# X22A ducted propeller Validation geometry

T.S. Vermeulen – Feb 2025

Contents

- This pack contains the geometry of the X22A ducted propeller, used for validation of the MTFLOW (python) interface.

- A hyperlink to each source is given in the slide titles

- The last slide contains some information on the airfoil choice for the propeller, which, combined with slide 4, should be enough to give a (rough) reconstruction. However, full airfoil details are not known, so this remains approximate.
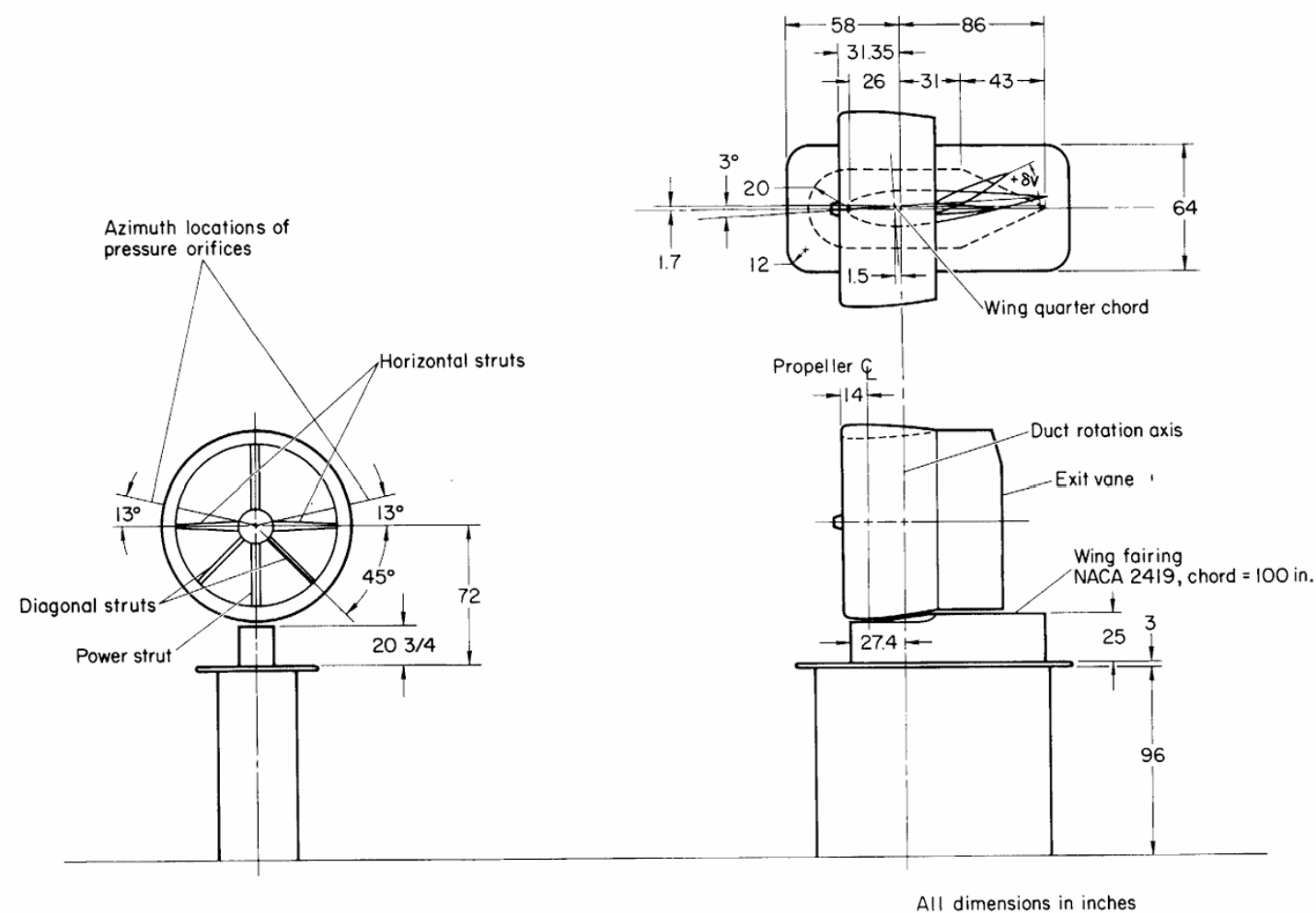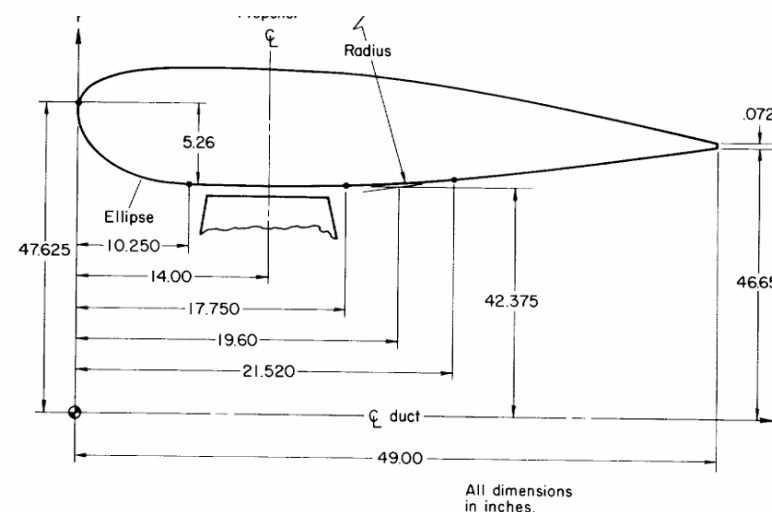
(a) Basic arrangement.

Figure 2.- Model dimensions.
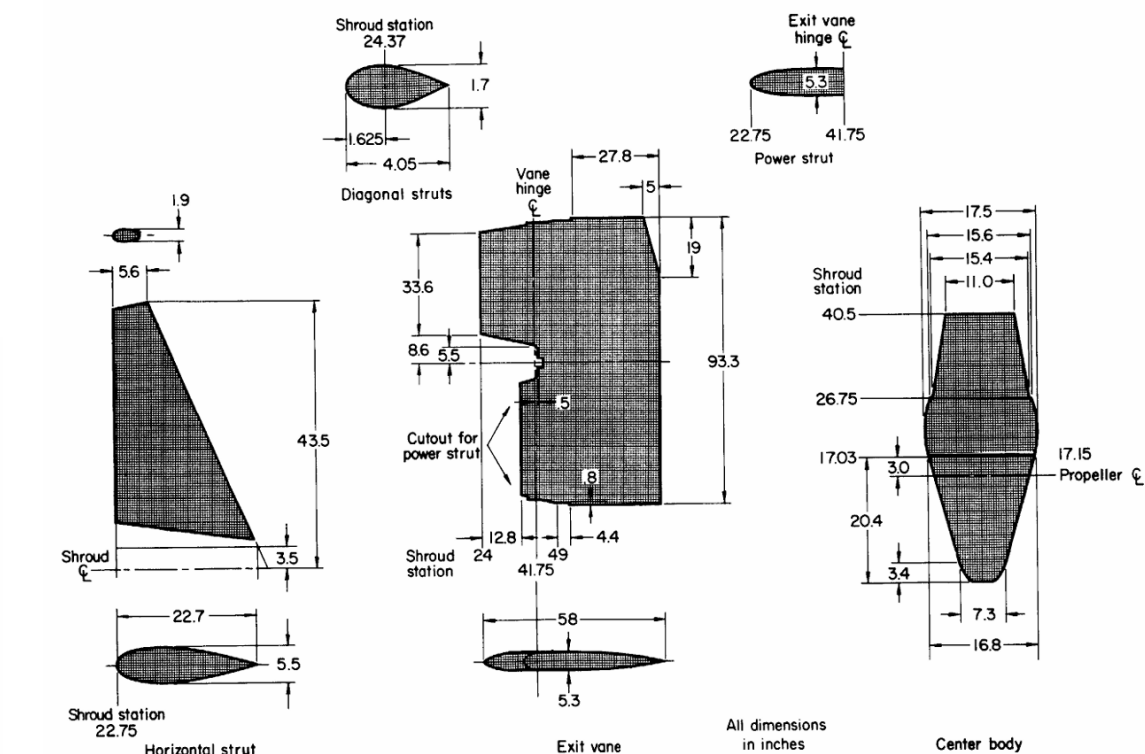
(c) Details of struts, exit vane, and centerbody.

Figure 2.- Concluded.

Outside surface ordinates	
X	r
0	47.625
.613	48.695
1.225	49.096
2.450	49.609
3.675	49.953
4.900	50.205
7.350	50.535
9.800	50.710
10.250	—
12.250	50.779
14.700	50.763
17.750	—
19.600	50.552
23.700	—
24.500	50.164
29.400	49.649
34.300	49.038
39.200	49.344
44.100	47.576
46.550	47.160
49.000	46.722

Pressure orifice location		
Number	Location, percent chord	
	Inside	Outside
1	0	
2	1	
3	2.5	
4	5	
5	10	
6	15	
7	25	
8	35	
9	50	
10	70	
11	90	
12		90
13		70
14		50
15		35
16		25
17		15
18		5
19		1.8

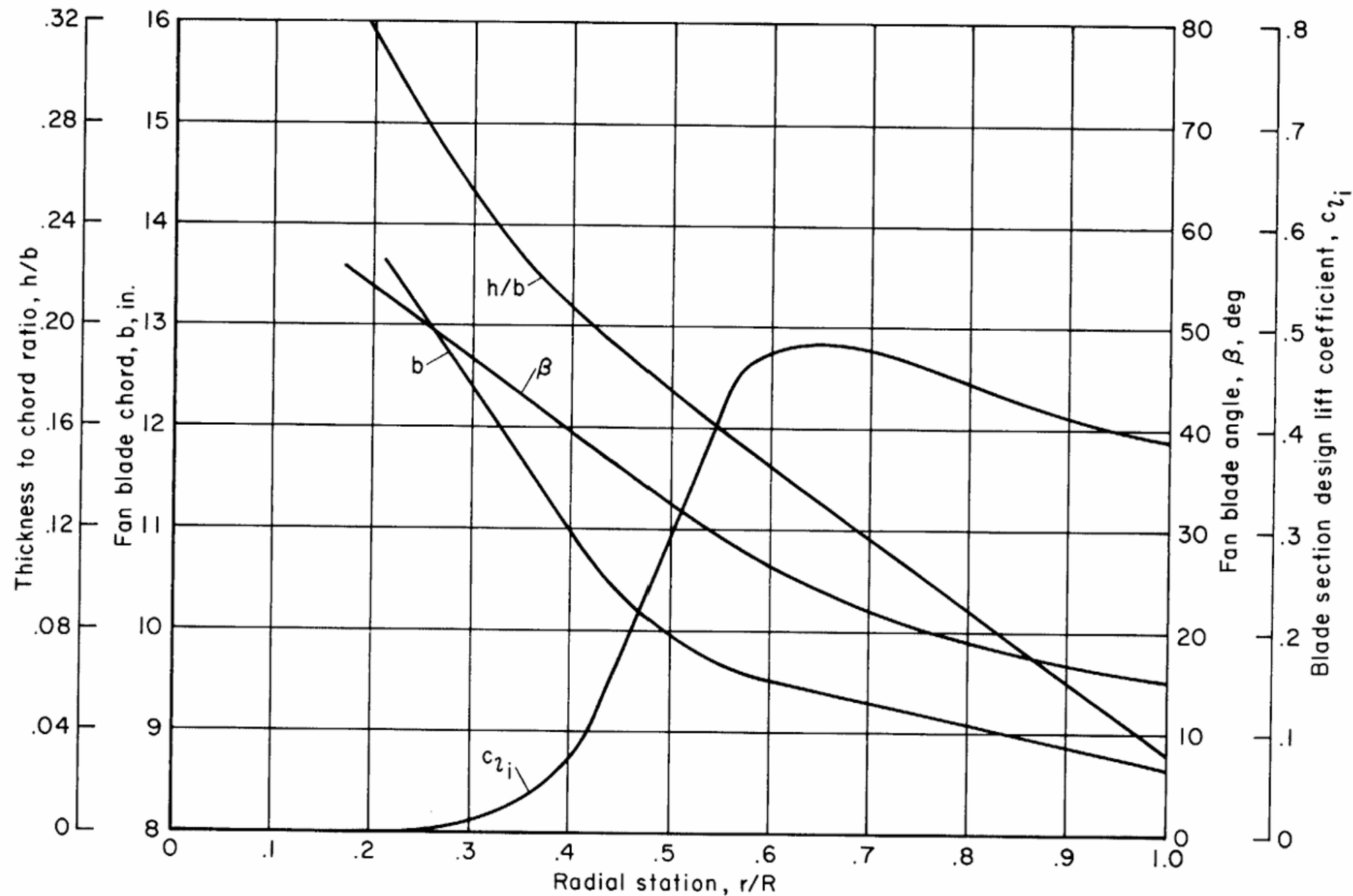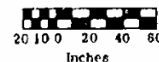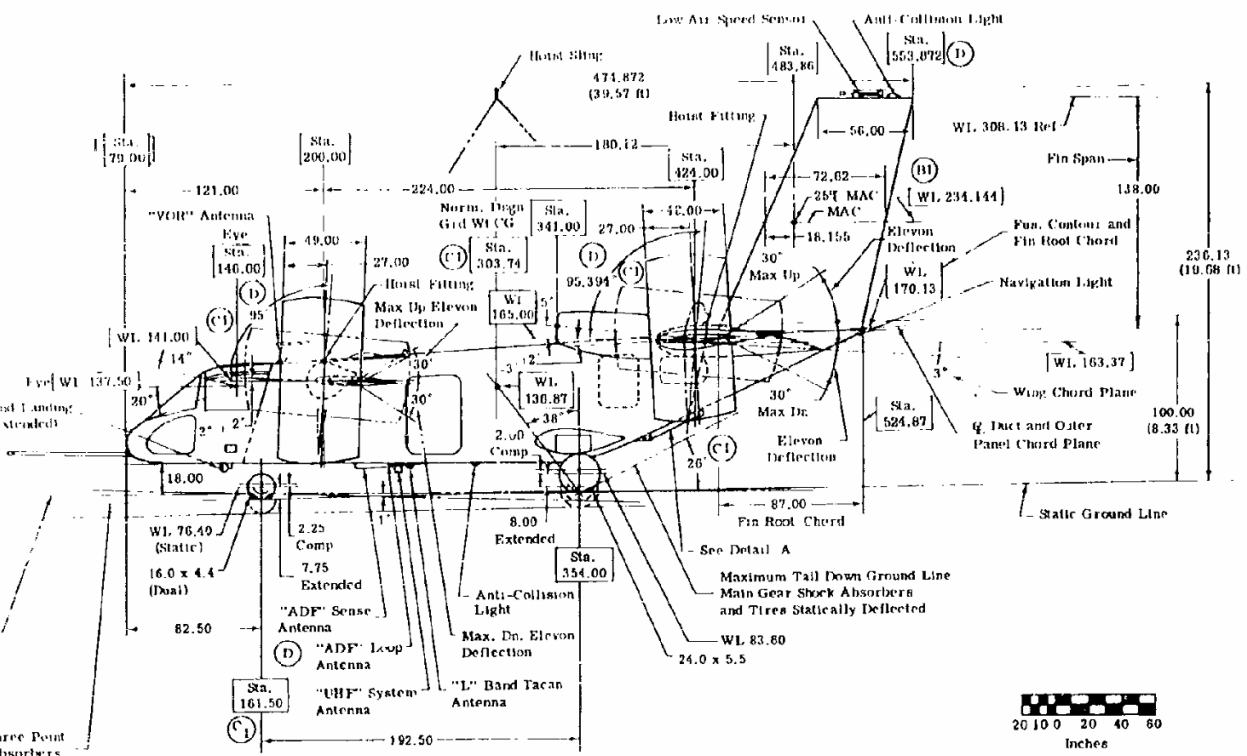(b) Shroud dimensions.

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Figure 3.- Propeller blade characteristics with the design lift coefficient, blade chord, blade angle, and blade thickness to chord ratio as functions of the radial distance from the duct center.

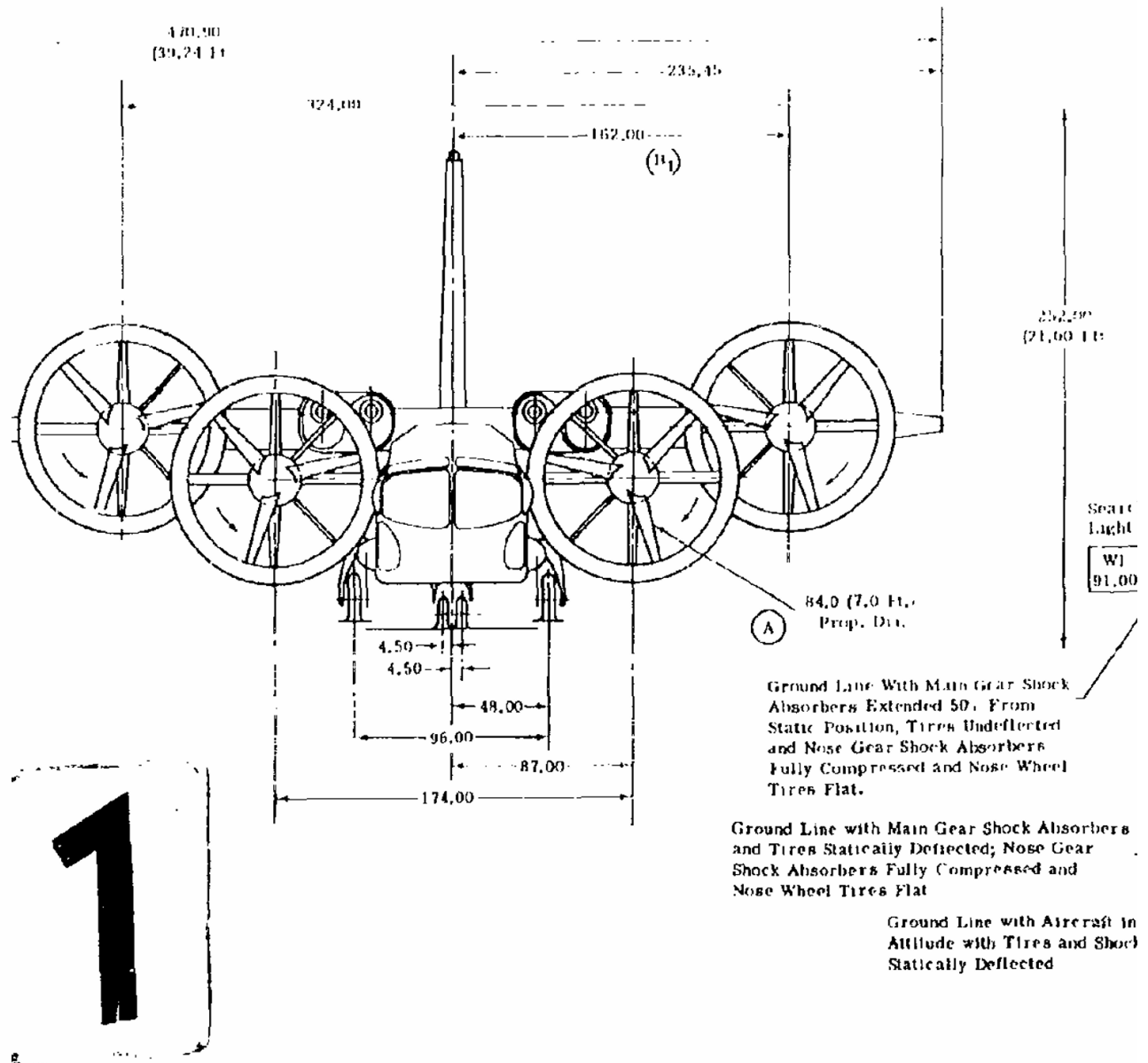# MODEL X-22A. DEMONSTRATION PLANNING AND PROGRESS REPORT

1.2.9 X-22A GENERAL ARRANGEMENT