

# Chapter 06

## WEIGHT, BALANCE, AND EQUIPMENT LIST

Introduction .....	6-2
Aircraft Dimensional Data .....	6-3
Weight and Balance Record .....	6-4
Operating Weights and Loading .....	6-5
Empty Weight and CG Measurement While on Gear ...	6-5
Weight and Balance Determination for Flight .....	6-7
Installed Optional Equipment List .....	6-9

### 6.1 INTRODUCTION

This section describes the procedure and provides relevant reference information to determine the weight and balance of the ICON A5. Additionally, a discussion of the aircraft equipment list is included.

The A5 design places the cockpit forward of the flight center of gravity range. A change of occupant weight will therefore also change the CG location. It is possible to be outside the forward CG limit with a heavy total occupant weight and to be outside the aft CG limit with a light occupant. It is therefore imperative for all pilots to become familiar with the weight and balance of the specific aircraft they will fly, and their own specific loading condition. Specific details about weight, moment, and center of gravity for this airplane can be found accompanying this POH.

**WARNING:** *It is the responsibility of the pilot to make sure the airplane is loaded properly. Operation outside of the approved weight and balance limitations could result in an accident and serious or fatal injury.*

9. Other – Additional space for other items, if needed. Note that FS must be determined.
10. Totals – Total the weights and moments and determine CG Position (FS).
  - a. Transfer the weight total to the Total Weight box.
  - b. Calculate the CG Position (FS) by dividing Total Moment by Total Weight and enter into the box.
11. Verify that the weight and CG are within acceptable limits as depicted in. See Figure 6-2.

### 6.6.1 WEIGHT AND BALANCE LOADING FORM

	Position	Weight, Wt (lb <sub>f</sub> )	Arm, FS (in)	Moment M=Wt x Arm (lb <sub>f</sub> -in)
1.	Empty Weight (See Weight & Balance Record)			
2.	Pilot		128.5	
3.	Passenger		128.5	
4.	Usable Fuel		153.0	
5.	Baggage/Cargo		157.0	
6.	If Side Windows Removed & Deflectors Installed (Net)	-6.88		-882.1
7.	If Garmin 796 Will Be Used	1.7	109.7	186.5
8.	Other			
9.	Other			
10.	Totals:			

Total Weight (lb <sub>f</sub> ) <sup>1</sup>	CG Position – FS (in) <sup>2</sup>

1. Not to exceed 1510 lb<sub>f</sub>
2. See Weight and CG Envelope Limits

### 6.6.2 CG LIMITS AND STATION INFORMATION

#### Maximum Takeoff Weight (MTOW)

1510 lb<sub>f</sub>

#### Reference Datum

FS 154.75 (located on forward face of wing spar carry-through)

**Forward CG Limit**

FS 153.0

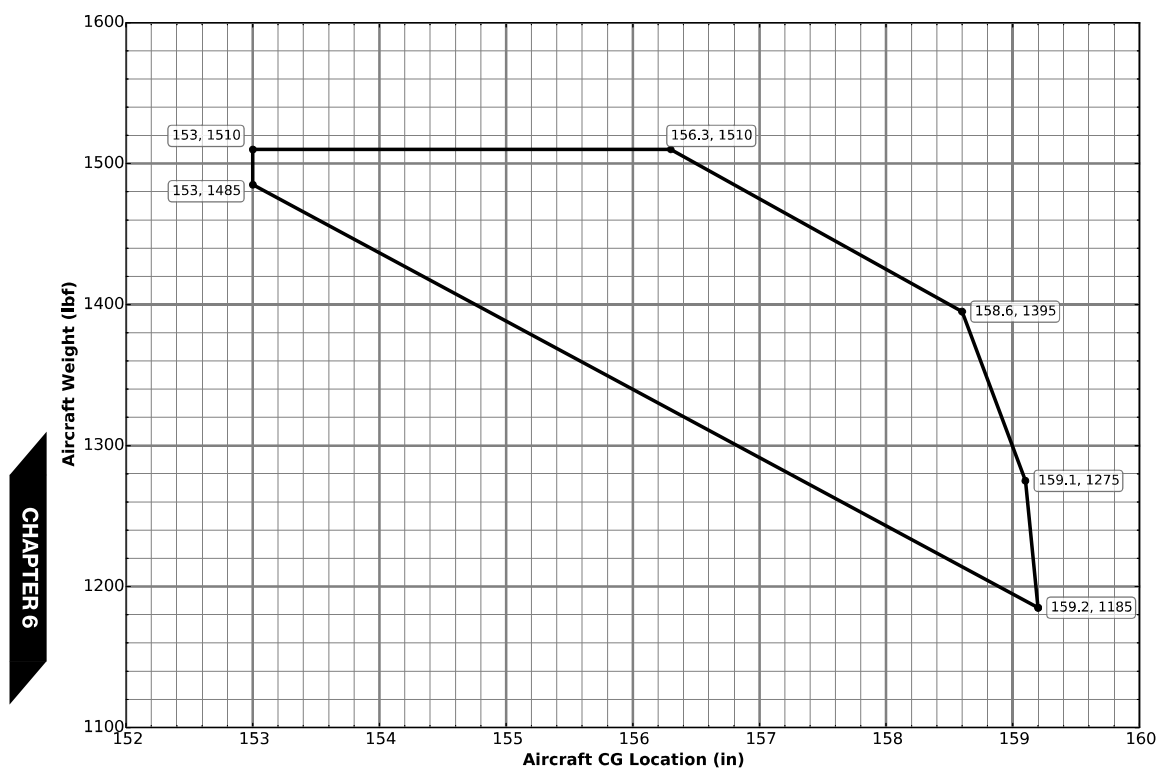
**Aft CG Limit**

FS 159.2

*NOTE: See the Weight and CG Envelope Limits figure for further details on the acceptable operating envelope.*

**6.6.3 CENTER OF GRAVITY LIMITS**

**FIGURE 6-2**  
WEIGHT AND CG ENVELOPE LIMITS

**6.7 INSTALLED OPTIONAL EQUIPMENT LIST**

At this time, the ICON A5 has no equipment options or maintenance procedures allowed that affect weight and balance. Any modifications to the aircraft equipment require the prior approval of ICON Aircraft. Should such work be necessary, ICON will supply any needed weight and balance information and instructions through

Accident flight weight and balance calculations by NTSB IIC.

<b>Icon A-5 W&amp;B</b>			
	<b><u>Weight</u></b>	<b><u>Arm</u></b>	<b><u>Moment</u></b>
Airplane	1087	163.8	178050.6
Left Seat	200	128.5	25700
Right Seat	190	128.5	24415
Fuel	84	153	12852
Baggage	11	157	1727
Garmin 796?	1.7	109.7	186.49
Doors Off	-6.88		-882.1
Totals	1566.82	154.4842	242049

Forward Limit:	153
Aft Limit:	159.2
Max Gross:	1510

Supplied to NTSB by PIC and stated to be the most recent weight and balance.

**TASK INSTRUCTIONS:**

1. Install three platform scales under the two main gear and nose gear.
2. Shim or block up the aircraft so that the bubble level beneath the right side floorboard indicates a level condition. (See "Cockpit Floor Board Removal" on page 3-46.)
3. Record the weight readings on the scales under the nose gear, main gear RH, and main gear LH.
4. Complete the Empty Weight and CG Calculation Form and perform the calculations to obtain the total empty weight and CG position.

**VERIFICATION METHOD:**

Fill out blank cells in table below.

Scale Position	Weight, Wt (lb <sub>f</sub> )	Arm, FS (in)	Moment, M=Wt x Arm (lb <sub>f</sub> -in)
Nose Gear	145	84.5	12,252.5
Right Main Gear	485	176.0	85,360.0
Left Main Gear	457	176.0	80,432.0
Total	1087	163.8	178,044.5

Total Weight (lb <sub>f</sub> )	CG Position – FS (in)
1087	163.8

Calculate the FS location of the CG by dividing the total moment by the total weight.

Total Wt (from above)= \_\_\_\_ lbs

Aircraft CG Location, FS (Total M/Total Wt)= \_\_\_\_ in

Verify that the above readings and calculations make sense by comparing them with the Pilot's Operating Handbook records. Enter the new weight and balance information as a new baseline in the POH.

ZEROED BEFORE  
WEIGHED  
SCALES READ ZERO UNLOADED AFTER  
TAKING READINGS

DELIVERY W&B	1077	163.4	176204
1-22-2019	1087	163.8	178044.5