

Double Eagle Parts

Notes:

1	I used Dillsburg Aeroplane Works to order the steel. Call them and they will send you a price list. They accept VISA.
	Their contact info is:
	The Dillsburg Aeroplane Works
	Charles T. Vogelsong
	114 Sawmill Road
	Dillsburg, PA 17019
	(717) 432-4589
	no email
	As an example, I ordered the tubing and sheet steel from the original list on Dec. 22, 2003. The tubing & sheet steel cost \$575.17 with an additional \$72.45 in freight shipping to Cincinnati, OH. The two packages sent were the tubing in a heavy cardboard 6" tube, 22' long at 95 lbs. and a cardboard flat wrapped package about 4' square at 70 lbs containing the sheet steel.
	I had to purchase a second package with an additional random 20' length of 3/4" and one of 5/8". It was shipped UPS cut up in 8' lengths. The 21' 7" of 3/4" x 0.035 and 17' of 5/8" 0.035 cost \$62.59 with the UPS bill of \$23.31.
	I'm currently in the process (which prompted this parts list) of ordering about another \$100 in tube and sheet that should finish up the steel portion.
2	While there are a number of other items on the list, it is primarily intended to allow the builder to order as much of the steel as possible on the first shipment with the longerons. If the longerons are not to be spliced, motor freight will be required and the builder might as well take advantage of the lower over all freight charge.
3	I believe I've included about 10 extra feet each of 3/4" x 0.035" and 5/8" x 0.035". I'll correct the lengths once I build the tail feathers (only the fuselage is welded up to date) and see how much is left over. I don't have too many wind chimes yet
4	The builder should pay strict attention to the material dimensions of both the tube and sheet steel required before getting on the phone to order. Considerable savings can be attained by being able to accept odd cuts from Dillsburg.
5	It the builder wants to use the building techniques shown in the video...
	a) at least 18 more inches of tail post material will be required.
	b) the landing gear axle rod will need to be an additional 60 inches in length.
	c) instead of 2.5" of 1/2" x 0.095 you'll need a piece about 30" in length.
6	Purchase as much of the tubing in random 20' lengths (cheaper from Dillsburg). Especially for the 3/4" bottom longerons and just in case the builder screws one or more of the bends up.
7	I've added a bit extra flooring tab material to the list for other areas of the fuselage.
8	The left most column of the list should indicate the minimum that should be ordered. I did try my best to leave a little extra on each item and also tried to include the saw cut kerfs.

9	Wing and Jury Struts are only sold in set lengths from Mary Carlson in Ohio. The wing struts are sold in 126" lengths, cut down to 107" for shipment and the jury struts are sold in 72" lengths. She also sells the 3/4" & 1" filler stock and a kit to terminate the Jury struts. Get her to send you her price sheets. Her contact info is:
	Carlson Aircraft Inc.
	Mary Carlson
	P.O. Box 88
	East Palestine, OH 44413
	(330) 426-3934
	(330) 426-1144 (fax)
	mlc@sky-tek.com
10	I ordered and I'm totally pleased with the Meco Midget Torch with the Ultra Light Weight Hose, #1, #2, #3 tips, Male-to-Male hose adapters and 4130 welding videos in a kit (Kit #1) from TM Technologies. I used the #1 tip for most of the fuselage going all the way up to the #3 tip for the wing and gear strut attach fittings. It sure made life a lot easier.
	Their contact info is:
	TM Technologies
	P.O.Box 429
	N. San Juan, CA 95960
	(530) 292-3506
	(530) 292-3533 (fax)
	www.tinmantech.com
11	MOST IMPORTANT!!!! The list is not all inclusive and, although I tried, it is NOT guaranteed to be correct.
	Original - 2006-11-07
	Revision B changes - 2007-11-19
	Revision C changes - 2010-04-30

Round Tubing

Tot	Indiv	Units	O.D.		Wall	Matl	Page #s	Use
5.5		in.	1 1/4		0.188	4130	14	Engine Mount for Continental Rubber Mounts
6		in.	1		0.058	4130	19a	Suspension Spring Retainers
48		in.	1		0.035	4130	9	Control Stick Base & Stick
	16	in.	7/8		0.058	4130	4, 6, 9, 52, 52a	Elevator & Aileron Trim Tab Fairlead Holders
	14	in.	7/8		0.058	4130	18, 23, 24, 25, 26	Tail Feather Hinges
30		in.	7/8		0.058	4130		
24		in.	7/8		0.049	4130	19a	Upper Portion of Spring Assembly
13		in.	7/8		0.035	4130	1, 3, 4, 5	Rear Tail Post
60		in.	3/4		0.049	4130	19a	Lower Portion of Spring Assembly
151		ft	3/4		0.035	4130	1, 2, 3, 3a, 4, 5, 7, 17, 23, 24, 25, 26	Longerons, Sta #1 thru 3 Stretchers & Cross Bracing, Tail Feathers, Rubber Pedals
	3	in.	5/8		0.049	4130	24	Fin Leading Edge Attach Post
	44	in.	5/8		0.049	4130	19	Upper Suspension Support
	60	in.	5/8		0.049	4130	19a	Gear Braces
107		in.	5/8		0.049	4130		
115		ft	5/8		0.035	4130	1, 2, 3, 3a, 4, 5, 6, 7, 8, 17, 25	Cross Bracing, Rudder Pedals, Vert. Stab LE Fuselage Attach Post, Horiz Stab LE
	3	in.	1/2		0.120	4130	11	Brake Handle Base Pivots
	11	in.	1/2		0.120	4130	14	Engine Mounts
14		in.	1/2		0.120	4130		
	2.5	in.	1/2		0.095	4130	3a	Fuselage Wing Attach Points (drill out to 5/16")
	1.5	in.	1/2		0.095	4130	2	Tail Spring Front Attach Point (drill out to suit)
4		in.	1/2		0.095	4130		
60		in.	1/2		0.049	4130	14	Engine Mount
	36	in.	1/2		0.035	4130	6	Elevator & Rudder Cable Supports
	60	in.	1/2		0.035	4130	11	Brake Handles
	70	in.	1/2		0.035	4130	24	Vertical Stab Leading Edge
	5	in.	1/2		0.035	4130	3, 24	Vert Stab LE Fuselage Attach Post
14.25		ft	1/2		0.035	4130		
	5	in.	7/16		0.095	4130	8, 9, 16	Stick Pivots (3) & Stick Stop (drill out to 1/4")
	4	in.	7/16		0.095	4130	18	Control Stops (drill out to 1/4")
	5	in.	7/16		0.095	4130	20	Landing Gear Strut Bushings (drill out to 1/4")
	4	in.	7/16		0.095	4130	19a	Landing Gear Brace Bushings (drill out to 1/4")
	7	in.	7/16		0.095	4130	3, 25	Horizontal Stab Mounting (drill out to 1/4")
25		in.	7/16		0.095	4130		
	14	in.	3/8		0.095	4130	18, 23, 24, 25, 26	Tail Feather Hinges
	3	in.	3/8		0.095	4130	26a	Trim Tab Pulley Mounts (drill out to 3/16")
17		in.	3/8		0.095	4130		
	17	in.	3/8		0.035	4130	4	Seat Belt Shoulder Brackets
	170	in.	3/8		0.035	4130	23, 26	Rudder and Elevator Trailing Edges
187		in.	3/8		0.035	4130		
10		in.	5/16		0.065	4130	24,25	Tail Feather Brace Wire Tubes (drill out to 3/16")

Sheet Steel

Tot	Sq. In.	Count	Length	Width	Thick	Matl	Page #s	Use
4	4	2	2	1	0.250	4130	19a	Brake Band Anchor Plates
	8	4	2	1	0.125	4130	10, 11	Tabs for Seat Belt - Sta #3
	120	8	5	3	0.125	4130	12a	Strut fittings
	16	2	4	2	0.125	4130	19	Lower Suspension Center Point
	16	4	2	2	0.125	4130	19a	Lower Gear Strut Brace Tabs
	3	2	1.5	1	0.125	4130	19a	Tabs for end of Gear Brace
	16	4	2	2	0.125	4130	19a	Suspension Spring Adjust Washers
	8	2	2	2	0.125	4130	20	Axle Wheel Stops
	3	1	3	1	0.125	4130	5	Sta #8 Tail Wheel Spring Capture Bracket
	18	1	9	2	0.125	4130	23	Rudder Horn
	3	1	3	1	0.125	4130	25	Horizontal Stabilizer Center Brace
	14	1	7	2	0.125	4130	26	Elevator Horn
	20	2	4	2.5	0.125	4130	20	Main Gear Leg Gussets
	76	8	9.5	1	0.125	4130	41	Front Spar Strut Mount Straps
	135	4	3.75	9	0.125	4130	41a	Front Spar Strut Mount Plates
	107.3	4	8.25	3.25	0.125	4130	42b	Rear Spar Strut Mount Plates
	266	8	9.5	3.5	0.125	4130	20	Spar to Fuselage attach Straps
829.3					0.125	4130		
	16	4	2	2	0.062	4130	9	Stick Pivot Brackets
	12.5	8	1.25	1.25	0.062	4130	14	Engine Mount Washers
	6	2	2	1.5	0.062	4130	9	Stick Pulley Bracket
	4.5	4	1.5	0.75	0.062	4130	5, 18	Tabs for Tail Brace Wires
	4.5	3	2	0.75	0.062	4130	18	Tabs to Mount Control Stops
	6	4	2	0.75	0.062	4130	8	Mounting Tabs for Brake Handles
	4	2	2	1	0.062	4130	11	Tabs to Attach Brake Cables to Brake Handles
	13.5	6	3	0.75	0.062	4130	19, 19a	Suspension End Straps
	6	4	2	0.75	0.062	4130	20	Main Gear Leg Axle to Suspension Tabs
	72	8	3	3	0.062	4130	20	Main Gear Leg End Covers
	6	1	6	1	0.062	4130	26a	Trim Tab Horn
	9	1	9	1	0.062	4130	26a	Trim Lever
	3	1	3	1	0.062	4130	26a	Trim Tab Horn Tab
	7	4	3.5	0.5	0.062	4130	52a	Aileron Cable Guide Straps
170					0.062	4130		
	14	2	14	0.5	0.035	4130	3a	Wing Attach Safety Straps
	8	4	4	0.5	0.035	4130	4	Sta 2 & 3 Safety Straps
	1.5	1	3	0.5	0.035	4130	9	Stick Pivot Strap
	15	6	4	0.625	0.035	4130	4, 6, 10, 15	Rudder Pulley Brackets Sta 2, 3 & 5
	3.5	2	2	0.875	0.035	4130	11	Tabs for Brake Cable Housing, sta #2
	41	41	1	1	0.035	4130	2, 4, 12	Floor and windshield tabs
	6	6	1	1	0.035	4130	1	Tubing plugs, Sta #1, top 2, upper 4
	5	2	2.5	1	0.035	4130	17	Rudder Pedal Cable Attach Points
94					0.035	4130		

Misc Sheet Metal

Tot	Sq. In.	Count	Length	Width	Thick	Matl	Page #s	Use
1100	1100	10	55	2	0.025	mild steel	23, 24, 25, 26, 26a	Tail Feather Ribs
432	432	1	24	18	0.016	SS	5a	Engine firewall
	720	2	40	9	0.016	Alum.	11a	Seats
	576	2	18	16	0.016	Alum.	11a	Seats
1296					0.016	Alum.		
	64	1	8	8	0.125	Alum.	54	Aileron Bell Cranks
	12	2	6	1	0.125	Alum.	55	Aileron Horns
76					0.125	Alum.		

Misc Tubing

Tot	Indiv	Units	O.D.		Wall	Matl	Page #s	Use
13		in.	1		0.065	4130 Square	9	Aileron Horn and Base of Stick
4		in.	7/8		0.156	Alum Round	14	Engine Mount Inserts

Misc

Qty		Units	Width		Thick	Matl	Page #s	Use
3		in.	1 1/4	2	0.125	Angle Iron	5	Sta #8 tail wheel support bracket
24		in.	1/2	1/2	0.125	Angle Alum	49	Jury Strut Wing Fittings
5		in.			0.313	Steel Rnd Stk	19a	Brake Band Anchor Rod
3		in.	1/4		0.250	Steel Squ. Stk	19a	Brake Band Anchor "non Turn"
50		in.	2 1/2		1.000	Cub Strut	20	Main Gear Legs
24		in.			0.750	Axle Stk	20	Axles

Plywood

scrap sq.in.	Both Wings				Req'd sq.in.	Per wing - from the prints							
	cnt	Tot	Len	Wid		sq.in.	#	Len	Wid	Thickness	Matl	Page #s	Use
		1st			6760	3380	1	169	20	0.8 mm (1/32")	plywd	29, 31	Wing Leading Edges (15.25" + (2*1") + (2*1") = 19.25")
		2nd			1125	563	1	75	7.5	0.8 mm (1/32")	plywd	29, 38, 48	Aileron Leading Edges (6" + (2 * 0.75") = 7.5")
		3rd			672	336	4	48	1.75	0.8 mm (1/32")	plywd	29	Wing Tip Rib Caps
					156	78	26	2	1.5	0.8 mm (1/32")	plywd	29, 47, 48	Gussets - Trailing Edge
					2184	1092	14	52	1.5	0.8 mm (1/32")	plywd	29, 32, 33, 34-39	Gussets - Ribs
623	5	4.73	48	48	10897	5449				0.8 mm (1/32")	plywd		
					375	188	2	75	1.25	1.5 mm (1/16")	plywd	47	Wing trailing edges at aileron box
201	1	0.65	48	12	375	188				1.5 mm (1/16")	plywd		
					125	63	10	2.5	2.5	1/8"	plywd	29, 30, 30-A	Gussets - Diagonal Struts
					525	263	1	75	3.5	1/8"	plywd	38, 48	Aileron Spar Web
					2028	1014	1	169	6	1/8"	plywd	37, 40	Rear Spar Webs
					240	120	1	20	6	1/8"	plywd	40-b	Rear Spar Doublers
					48	24	1	4	6	1/8"	plywd	46	Aileron hinge reinforcement at wing tip
					2366	1183	1	169	7	1/8"	plywd	34, 40	Front Spar Webs
					280	140	1	20	7	1/8"	plywd	40-a	Front Spar Doublers
					840	420	4	15	7	1/8"	plywd	42, 43	Right Wing Root Spar Spacers
					912	456	1	48	9.5	1/8"	plywd	51	Wing Tips
	3	3.20	48	48	7364	3682				1/8"	plywd		
124	1		48	12						1/8"	plywd		
					1920	960	2	48	10	1/4"	plywd	31	Wing Leading Edge Ribs
					840	420	4	15	7	1/4"	plywd	42, 43	Left Wing Root Spar Spacers
					64	32	4	2	4	1/4"	plywd	38	Aileron Leading Edge Ribs
					192	96	2	12	4	1/4"	plywd	44	Aileron ends
					108	54	1	12	4.5	1/4"	plywd	47	Aileron hinge reinforcement inboard on wing
	1	1.36	48	48	3124	1562				1/4"	plywd		
332	1		48	24						1/4"	plywd		
0	1	1	48	48	2304	2304	1	48	48	1/4"	plywd	1,2	Floor Board

Cap Strip

Stock - both wings					Stock - per wing							
Scrap in.	total in.	Piece		Req'd in.	lineal "	#	len	Width	Thick	Matl	Page	Use
		cnt	len									
				116	58.00	2.0	29.00	3/4	5/16	Spruce	30	Compression Ribs Top #9, #11
4.0	120	2	60	116				3/4	5/16	Spruce		
				338	169.00	1.0	169.00	5/8	5/16	Spruce	31	Leading Edge Rib Strip
46.0	384	8	48	338				5/8	5/16	Spruce		
				338	169.00	1.0	169.00	1	3/8	Spruce	29, 39	Trailing Edge Rib Strip
46.0	384	8	48	338				1	3/8	Spruce		
				174	87.00	3.0	29.00	3/4	1/2	Spruce	30	Compression Ribs Top #3, #5, #7
				109	54.50	2.0	27.25	3/4	1/2	Spruce	30	Compression Ribs Bot #9, #11
				120	60.00	2.0	30.00	3/4	1/2	Spruce	40-b	Rear Spar Caps / Doubler
17.0	420	7	60	403				3/4	1/2	Spruce		
10.0	420	5	84	410	205.00	5.0	41.00	3/4	3/4	Spruce	30-a	Diagonal Struts
4.5	168	2	84	164	81.75	3.0	27.25	3/4	3/4	Spruce	30	Compression Ribs Bot #3, #5, #7
	588	7	84	574				3/4	3/4	Spruce		
22.0	360	2	180	338	169.00	1.0	169.00	3/4	3/4	Spruce	40	Rear Spar Caps Bot (can be 121" & 60")
				22	11.00	2.0	5.50	3/4	1	Spruce	49	Jury Strut Wing Spar Blocks
				338	169.00	1.0	169.00	3/4	1	Spruce	40	Rear Spar Caps Top (can be 121" & 60")
0.0	360	2	180	360				3/4	1	Spruce		
9.0	24	1	24	15	7.50	2.0	3.75	1 3/4	1	Spruce	46	Wing side Hinge Blocks
8.0	168	2	84	160	80.00	2.0	40.00	1	7/8	Spruce	40-a	Front Spar Caps / Doubler
22.0	360	2	180	338	169.00	1.0	169.00	1	7/8	Spruce	40	Front Spar Cap Bot (can be 121" & 60")
4.0	24	1	24	20	10.00	5.0	2.00	2	3/4	Spruce	30-a	Diagonal Struts gussets
8.0	48	1	48	40	20.00	1.0	20.00	3	3/4	Spruce	40-b	Rear Spar Cap / Doubler Filler
8.0	48	1	48	40	20.00	1.0	20.00	3	7/8	Spruce	40-a	Front Spar Cap / Doubler Filler
0.0	24	1	24	24	12.00	1.0	12.00	4	3/4	Spruce	42	Rear Spar Fitting to Fuselage wood filler
0.0	24	1	24	24	12.00	1.0	12.00	4	7/8	Spruce	42	Front Spar Fitting to Fuselage wood filler
0.0	338	2	169	338	169.00	1.0	169.00	1 1/8	7/8	Spruce	40	Front Spar Cap Top (can be 121" & 60")
				1512	756.00	14.0	54.00	1/4	1/4	Spruce	34 thru	Rib Tops
				1316	658.00	14.0	47.00	1/4	1/4	Spruce	34 thru	Rib Bottoms
				2212	1106.00	14.0	79.00	1/4	1/4	Spruce	34 thru	Rib Cross Bracing
				300	150.00	10.0	15.00	1/4	1/4	Spruce	47	Aileron housing edge bracing on wing
				400	200.00	10.0	20.00	1/4	1/4	Spruce	34 thru	Aileron rib cross bracing
236.0	5976	83	72	5740				1/4	1/4	Spruce		
8.0	72	1	72	64	32.00	2.0	16.00	1/4	1/2	Spruce	47	Aileron hinge braces
11.0	144	2	72	133	66.50	14.0	4.75	1/4	7/8	Spruce	34	front spar rib filler blocks
10.0	108	3	36	98	49.00	14.0	3.50	1/4	3/4	Spruce	37	rear spar rib filler blocks

Hardware

Qty		Description		Description	Page #s	Use
7		1" x 1/16"		Cotter Pins	6, 9, 10, 15	Cable Capture Pins
7		1/2" x 1/16"		Cotter Pins	23, 24, 25, 26	For Tail Feather Hinge Pins
7		3/16" x 1 3/4"		Hinge Pins	23, 24, 25, 26	Tail Feather Hinge Pins
18		3/4" OD x 1/4" ID x 3/4"		Fairleads & Snap rings	6, 9, 52a	For Elevator, Aileron, Trim Tab Cables
1		2 1/2"		Ball Bearing Cable Pulley	9	Elevator Reverse Dir Pulley
4		2"		Ball Bearing Cable Pulleys	12a, 55	Aileron Pulleys
	6	1"		Ball Bearing Cable Pulleys	15	Rudder Cable Pulleys
	4	1"		Ball Bearing Cable Pulleys	26a	Trim Tab Pulleys
10		1"		Ball Bearing Cable Pulleys		
4		1/2"		SS Cable Guards		Trim Tab Pulley Cable Guards
3		3"		Piano Hinges	26a	Trim Tab Hinges
48"		3/4" OD x 1/4" ID		Heavy Canvas Phenolic Rod	42c	Spar Inserts
2		9"	3/16"	Conn Rod, Ends & Lock Nuts & Pins		Aileron Bell Crank to Horn
2		86"	3.13"	Streamlined Alum Struts	52, 53	Front Wing Struts
2		86"	2.44"	Streamlined Alum Struts	52, 53	Rear Wing Struts
1		16"	1"	Strut End Material	52	Front Strut Filler Blocks
1		16"	3/4"	Strut End Material	52	Rear Strut Filler Blocks
2		72"	1.13"	Streamlined Alum Struts	53	Jury Struts
1				Jury Strut Kit	53	Jury Struts
2		AN218P4		Bearings	54	Bell Crank Aileron Cable to Rod Transition
6		1/8		Alum rivets	54	Bearing to Aileron Bell Crank
288		3/8"		Alum rivets	11a	Seats
0.25	lbs	5/8"		Aircraft Nails	34, 37	Aircraft Nails (4 / 28 ribs = 112)