

## **SECTION V - MANUFACTURER'S DATA (NON FAA APPROVED DATA)**

### **MANUFACTURER'S DATA SECTION**

**OF**

### **ROTORCRAFT FLIGHT MANUAL SUPPLEMENT**

**TO THE**

### **SIKORSKY S-76A, B, C and D ROTORCRAFT FLIGHT MANUAL**

Aircraft Serial Number: \_\_\_\_\_

Aircraft Registration Number: \_\_\_\_\_

This supplement must be attached to the rotorcraft flight manual, manufacturer's data section when the aircraft is modified by the installation of Helifab's auxiliary fuel tank in accordance with supplemental type certificate number SR00763DE

The information contained herein supplements or supersedes the basic flight manual only in those areas contained herein. For limitations, procedures, and performance information not contained in this supplement, consult the basic rotorcraft flight manual.

**SECTION V - MANUFACTURE'S DATA (NON FAA APPROVED DATA)**

**LOG OF REVISIONS**

REV	PAGE		DESCRIPTION
	NO.	DATE	
0	1	09/17/2013	Initial Release of manufacturer's data section of FMS for Helifab auxiliary fuel tank installation.
	2	09/17/2013	
	3	09/17/2013	
	4	09/17/2013	
	5	09/17/2013	
	6	09/17/2013	
1	1 thru 6	12/30/2014	Added S-76D model

NOTES:

- 1) Revised text is indicated by a black vertical line in the right hand margin in line with the text.

## SECTION V - MANUFACTURE'S DATA (NON FAA APPROVED DATA)

### TABLE OF CONTENTS

SECTION I: SYSTEM DESCRIPTION .....	3
INTRODUCTION .....	3
GENERAL .....	3
SECTION II: LOADING INFORMATION.....	5
LOADING INSTRUCTIONS / WEIGHT AND BALANCE DATA .....	5

## SECTION I: SYSTEM DESCRIPTION

### INTRODUCTION

This section of the flight manual supplement provides loading information necessary for calculation of rotorcraft CG when Helifab, Inc. auxiliary fuel tank is installed.

### GENERAL

The auxiliary fuel tank installation installs in the baggage compartment and provides an additional 62 gallons of useable fuel. The tank uses a gravity feed system to transfer fuel from the auxiliary tank to the left and right hand main tanks. When transferring from the auxiliary tank to the main tank during level flight, a maximum of 1.1 gallons of unusable fuel will remain in the auxiliary tank.

An electric motor actuated ball valve controls the transfer of fuel from the auxiliary fuel tank. An annunciator/switch is located in the cockpit and provides control of the shutoff valve. Two mechanical float valves are installed in the main fuel tanks (one in the left hand and one in the right hand tank) to prevent overflow of the main tanks during fuel transfer from the auxiliary fuel tanks. Once the auxiliary fuel tank shutoff valve is opened, the float valves open and close automatically to allow fuel transfer from the auxiliary fuel tank while preventing main tank overfilling.

The aux fuel quantity indication is provided by a capacitor type probe installed in the auxiliary fuel tank mated to a 2" indicator in the cockpit.

## **SECTION V - MANUFACTURE'S DATA (NON FAA APPROVED DATA)**

The auxiliary fuel tank is filled by opening the left hand baggage compartment door in order to access the fuel filler cap. A manual sump valve for the auxiliary tank is located inside the valve compartment of the auxiliary tank and is accessed by opening the access door on the left hand side of the auxiliary fuel tank. A flexible tube is attached to the sump / drain valve that allows sumped fuel to be drained outside the rotorcraft.

The auxiliary tank installation is designed so that the auxiliary tank may be removed when not required while still keeping the fixed provisions installed.

**SECTION V - MANUFACTURE'S DATA (NON FAA APPROVED DATA)**

**SECTION II: LOADING INFORMATION**

**LOADING INSTRUCTIONS / WEIGHT AND BALANCE DATA**

Aircraft CG must be determined using the auxiliary fuel tank and fuel weights and must be within rotorcraft limits. When the auxiliary fuel tank is installed, a maximum of 70Lb of baggage may be carried in the baggage compartment. Baggage tiedown locations are provided on the aft side of the auxiliary fuel tank and all baggage must be secured in accordance with the rotorcraft basic flight manual.

Installation of the auxiliary fuel tank installation has the following effect on weight and balance:

**Table 1  
 Auxiliary Fuel Tank Installation Weights**

Item	Weight	STA ARM	Longitudinal Moment/100	Note
Auxiliary Fuel Tank Assembly (All models)	104.5	229	23930.5	(1)
Auxiliary Fuel Tank Provisions (S-76 A, B,C and D up to and including serial number 761036 only)	5.5	189	1039.5	(2)
Auxiliary Fuel Tank Provisions (S-76D serial number 761037 and subsequent only)	6.1	196	1195.6	(2)

Notes:

- (1) Auxiliary fuel tank assembly includes all components mechanically secured to the tank up to and including the hose quick release fittings. Also included is the weight of the honeycomb spacer board installed under the auxiliary tank assembly and unusable fuel.
- (2) The auxiliary fuel tank provisions include all other components of the installation that are not included in the auxiliary fuel tank assembly weight.

The new empty weight and corresponding CG location must be determined and entered in the aircraft permanent records.

**SECTION V - MANUFACTURE'S DATA (NON FAA APPROVED DATA)**

**Table 2  
 Auxiliary Fuel Tank, Useable Fuel Weights**

Weight (Lb)	ARM (in)	Moment /100	Notes
50	232.8	116	
100	232.4	232	
150	231.7	348	
200	231.3	463	
250	231.0	578	
300	230.7	693	
350	230.5	807	
400	230.4	922	
403 (JP-4)	230.3	929	(3)
415.4 (JP-8)	230.3	957	(4)
421.6 (JP-5)	230.3	971	(5)

Notes:

- (1) The auxiliary fuel quantity indicator is calibrated for JP-5 (Jet-A) fuel at 6.8 pounds per gallon under standard conditions (60°F).
- (2) The useable fuel capacity of the auxiliary fuel tank is 62 gallons.
- (3) Weight and moment of fuel for full auxiliary fuel tank using JP-4 (Jet B) fuel at 6.5 pounds per gallon under standard conditions (60°F)
- (4) Weight and moment of fuel for full auxiliary fuel tank using JP-8 (Jet A1) fuel at 6.7 pounds per gallon under standard conditions (60°F)
- (5) Weight and moment of fuel for full auxiliary fuel tank using JP-5 (Jet A) fuel at 6.8 pounds per gallon under standard conditions (60°F)