineering Co., Inc.

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DOCUMENT AE97-1FM

FAA APPROVED AIRPLANE FLIGHT MANUAL SUPPLEMENT
FOR PIPER MODELS

PA-18 "125", PA-18 "135", PA-18 "150"

PA-18S "125", PA-18S "135", PA-18S "150"

PA-18A, PA-18A "135", PA-18A "150"

PA-18AS "125", PA-18AS "135", PA-18AS "150"

EQUIPPED WITH AN

AIRGLAS LT32PA-18 BELLY TANK AND AUXILIARY FUEL TRANSFER SYSTEM

Registration Number _____

Serial Number _____

This supplement must be attached to the appropriate CAA or DMCR Approved Airplane Flight Manual listed on page 2 and must be carried in the airplane when the Airglas LT32PA-18 Belly Tank & Auxiliary Fuel Transfer System is installed in accordance with STC SA02068AK. 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: _____

A handwritten signature in black ink, appearing to read "L. K. D. L.", is written over a horizontal line.

Manager, Anchorage Aircraft Certification Office
Federal Aviation Administration
Anchorage, Alaska

Date: _____

1/17/97

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**Approved Airplane Flight Manuals for Various Models of
Piper PA-18 Series Airplanes**

No.	Approved Flight Manual (or later approved revision)
1	CAA Approved Flight Manual approved October 20, 1950, for landplanes equipped with Lycoming O-290-D engine.
2	DMCR Approved Airplane Flight Manual dated April 25, 1952, for landplanes or skiplane equipped with Lycoming O-290-D2 engine.
3	DMCR Approved Airplane Flight Manual approved April 1, 1953, for seaplanes equipped with Lycoming O-290-D2 engine and Edo Model 89-2000 floats.
4	DMCR Approved Flight Manual approved July 1, 1953, for seaplanes equipped with Lycoming O-290-D engine and Edo Model 89-2000 floats.
5	DMCR Approved Flight Manual approved October 1, 1954, revised September 28, 1976, for landplanes or skiplanes equipped with Lycoming O-320 engine.
6	DMCR Approved Flight Manual approved October 1, 1954, for seaplanes equipped with Lycoming O-320 engine and Edo Model 89-2000 floats.

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LOG OF REVISIONS

Revision No.	Pages Affected	Description	FAA Approved	Date
Original	1 - 8	-	M. K. DAHL	JAN. 17, 1997

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SECTION 1. General

This airplane is equipped with an Airglas Engineering Company, Inc., LT32PA-18 Belly Tank and auxiliary fuel transfer system. The auxiliary fuel tank has a capacity of 32 U.S. gallons. The LT32PA-18 tank 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 belly tank is approximately even with the bolts which attach the main landing gear shock struts to the cabane vee assembly, and it reduces the airplane's ground clearance accordingly. The actual minimum ground clearance of the belly tank will vary with tire type and inflation pressure, airplane loading, and ground roughness.

SECTION II. Limitations

1. 1/2 gallon of the fuel carried in the auxiliary belly tank is unusable.
2. The right wing tank must be selected before fuel is transferred from the auxiliary belly tank to the left wing tank. Transfer fuel in level flight only.
3. This airplane must be operated in the Normal Category only with the belly tank installed. All Utility Category limitations are deleted.

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SECTION III. Emergency Procedures

1. TOTAL ELECTRICAL FAILURE

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 belly 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 belly tank to the left wing tank. All fuel remaining in the belly 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 Belly Tank Drain -- Check for water and contaminants
- C. (Left Side) Attaching Hardware/Straps -- Secure
- D. Auxiliary Fuel Belly Tank -- No leaks
- E. Auxiliary Fuel Quantity -- Visually Check
- F. Auxiliary Fuel Belly Tank Filler Neck Cap -- Secure
- G. Ensure that aircraft will not exceed its maximum gross weight with a fuel load in the auxiliary tank.

2. COCKPIT/CABIN PREPARATION

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

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SECTION IV. Normal Procedures (Continued)

3. CRUISE

- A. Fuel Transfer - As required (when left tank is 1/2 full or less preferred)
- (1) Airplane Flight Attitude -- Straight and level
 - (2) Right Wing Tank Fuel Quantity Indicator -- Check and verify that usable fuel quantity present in right wing tank is sufficient to run engine for entire duration of fuel transfer operation.
 - (3) Airplane Fuel Selector Valve -- RIGHT
 - (4) Aux Fuel Switch -- ON. Amber Light -- ON
 - (5) Left Wing Tank Fuel Quantity Indicator -- Monitor at intervals not to exceed 5 minutes. As fuel quantity in left 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 right wing tank. LEFT if no usable fuel remains in right wing 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 left wing fuel tank. When transferring fuel, the pilot must monitor the fuel quantity in the left 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. The ground clearance of the airplane with the belly tank installed is approximately 3.5 inches less than the ground clearance of the bolts which attach the main landing gear shock struts to the cabane vee assembly.

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SECTION IV. Normal Procedures (Continued)

WARNING

Collision with obstacles may rupture the fuel tank and cause fire. Exercise extreme caution when selecting off-airport landing sites.

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 LT32PA-18 Belly Tank and an auxiliary fuel transfer system. Because the weight of the belly tank varies slightly from one production article to another, the empty weight of a complete installation may vary from 31 pounds to 32 pounds at an arm of 33.9 inches (aft of the wing leading edge). See the airplane's current weight and balance report for exact weight and balance information.

SECTION VII. Systems Descriptions

This airplane is equipped with an Airglas Engineering Company, Inc., LT32PA-18 Belly Tank and auxiliary fuel transfer system. The belly tank has a capacity of 32 U.S. gallons, of which 31.5 gallons is usable. The tank 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 belly tank into the left wing 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 in the cabin inboard of the right wing root. During normal operation the pump can transfer fuel at the rate of approximately 0.367 gallon per minute, or one gallon in approximately 2 minutes and 44 seconds.

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SECTION VII. Systems Descriptions (Continued)

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 left wing fuel tank. When transferring fuel, the pilot must monitor the fuel quantity in the left 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 left wing tank to verify fuel transfer.

SECTION VIII. Handling, Servicing and Maintenance

All handling procedures for this modification are standard. The LT32PA-18 Belly Tank and auxiliary fuel transfer system may be serviced and maintained in accordance with Part 43 of the Federal Aviation Regulations (FAR 43). Servicing and maintenance in accordance with FAR 43 is adequate to insure the continued airworthiness of this modification. Information on installing the LT32PA-18 Belly Tank and auxiliary fuel transfer system and information on testing the auxiliary fuel transfer system for proper operation can be found in the Installation Manual for Airglas LT32PA-18 Belly Tank, Airglas Manual No. LT32-105, dated November 13, 1996, or later FAA approved revision. The installation information in Manual No. LT32-105 is also useful when removing the belly tank and/or the auxiliary fuel transfer system for servicing, maintenance, or repair.

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