BOB TAIT'S AVIATION THEORY SCHOOL

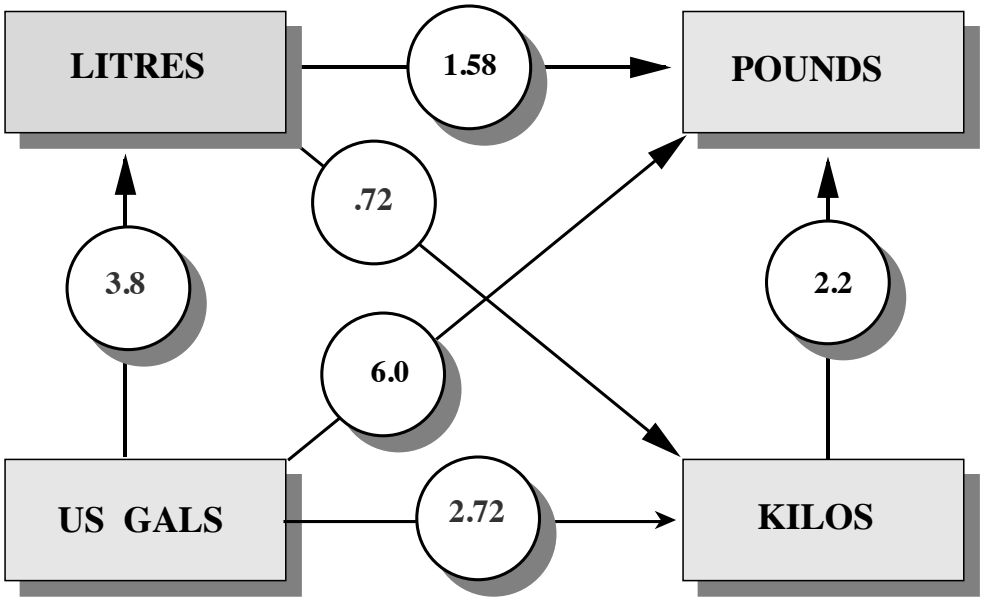
RPL / PPL VOLUME 1
RECREATIONAL PILOT LICENCE [RPL]

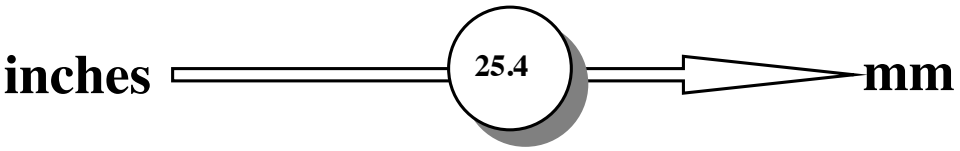
SUPPLEMENT

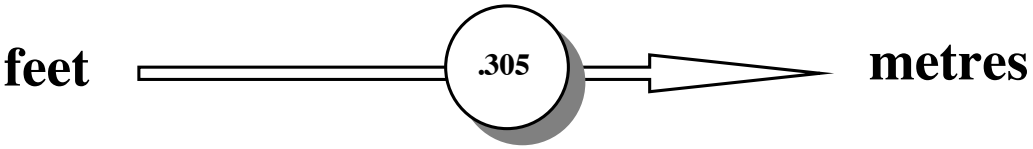
Piper Pacer PA22/20

CONVERSION FACTORS

AVIATION GASOLINE SPECIFIC GRAVITY .71







WHEN FOLLOWING THE ARROW - MULTIPLY

WHEN BACKTRACKING THE ARROW - DIVIDE

LOADING SYSTEM BRAVO
CONFIGURATION: 4 SEATS

INSTRUCTIONS FOR USE OF LOADING SYSTEM

To check the loading of the aircraft before take-off, calculate the total weight and total moments as shown in the example below.

Plot the total weight and moment on the "Centre of Gravity Envelope" chart, and if the intersection point is within the envelope, the loading is acceptable.

AIRCRAFT LIMITATIONS

Maximum take-off weight	
Normal category:	1000 KG / 2200 lbs
Utility category:	841 KG / 1850 lbs
Maximum cargo compartment:	154 KG / 339 lbs
Maximum baggage compartment:	54 KG / 120 lbs

Notes:

1. The aircraft is fitted with standard tanks (37 US Gallons at 6 lbs / gallon)
2. Empty weight includes unusable fuel and undrainable oil
3. Obtain Moment / 1000 inch pounds from the loading graph

EXAMPLE:

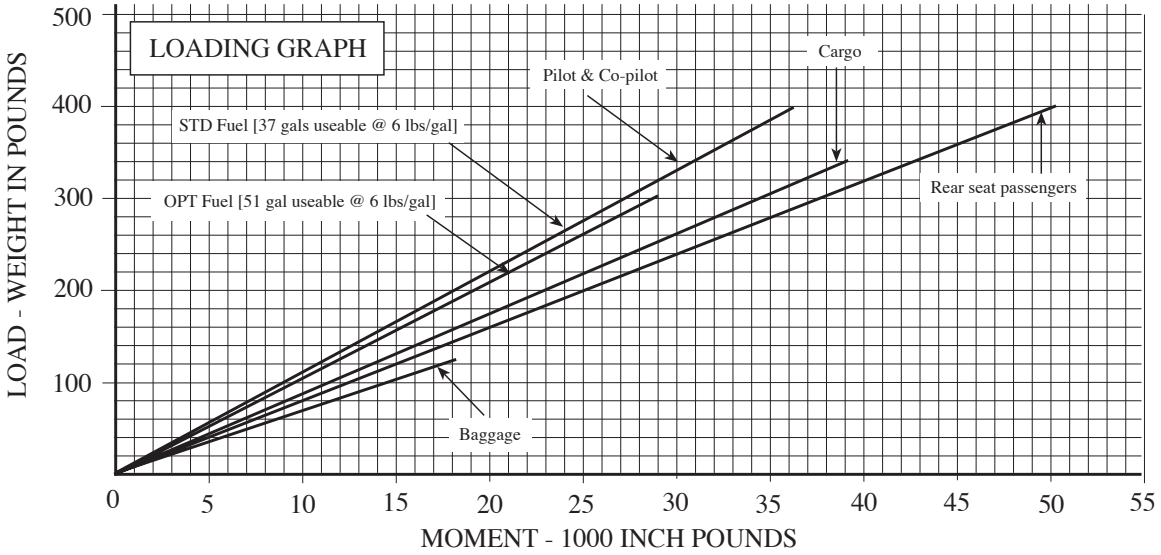
	WEIGHT (LBS)	ARM (IN)	MOMENT/1000 IN LB
Empty weight	1260	80	100.80
Oil	15	32	.48
Pilot & Co-Pilot	320	91	29.12
Cargo compartment	80	115	9.20
Rear seat passengers	250	126	31.50
Baggage	25	151	3.78
Zero Fuel Weight	**1950**		**174.88**
Fuel (140 litres)	221	91	20.11
Take-Off Weight	**2171**		**194.99**

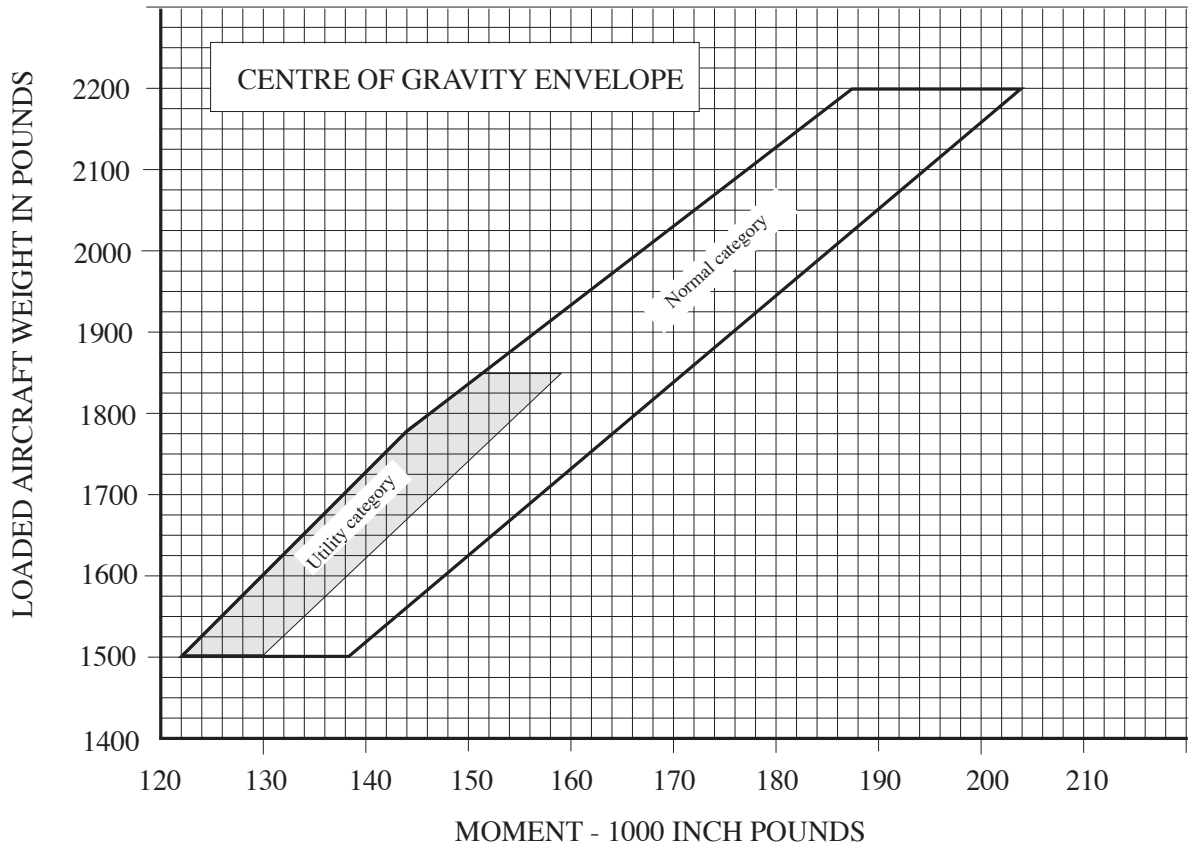
Check CG is within the envelope at both ZFW and Take-off weight

FOR EXAMS FROM 2 DECEMBER 2021 ONWARDS

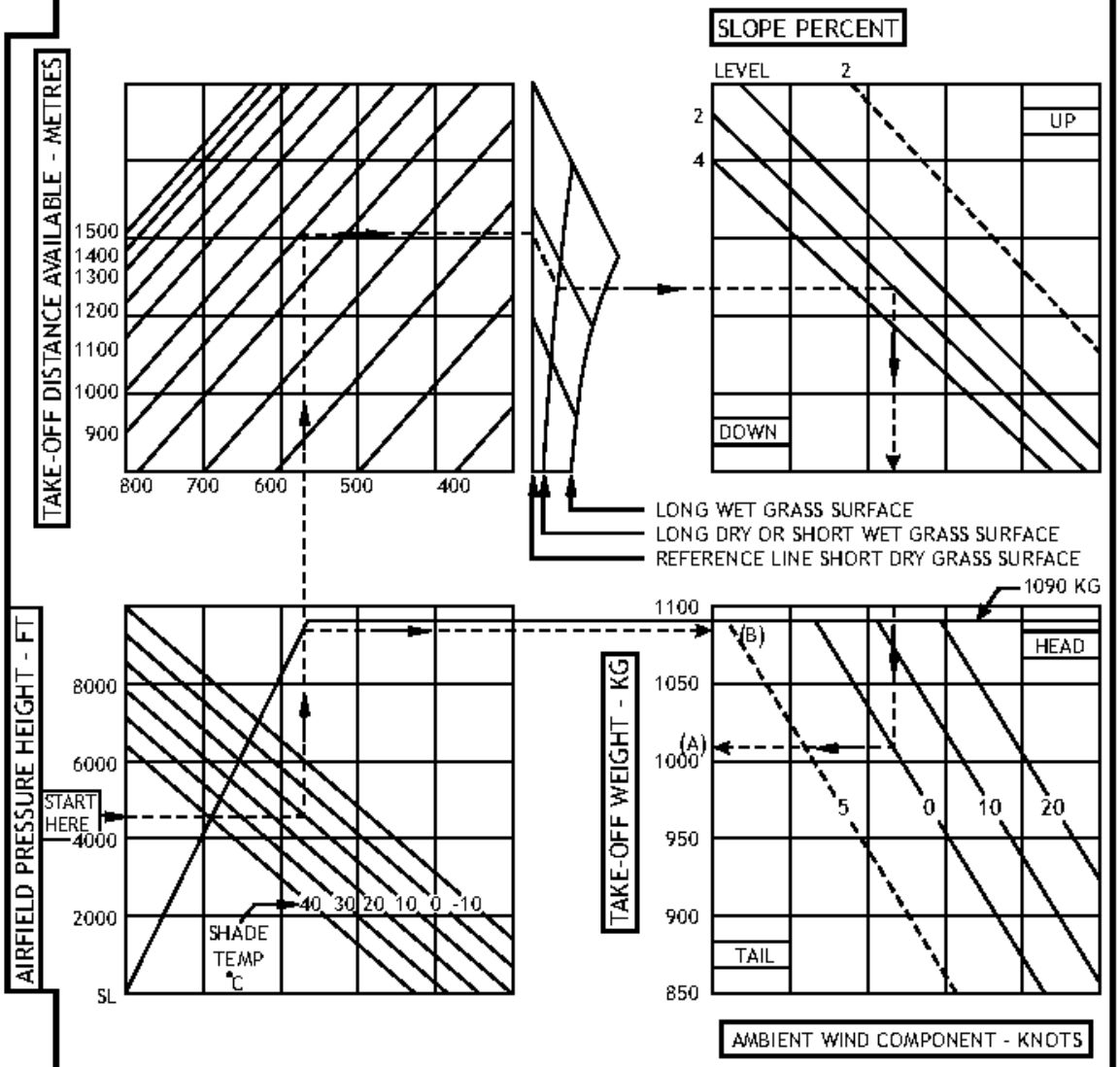
LOADING SYSTEM BRAVO

The loading graph below converts weights in each location to a corresponding moment index. However in practice [or in the examination] it is actually both faster and much more accurate to multiply the weight by the location arm in the load sheet example at left and divide the result by 1000. The load sheet example will be provided in the examination.





TAKE-OFF WEIGHT CHART
Figure 3

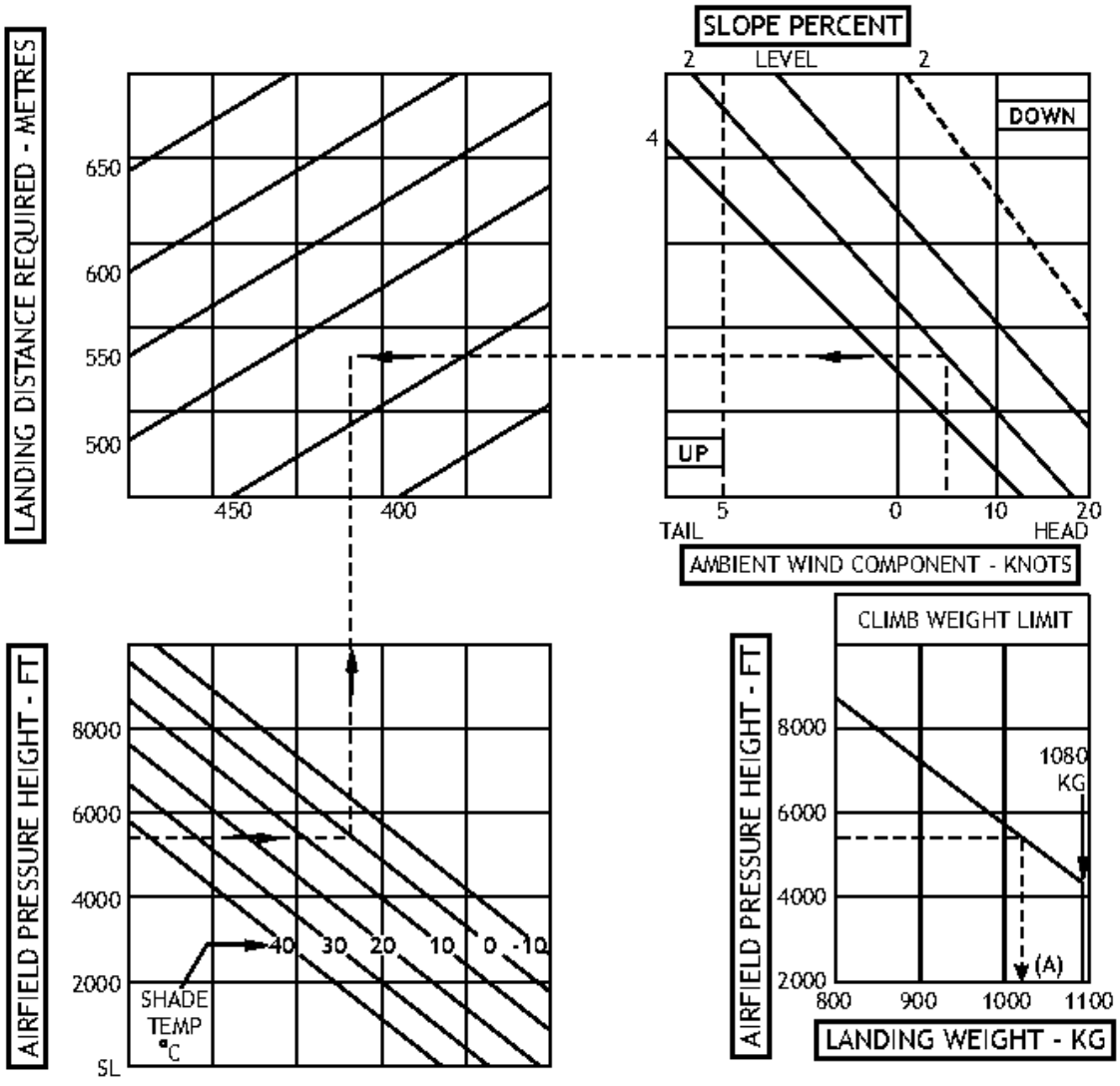


NOTES:
(1) THE GROSS WEIGHT AT TAKE-OFF SHALL NOT EXCEED THE LESSOR OF (A) AND (B).
(2) THE MAXIMUM TAKE-OFF WEIGHT = 1090 KG

POWER TO BE USED	FULL THROTTLE
FLAP SETTING	10 DEGREES
TAKE-OFF SAFETY SPEED	60 KIAS
TAKE-OFF DISTANCE FACTOR	1.15
MAX PERMITTED CROSS WIND	15 KTS

FOR EXAMS FROM 2 DECEMBER 2021 ONWARDS

LANDING CHART
Figure 6



NOTES:

(1) THE GROSS WEIGHT AT LANDING SHALL NOT EXCEED (A).

(2) LANDING DISTANCE REQUIRED DOES NOT VARY SIGNIFICANTLY WITH WEIGHT

FLAP SETTING	30 DEGREES
APPROACH SPEED	58 KIAS
LANDING DISTANCE FACTOR	1.15
MAX PERMITTED CROSS WIND	15 KTS

FOR EXAMS FROM 2 DECEMBER 2021 ONWARDS