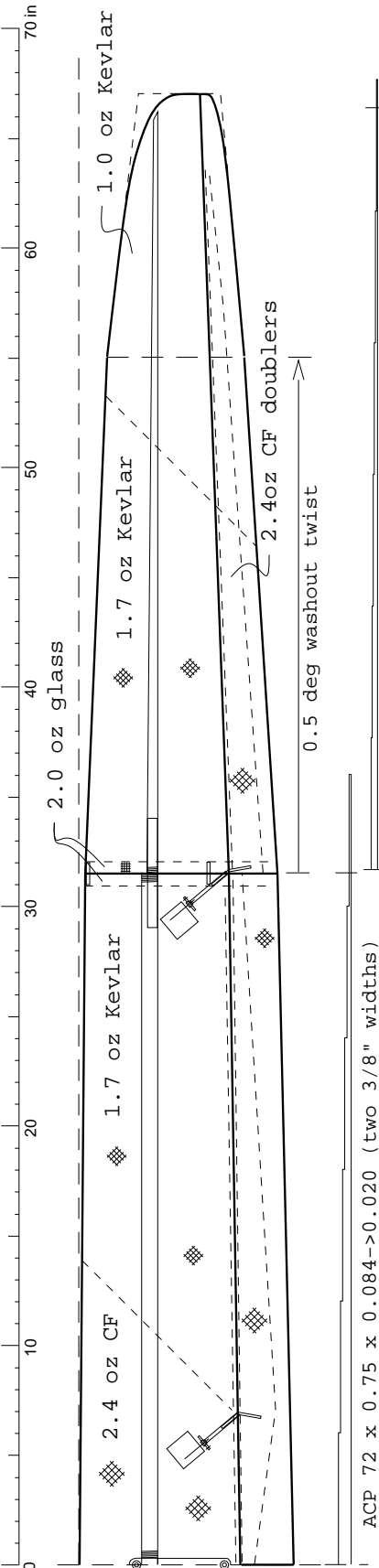


1:8 scale



**Supra F3J/TD Wing**  
 b = 3.40 m (134 in)  
 S = 0.678 dm<sup>2</sup> (1051 in<sup>2</sup>)  
 AR = 17.06  
 Mark Drela 20 Jun 04

Design (never-exceed) Loads

load 200 lb @ 95 mph, CL=1.2  
 root bend.mom. 2900 lb-in  
 root cap load 4460 lb  
 root cap area 0.063 in<sup>2</sup>  
 root cap stress 71 ksi  
 tip deflection 20 in

21g tip caps  
 22g tip webs  
 9g tip spar wrap  
 6g joiner tubes  
 4g joiner wood

62g tip spars

62g tip spars  
 103g tip foam  
 63g tip skin  
 10g tip paint

238g tip panels

123g cen caps  
 37g cen web  
 28g cen spar wrap  
 6g joiner tubes  
 6g joiner wood  
 10g bolt beam

210g cen spar

210g cen spar  
 165g cen foam  
 110g cen skin  
 15g cen paint

500g cen panel

500g cen panel  
 238g tip panels  
 29g joiner rods

767g total  
 27.0 oz total

1.5oz bias glass spar wrap...  
 2 layers center panel,  
 1 layer tip panels,  
 3 layers over joiners

ACP 72 x 0.75 x 0.084 -> 0.020 (two 3/8" widths)

ACP 72 x 0.50 -> 0.25 x 0.042 -> 0.007

x=1.25in  
 y=55in  
 c=6.25in  
 AG42d  
 -0.5 deg

x=2.6875in  
 y=67in  
 c=3.75in  
 AG43d  
 -0.5 deg

Hi-Load 60 foam spar core

Hi-Load 60 foam

tubes: 3 layers 5.6 oz bias kevlar 20°

endgrain basswood

top cap tilted parallel  
 to top airfoil surface

x=0.25in  
 y=31.5in  
 c=8.75in  
 AG41d  
 0 deg

hard  
 endgrain  
 balsa  
 at joiner

0.007" x 1/4"

0.007" x 7/16"

0.007" x 5/8"

x=0.0in  
 y=0.0  
 c=9.75in  
 AG40d  
 0 deg

endgrain balsa spar core  
 over wing saddle

Hi-Load 60 foam

75% chord hinge  
 at all spanwise locations

-20 max ail.  
 -15 brake

-2 run

0

+3 float

+8 crawl

+12 winch

-10 max ail.

-2 run

0

+3 float

+12 winch

+25 crawl

+50 brake

15°

5°