Mass and Balance Calculation for Aircraft – Isaac Physics Training Aeroplane IP120

Fuel requirement

Duration of flight (hr)	Safety margin (hr)	Total time (hr)		Fuel volume (L)*		Fuel mass (kg)
	+ 0.75 =		× 25 L/hr =		× 0.70 kg/L =	

* Maximum fuel 140L

Mass and Balance

	Mass (kg)		Position (m)		Moment of mass (kg m)	Centre of mass (m) $= \frac{Total\ moment\ of\ mass}{Total\ mass}$ =_____ m
Empty aircraft	610	×	2.10	=		
Pilot		×	2.20	=		
Front row passengers		×	2.20	=		
Rear row passengers		×	3.00	=		Check that Total mass < 950 kg Centre of mass between 2.13m and 2.40m
Baggage		×	3.20	=		
Fuel*		×	2.40	=		
Total	+				+	

*Use fuel mass calculated in the table at the top.

+ Add up the numbers in the column to calculate the total.