

Useful Factors and Formulas

Conversion Factors			
Lbs to kg	1kg = 2.204lbs	kgs to lbs	1lb = .454kgs
USG to Lt	1USG = 3.785Lt	lt to USG	1lt = 0.264USG
Lt to Imp Gal	1lt = 0.22 Imp G	Imp.Gal to lt	1Imp G = 4.55lt
NM to KM	1nm = 1.852km	km to nm	1km = 0.54nm
NM to StM to ft	1nm = 1.15stm 1nm = 6080ft	Stm to nm to ft	1 stm = 0.87nm 5280ft
FT to Meters	1 FT = 0.3048 m	meters to ft	1 m = 3.281 FT
Inches to Cm	1 inch = 2.54cm	cm to inches	1cm = 0.394"
Hpa(mb) to "Hg	1mb = .029536"	" Hg to Hpa (mb)	1" = 33.8mb

AVGAS FUEL Volume / weight SG = 0.72					
Litres	Lt/kg	kgs	Litres	lbs/lts	Lbs
1.39	1	0.72	0.631	1	1.58

Crosswind component per 10 kts of wind								
Kts	10	20	30	40	50	60	70	80
10	2	3	5	6	8	9	9	10

Useful Formulas	
Celsius (C) to Fahrenheit (F)	$C = 5/9 \times (F-32),$ $F = C \times 9/5 + 32$
Pressure altitude (PA)	$PA = \text{Altitude AMSL} + 30 \times (\text{QNH}-1013)$ i.e. Altitude AMSL is 30ft higher than pressure altitude for every mb above 1013mb Memory aid – Subscale up/down altitude up/down
Standard Temperature (ST)	$ST = 15 - 2 \times PA/1000$ i.e. 2 degrees cooler per 1000ft altitude
Density altitude (DA)	$DA = PA + (-) 120\text{ft/deg above (below) ST}$ i.e. 120Ft higher for every degree hotter than standard
Specific Gravity	$SG \times \text{volume in litres} = \text{weight in kgs}$
One in 60 rule	1 degree of arc @ 1nm at a radius of 60nm i.e degrees of arc approximately equal length of arc at a radius of 60nm
Rate 1 Turn Radius	$R = GS/60/\pi \approx GS/20$
Percent to Gradient fpm	$Fpm \approx \% \times G/S$ Or $Fpm = \% \times G/S \times 1.013$
Gust factor	$Vat = Vref + 1/2HWC + \text{Gust}$ eg. Wind 20kts gusting 25 at 30 degrees to Runway: $Vat = Vref + .7 \times 10 + 5 = Vref + 12,$ If the Vref is 75kts, Vat should be $75 + 12 = 87\text{kts}$