Dr. Maverick's Boom Junk
KC-135 WAG's

Power-Off - Gliding Distance (for LPU fit/preposition):

Note: R-Model WAG.

Gliding Distance = (Altitude * 15) / 6076

Example:

Altitude = 30,000 ft.

30,000*15/6076 = 74.1 NM

Take-Off Rotation Speed:

Note: Computes Vrot within a few knots.

Vrot = Gross Weight / 3 + 75 (30 Flaps) or + 77 (20 Flaps)

Example:

Gross Weight = 225.0

225.0/3 + 77 = 152 KIAS

Landing Approach Descent Rate:

Note: Computes approach descent rate for 3.0 degree glideslope.

Approach Speed * 10 / 2 = Descent Rate (FPM)

Example:
150 * 10 / 2 = 750 feet per minute

Landing Approach Speed (50 Flaps):

Note: Computes 50 flap approach speed within a few knots.

Approach Speed = (((Gross Weight - 100) / 10)* 4) + 114

Example:

Gross Weight =195.0

(((190.0 - 100) / 10) * 4)+114 =150 KIAS

Easy Method:

Take the middle and last digit of the
gross weight (i.e. 190 yields 9.0) multiply by 4, then add to 114.

CG WAG:

Note: Computes CG within a few tenths of a percent.

CG = 33 - FWD - 1/3CTR + 2/3(AFT + RES)

Example:

FWD: 11.2
CTR: 0.0
AFT: 1.5
RES: 5.8

33 - 11.2 - 1/3(0) + 2/3(1.5 + 5.8) =26.7 % CG

Ballast Fuel:

Notes: Computes approximate forward body fuel required to obtain a desired CG, reserves full, mains balance, center wing empty.

(((OPMOM + RES + AFT) / (OPWT + RES + AFT) * 1000) - DCGA) / 2.79

Example:
Desired CG: 25.0
Desired CGA (DCGA): 846.7((25*241.9/100)+786.2)

OPMOM: 107,011
OPWT: 122,719
CTR: 0.0
AFT: 1.5M / 1,580
RES: 5.8M / 6,272

(((107011+1580+6272) /(122719+1500+5800))*1000) - 846.7 =
(((114863 / 130019) * 1000) - 846.7) /2.79 =
13.2M forward (reserves full)