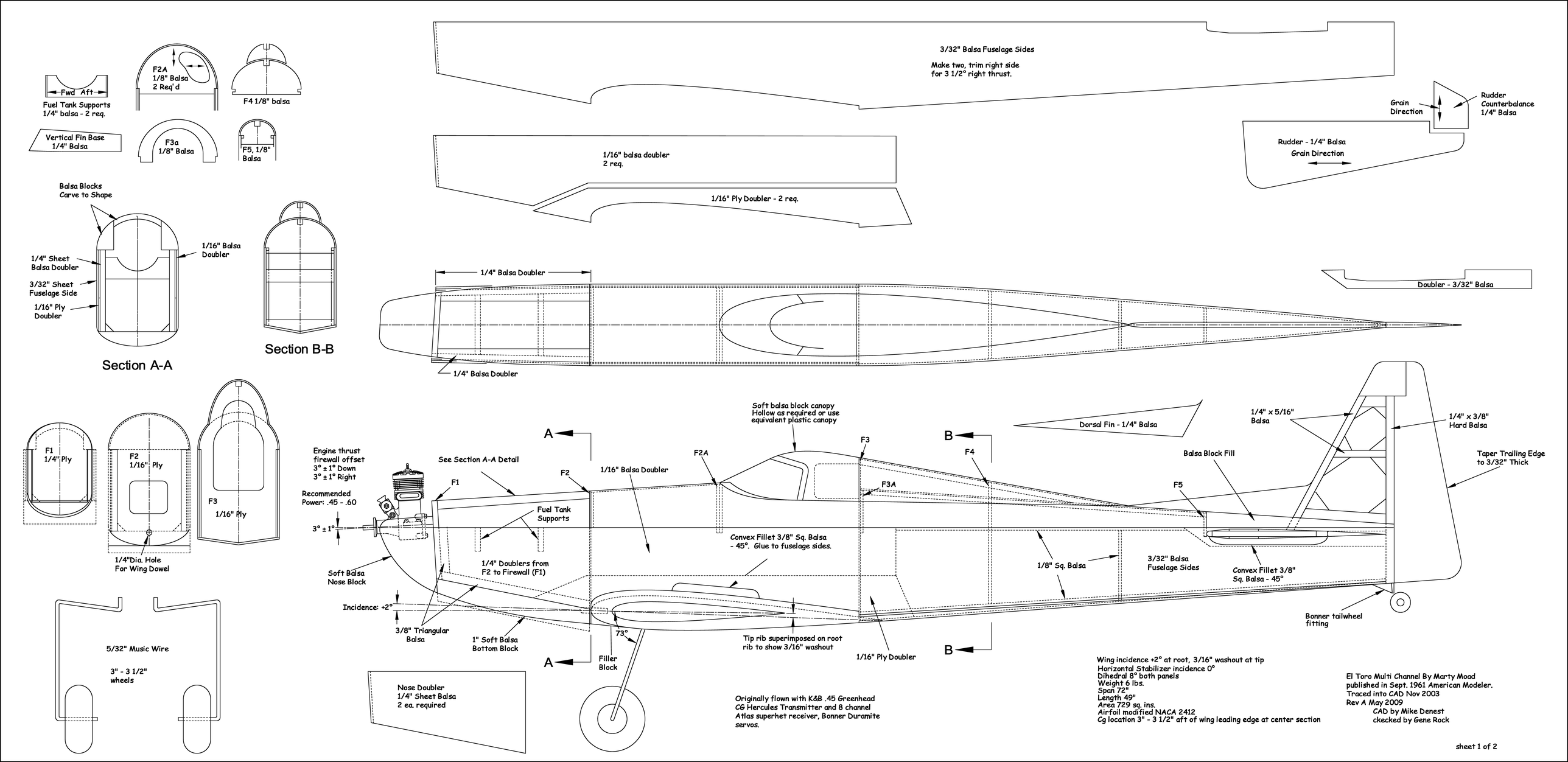
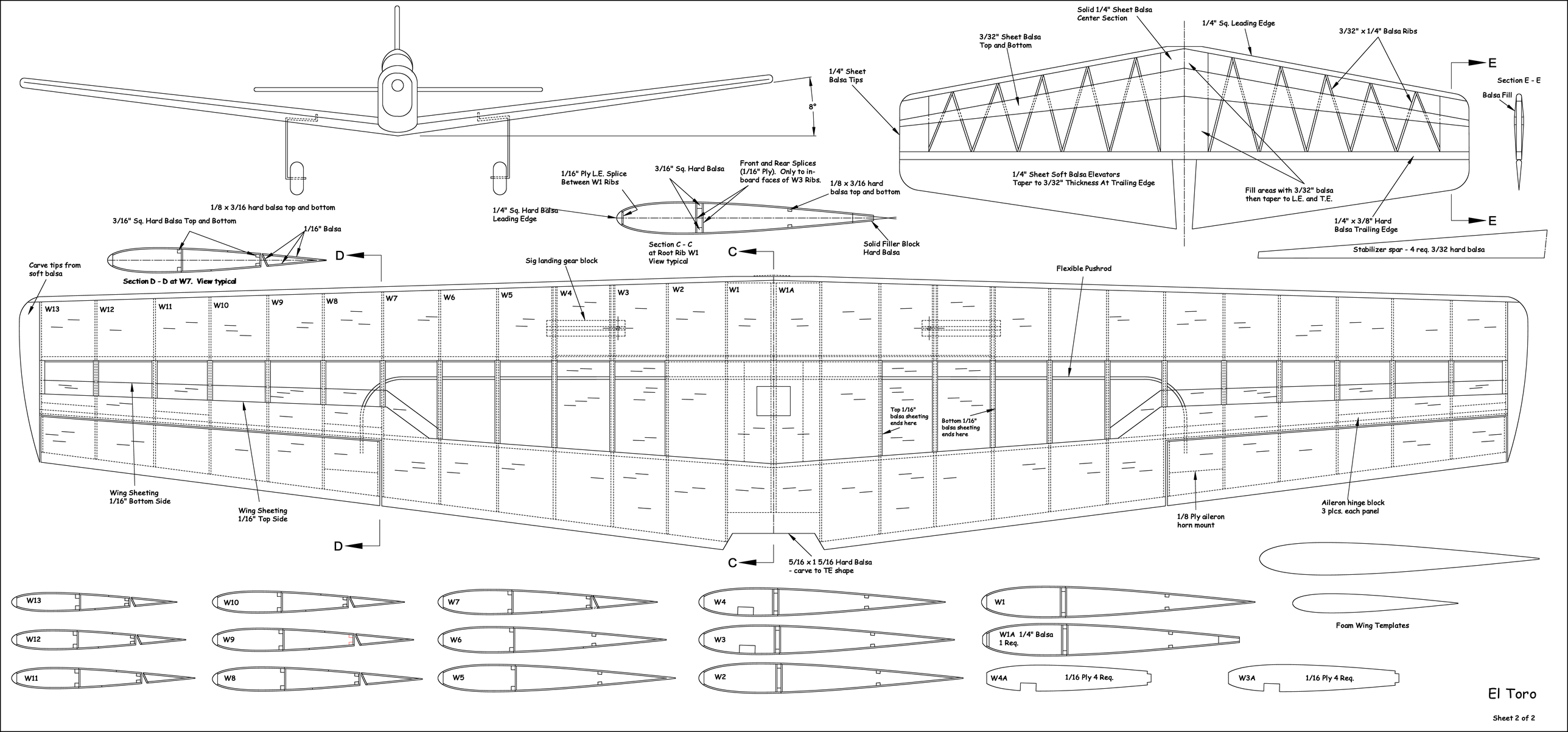

3/32" Balsa Fuselage Sides
Make two, trim right side
for 3 1/2° right thrust.
Fwd Aft
Fuel Tank Supports
1/4" balsa - 2 req.
F2A
1/8" Balsa
2 Req'd
F4 1/8" balsa
Vertical Fin Base
1/4" Balsa
F3a
1/8" Balsa
F5, 1/8"
Balsa
1/16" balsa doubler
2 req.
1/16" Ply Doubler - 2 req.
Grain
Direction
Rudder
Counterbalance
1/4" Balsa
Rudder - 1/4" Balsa
Grain Direction
Balsa Blocks
Carve to Shape
1/4" Sheet
Balsa Doubler
3/32" Sheet
Fuselage Side
1/16" Ply
Doubler
1/16" Balsa
Doubler
Section A-A
Section B-B
1/4" Balsa Doubler
1/4" Balsa Doubler
Doubler - 3/32" Balsa
F1
1/4" Ply
F2
1/16" Ply
F3
1/16" Ply
1/4"Dia. Hole
For Wing Dowel
Soft balsa block canopy
Hollow as required or use
equivalent plastic canopy
Dorsal Fin - 1/4" Balsa
1/4" x 5/16"
Balsa
1/4" x 3/8"
Hard Balsa
Taper Trailing Edge
to 3/32" Thick
Engine thrust
firewall offset
3° ± 1° Down
3° ± 1° Right
Recommended
Power: .45 - .60
3° ± 1°
See Section A-A Detail
F1
F2
1/16" Balsa Doubler
F2A
F3
F3A
F4
F5
Balsa Block Fill
Fuel Tank
Supports
Convex Fillet 3/8" Sq. Balsa
- 45°. Glue to fuselage sides.
1/4" Doublers from
F2 to Firewall (F1)
Soft Balsa
Nose Block
1/8" Sq. Balsa
3/32" Balsa
Fuselage Sides
Convex Fillet 3/8"
Sq. Balsa - 45°
Incidence: +2°
3/8" Triangular
Balsa
1" Soft Balsa
Bottom Block
73°
Filler
Block
Tip rib superimposed on root
rib to show 3/16" washout
1/16" Ply Doubler
Bonner tailwheel
fitting
A
B
5/32" Music Wire
3" - 3 1/2"
wheels
Nose Doubler
1/4" Sheet Balsa
2 ea. required
Originally flown with K&B .45 Greenhead
CG Hercules Transmitter and 8 channel
Atlas superhet receiver, Bonner Duramite
servos.
Wing incidence +2° at root, 3/16" washout at tip
Horizontal Stabilizer incidence 0°
Dihedral 8° both panels
Weight 6 lbs.
Span 72"
Length 49"
Area 729 sq. ins.
Airfoil modified NACA 2412
Cg location 3" - 3 1/2" aft of wing leading edge at center section
El Toro Multi Channel By Marty Moad
published in Sept. 1961 American Modeler.
Traced into CAD Nov 2003
Rev A May 2009
CAD by Mike Denest
ckecked by Gene Rock
sheet 1 of 2


8°
1/8 x 3/16 hard balsa top and bottom
3/16" Sq. Hard Balsa Top and Bottom
1/16" Balsa
Section D - D at W7. View typical
1/16" Ply L.E. Splice
Between W1 Ribs
3/16" Sq. Hard Balsa
Front and Rear Splices
(1/16" Ply). Only to in-
board faces of W3 Ribs.
1/8 x 3/16 hard
balsa top and bottom
1/4" Sq. Hard Balsa
Leading Edge
Section C - C
at Root Rib W1
View typical
Solid Filler Block
Hard Balsa
1/4" Sheet
Balsa Tips
3/32" Sheet Balsa
Top and Bottom
Solid 1/4" Sheet Balsa
Center Section
1/4" Sq. Leading Edge
3/32" x 1/4" Balsa Ribs
1/4" Sheet Soft Balsa Elevators
Taper to 3/32" Thickness At Trailing Edge
Fill areas with 3/32" balsa
then taper to L.E. and T.E.
1/4" x 3/8" Hard
Balsa Trailing Edge
Section E - E
Balsa Fill
Stabilizer spar - 4 req. 3/32 hard balsa
Carve tips from
soft balsa
Sig landing gear block
Flexible Pushrod
W13
W12
W11
W10
W9
W8
W7
W6
W5
W4
W3
W2
W1
W1A
Top 1/16"
balsa sheeting
ends here
Bottom 1/16"
balsa sheeting
ends here
Wing Sheeting
1/16" Bottom Side
Wing Sheeting
1/16" Top Side
1/8 Ply aileron
horn mount
Aileron hinge block
3 plcs. each panel
5/16 x 1 5/16 Hard Balsa
- carve to TE shape
W1A 1/4" Balsa
1 Req.
W4A 1/16 Ply 4 Req.
W3A 1/16 Ply 4 Req.
Foam Wing Templates
El Toro
Sheet 2 of 2