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Inspection Service

Service d'Inspection

Weight and Balance report

for C-_____

Aircraft Manufacturer (builder)_____

Owner address_____

Aircraft model _____ serial number_____

Weighing Point	Scale reading	Tare	Net Wt	Arm	Moment
Right					
Left					
Nose or Tail					
		Total Wt		Total Moment	

Date_____and place_____of weighing

Levelling reference used_____Datum_____

Weighing results:

Total moment_____divided by the Total weight of the aircraft_____

equals the empty Centre of Gravity of the aircraft_____ in inches to the datum.

Loaded centre of gravity operating range; forward_____rearward_____

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Weight and Balance report for C-_____

Operational additional weights and arm:

Seats — Front left	lb., arm	
Front right	lb., arm	
Rear left	lb., arm	
Rear right	lb., arm	
Fuel, location 1	lb., arm	
Fuel, location 2	lb., arm	
Baggage, location 1	lb., arm	
Baggage, location 2	lb., arm	
Oil capacity (note)	lb., arm	(included in empty weight)
Total additional weights	lb.	(do not include the oil weight in this total)
Plus empty weight	lb. equals aircraft gross weight	lb.

Equipment items included in the empty weight: see equipment list, appendix 1, page 2

I certify that these data have been prepared in accordance with AC43.13. 1 B and to the best of my knowledge represent the true empty weight and centre of gravity of this aircraft.

Date_____ Signature_____

Weight and Balance report for C-_____

Examples of aircraft loading, while keeping within the loading envelope.

Loaded centre of gravity (C.G.) limits: forward _____ rearward_____

1/ loading condition that results in most forward centre of gravity

Item	Weight, pounds	Arm, inches	Moment
Aircraft empty			
Pilot			
Passenger, front right			
Passenger Rear Left			
Passenger, Rear Right			
Fuel, location 1			
Fuel, location 2			
Baggage, location 1			
Baggage, location 2			
Total weight		Total moment	

Total moment_____ divided by Total weight_____ = C.G._____

2/ loading condition that results in most rearward centre of gravity

tern	Veight, pounds	Aria, inches	Moment
Aircraft empty			
Pilot			
Passenger, front right			
Passenger, rear left			
Passenger, rear right			
Fuel, location 1			
Fuel, location 2			
Baggage, location 1			
Baggage, location 2			
Total weight		Total moment	

Total moment_____divided by Total weight_____= C.G._____

3/ loading condition that results in the gross weight

Item	Weight, Pounds	Arm, Inches	Mornent
Aircraft Empty			
Pilot			
Passenger Front Right			
PassengerRear left			
Passenger Rear Right			
Fuel, location 1			
Fuel, location 2			
Baggage, location 1			
Baggage, location 2			
Total weight		Total moment	

Total moment_____divided by Total weight_____ = C.G._____

Date_____ Signature_____

Weight and Balance report for C-_____

Appendix 1, Equipment items included in the empty weight

Item	Weight	Arm	moment
First aid kit			
Fire extinguisher			
Radio			
ELT			
Communication			
Transponder			
Encoder			
GPS			
Instruments			
Compass			
ASI			
Altimeter			
Turn			
ROC			
Horizon			
DG			
Clock			
G meter			
Tachometer			
Oil Pressure			
Oil Temperature			
CHT			
EGT			
Voltmeter			
Ammeter			
Fuel gauge			
Fuel pressure			

Date_____ Signature_____

Instructions to fill out the Weight and Balance form:

Preparing the aircraft;

1! Drain the fuel, (leave the residual fuel in), fill the engine oil tank.

2/ Check that all required equipment is in its correct location; ELT, first aid kit etc.

3/ Remove any unnecessary articles - the aircraft should be clean and dry.

.Weighing the aircraft;

1/ The aircraft should be in a building, out of the wind.

2/ Place the aircraft on the scales, it should be levelled side to side and lengthwise using the designer's reference points. Record the scale readings.

3/ Drop a plumb bob from the datum, mark the floor. Record the distance from the datum to the main wheels and the distance from the datum to the nose or tail wheel.

4/ Record the distance from the datum to; the engine oil tank, each seat, baggage area, fuel tanks and ballast location.

51 Remove the aircraft from the scales, weigh and record each tare (wheel blocks, 2x4 to lift the **tail,** anything that was weighed with the aircraft that is not part of the aircraft).

Filling out the form:

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1/ Levelling reference used, enter the longitudinal structural reference you used.

2/Enter the three scale readings, enter and subtract the tare from each scale reading resulting in three calculated net weights.

3/ Enter the arms (distance in inches from datum to wheels). Multiply the net weight by the arm to calculate the moment, enter it on the form.

4/ Add all three net weights to get the total weight, enter it on the form.

51 Add all three moments to get the total moment, enter it on the form.

6/ The total moment divided by the total empty weight equals the empty center of gravity in inches from the datum, enter it on the form.

7/ Additional weights and arm: Fill this out so that including the empty weight it adds up to the gross weight. Note; the oil is already included in the empty weight.

Appendix 1, Equipment list shows what is installed in the aircraft so that if you change anything on this list you can update your empty weight by calculation.

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1/ There are many different configurations of aircraft, it may have the fuel, seats or baggage ahead or behind the center of gravity. Loading conditions 1 and 2 should be calculated keeping in mind the location of these variables so that the calculation results in the most forward (1) or the most rearward (2) while keeping within the loading envelope.
In forward example (1), the load is heavy ahead of CG, behind load is light.
In rearward example (2), the load is light ahead of CG, behind load is heavy.
2/ Loading condition 3 shows the aircraft loaded to its gross weight. Be sure to use the same gross weight as on the Application for C of A. Check that the center- of gravity stays within limits when the fuel is removed, this is for your information only.

Notes;
1/ Check the three scales for accuracy before weighing.
2/ Read and understand the Weight and Balance section of AC 43.13
3/ Do not use a datum that could be changed later such as the spinner tip or wheels.
4/ Keep a copy of the Weight and Balance report in your journey log book.