

WEIGHT AND BALANCE WORKSHEETS

Experimental CH 640

EMPTY WEIGHT AND CENTER OF GRAVITY (C.G.)

A/C Registration # _____

DATE: _____ SIGNATURE: _____

The empty weight and C.G. location are calculated using the following table, where

N = Weight under Nose Wheel

R and L = Weight under Right and Left Wheels

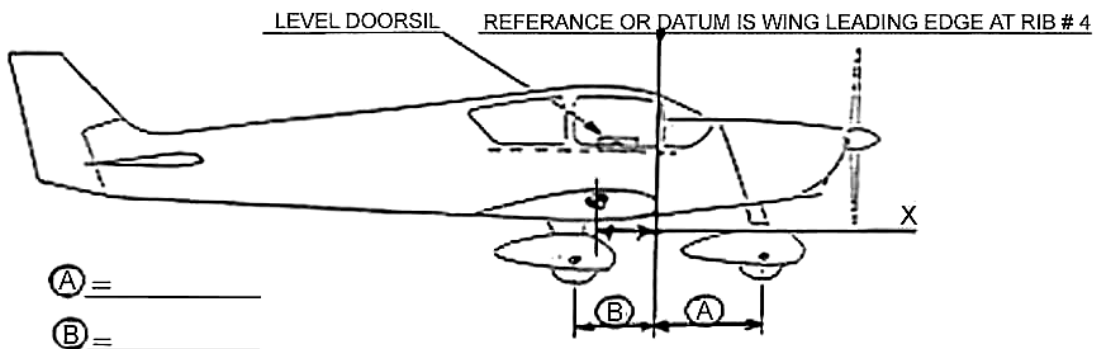
W = Empty Weight

(A) and (B) = Horizontal distance from datum to Nose and Main wheels; with a plumb line project datum and wheel axels to the floor, then measure dimension (A) and (B)

X = Moment arm (C.G. location rear of datum).

| | SCALE READING | DEDUCT TARE | NET WEIGHT |
|---|---------------|---|---|
| NOSE WHEEL | | - | N= ① |
| RIGHT MAIN | | - | R= ② |
| LEFT MAIN | | - | L= ③ |
| TOTAL MAIN | ----- | R + L = | ④=②+③ |
| EMPTY WEIGHT | ----- | W = R + L + N = | ⑤=④+① |
| ----- | | (B) x (R+L) = | ⑥= B x ④ |
| ----- | | (A) x N = - | ⑦= -A x ① |
| EMPTY CENTRE OF GRAVITY LOCATION | | $X = \frac{B(R+L) - AN}{W}$ | ⑧= $\frac{⑥+⑦}{⑤}$ |

- With the airplane level, record the weight shown on each scale. Deduct the tare, if any, from each reading.

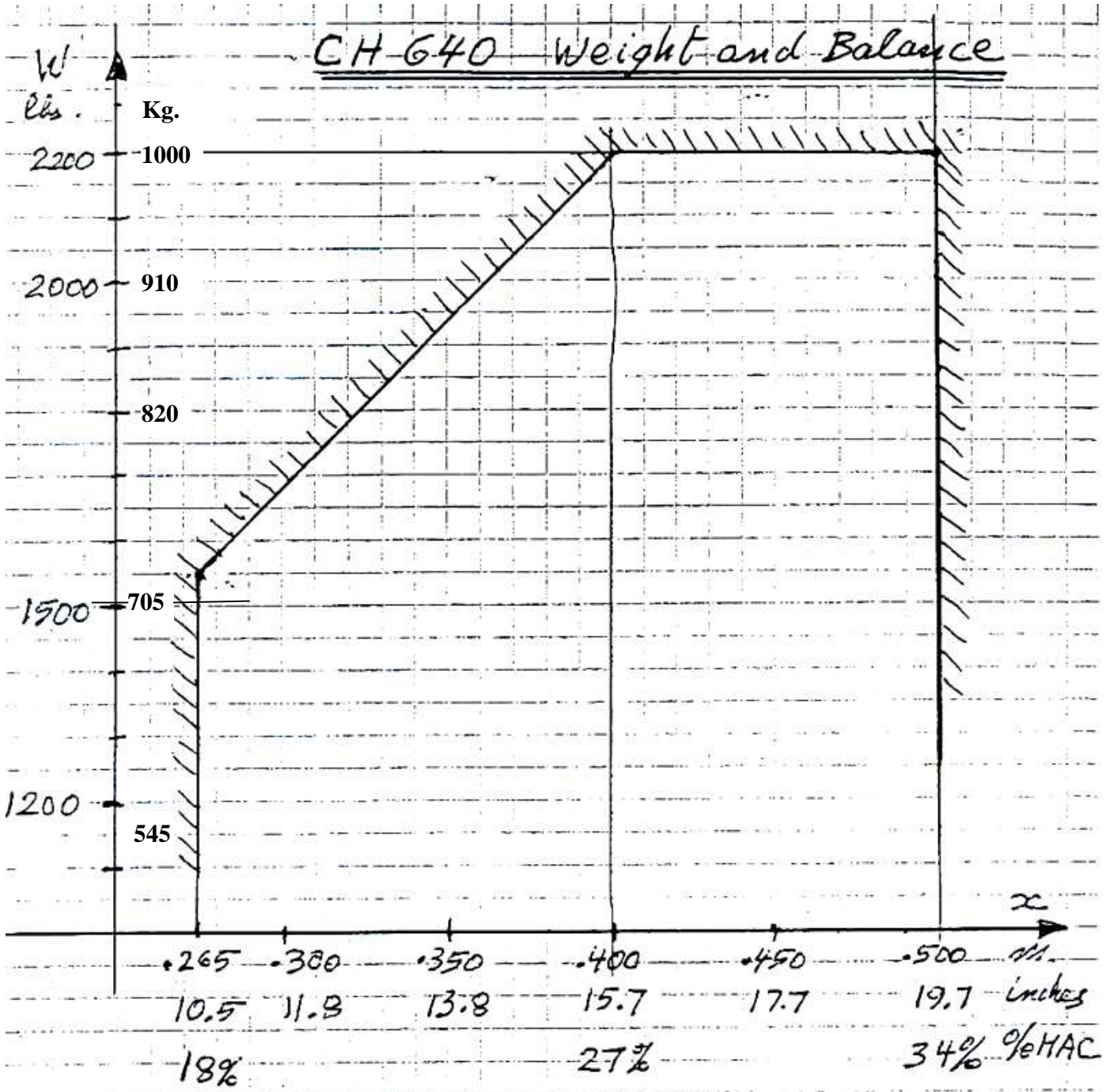


- "X" in the above chart corresponds to the position of the C.G. for the empty weight of the aircraft.

EMPTY WEIGHT AND CENTER OF GRAVITY (C.G.)

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WEIGHT AND CENTER OF GRAVITY (C.G.)

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Before each flight, the weight and balance of the loaded airplane should be calculated and checked to fit inside the approved limits.

- 1) Obtain the empty weight (kg.) and C.G. position
- 2) Measure positions in meters and weights in kilograms
- 3) Calculate "X" and enter into Weight & Balance Chart on page 2.

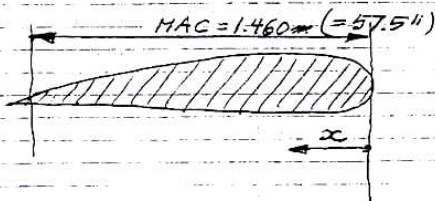
Enter all the applicable values into the appropriate blocks below and perform the necessary calculations.

| | Weight lbs | Position inches | Moment lbs.inches |
|---|---------------|--------------------|----------------------|
| 1) Empty (page 1 of 3) | | | |
| 2) Fuel | | | |
| 3) Occupant(s) Front | | | |
| 4) Occupant(s) and/or baggage on rear seat | | | |
| 5) Baggage Rear of Seats | | | |
| Total (add the columns) | W= | | M= |

Loaded Aircraft weight is $W = \text{_____}$ (kg)

Loaded C.G. position is $X = M/W = \text{_____}$ = (X in meters (m))

Check that both W and X fall within the limits in Weight & Balance Chart on page 2 of 3.



$x_{\text{Front seats}} =$

$x_{\text{Rear seat}} =$

$x_{\text{fuel}} = 0.27 \text{ m}$

Fuel = $2 \times 72 \text{ l} = 2 \times 19 \text{ gal} = 230 \text{ lbs} = 104 \text{ kg}$.

$x_{\text{Rear baggage}} =$

Mark: 1/01 CH

Note that x Front seat and x rear seat are to be determined by weighing by customer / pilot.

Check your fuel tank sizes. They may be different than the 19 gallons shown here.

When a rear baggage compartment is installed (now standard in most CH 640), add x rear baggage to the list at right.