

menus and point-and-click, Jack® the user to specify the movement of items within the cockpit such as yokes or seats. The range of movement of these items can have a significant impact on fit, reach and vision. Therefore, they should generally be defined in the model. It is also important to specify the geometry of any personnel equipment such as helmets or parachutes which can be attached to the Jack® figure for a more realistic assessment.

ii. Import CAD data into Jack®.

To save effort, an existing CAD representation can be imported into Jack® using the import facility. Some CAD formats can be imported directly, others require the use of a conversion program.

It will then be necessary to input, using point-and-click, the range of movement of various cockpit items and the dimensions of personnel equipment, as discussed above.

iii. Define user population. Jack® comes equipped with default data on the US military population. Using the Spreadsheet Anthropometric Scaling System (see figure 2), it is easy to alter this data. This form is also used to select the size of the human figure(s) displayed within the CAD environment. This is achieved by selecting the desired percentile (usually approximately the 5th percentile represents a very small person and the 95th percentile represents a very large person).

POPULATION		STRENGTH		DETAILS		
FIGURE TYPE:	Male	STRENGTH TYPE:	150% ACTIVE	Sum	Gr 95 10	
GENERIC:	Male	SEX:	50%	YOUTH SPEED:	80.00 mph/acc	
MASS:	70.20kg	AGE:	40.00%	STRETH CODE:	PROJECT	
STATURE:	175.30cm	LO FACTOR:	60.00%	10.40%		
GROUP PERCENTILE:	50.00%	FRT (SUE LEVEL):	B			
Body Parts (Height cm)	Width (cm)		Thickness (cm)		Length (cm)	
	Gr 50	Gr 95	Gr 50	Gr 95	Gr 50	Gr 95
1. l.arm	5.34	58.00%	5.34	50.00%	80.97	58.00%
2. r.arm	5.34	58.00%	5.34	50.00%	80.97	58.00%
3. l.hand	4.76	58.00%	1.85	50.00%	19.37	58.00%
4. r.hand	4.76	58.00%	1.85	50.00%	19.37	58.00%
5. l.leg	8.38	58.00%	8.46	50.00%	85.94	58.00%
6. r.leg	8.38	58.00%	8.46	50.00%	85.94	58.00%
7. l.foot	3.35	58.00%	5.83	50.00%	26.99	58.00%
8. r.foot	3.35	58.00%	5.83	50.00%	26.99	58.00%
9. torso	17.06	58.00%	12.39	50.00%	59.01	58.00%
10. head	7.57	58.00%	8.06	50.00%	13.08	58.00%
11. l.finger_1	1.28	58.00%	1.14	50.00%	13.79	58.00%
12. l.finger_2	1.14	58.00%	1.09	50.00%	11.14	58.00%
13. l.finger_3	1.12	58.00%	1.11	50.00%	10.92	58.00%
14. l.finger_4	1.07	58.00%	1.03	50.00%	10.67	58.00%
15. l.finger_5	0.95	58.00%	0.92	50.00%	8.61	58.00%
16. r.finger_1	1.28	58.00%	1.14	50.00%	13.79	58.00%
17. r.finger_2	1.14	58.00%	1.09	50.00%	11.14	58.00%
18. r.finger_3	1.12	58.00%	1.11	50.00%	10.92	58.00%
19. r.finger_4	1.07	58.00%	1.03	50.00%	10.67	58.00%
20. r.finger_5	0.95	58.00%	0.92	50.00%	8.61	58.00%

Figure 2: Screen print from Jack® showing the Spreadsheet Anthropometric Scaling System.