

The "Bee Liner Materials and Hardware List" below contains all the materials and hardware required to build my Bee Liner. I will update this list as I proceed through the build.

Bee Liner Materials and Hardware List

As of 17 January 2025

Amount	Description	Use
Balsa		
4	1/16" x 3 x 36" balsa sheet	wing sheeting
2	3/32" x 6" x 36" balsa sheets	fuselage sides
3	3/32" x 4" x 36" balsa sheet	fuselage parts and sheeting
10	3/32" x 3" x 36" balsa sheets	wing ribs
18	1/16" x 1/4" x 36" balsa sticks	laminated stabilizers outline
2	3/32" x 3/16" x 36" balsa sticks	fuselage doublers
12	3/32" x 1/4" x 36" balsa sticks	fuselage and stabs
3	1/8" sq. x 36" balsa sticks	fuselage
17	3/16" sq. balsa sticks	outer wing sections spars
6	1/4" sq. x 36" balsa sticks	fuselage and stabs.
4	2" x 2" x 2 1/2" soft balsa blocks	motor nacelle cowl blocks
1	2 5/16" x 2 1/2" x 3 1/4" soft balsa block	fuselage nose block
1	1" x 1 1/2" x 1 1/2" soft balsa block	fuselage tail block
1	3/8" x 36" triangular balsa stock	motor nacelles firewall backup brace, fuselage bracing
Basswood		
3	3/16" sq. x 36" basswood sticks	wing center section spars
1	1/8" x 1/4" x 24" basswood stick	wing center section rear top spar
Plywood		
1	1/64" 3-ply model aircraft grade birch plywood	strengthen rudder/elevator/aileron control horn mounts
1	1/32" 3-ply model aircraft grade birch plywood	various wing, fuselage, and motor nacelle parts
1	1/16" 3-ply model aircraft grade birch plywood	wing ESCs bay cover
1	3/32" 5-ply model aircraft grade birch plywood	wing, firewall
1	1/4" 5-ply model aircraft grade birch plywood	wing front mounting plates
1	3/8" 7-ply model aircraft grade birch plywood	wing rear mounting bolts block
Other Wood		
1	1/8" x 12" Hardwood Dowel	horizontal stab & motor nacelles mounting pins
Flight Control System		
1	Spektrum AR620 6-Channel RC Sport Receiver	2.4GHz DSMX receiver
4	Hitch HS-81 16.6g Nylon Gear Analog Micro Servo	rudder, elevator, and aileron servos
1	Safety Clip Servo Y-Harness with JR/Hitec Connectors, 22ga 12 inch	aileron servo leads
2	TBD Servo Lead Extensions, 22ga	aileron servo leads
Electric Power System		
4	BadAss 2305-1050Kv Brushless Motors	
4	BadAss Rebel V2 Lite Series Brushless ESCs, 20A	
1	BadAss 45C 3,300mah 3S LiPo Battery	
2	APC 7x6E Propellers (Normal Rotation)	
2	APC 7x6E Pusher Propellers (Reverse Rotation)	
4	M5 x 0.8mm Thread Spinner Nuts	
1	XT60 Connector, Male	Wing Wiring Harness to LiPo Battery Connector
1	MR30 Connector Set, 4 Male	ESCs to Wing Wiring Harness Connectors
1	MR30 Connector Set, 4 Female	ESCs to Wing Wiring Harness Connectors

1	EC5-S Connector Set, 2 Male & 2 Female	ESCs to LiPo Battery Wiring Harness
1	Ultra-Flex Wire, 14-AWG Black, 3-Feet	ESCs to LiPo Battery Wiring Harness
1	Ultra-Flex Wire, 14-AWG Red, 3-Feet	ESCs to LiPo Battery Wiring Harness
2	Ultra-Flex Wire, 18-AWG Black, 10-Feet	ESCs to Brushless Motors Wiring Harnesss
1	Safety Clip Servo Y-Harness with JR/Hitec Connectors, 22ga 12 inch - ESC Control Lead (Throttle Channel)	

Extension Leads

2	Safety Clip Servo Y-Harness with JR/Hitec Connectors, 22ga 6 inch - ESC Control Lead (Throttle Channel)
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Extension Leads

2	LiPo Battery Strap, Small
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Miscellaneous Items

2	3" diameter & less than 1-1/2" wide light weight wheels - MLG wheels	
1	3/32" x 12" music wire	MLG axles
4	Du-Bro # 138 3/32" Wheel Collars	MLG axles
1	1/16" x 6" music wire	tailwheel wire
2	Du-Bro # 596 1/16" Wheel Collars	tailwheel assembly
1	Du-Bro # 125TW 1.25" Tailwheel	fuselage tailwheel
1	3/32" O.D. x 6" Tubing	tailwheel assembly
1	1/4" O.D. x 24" Aluminum Tubing	motor nacelle dummy exhaust pipes (air cooling vents)
2	Carbon tubes 1/4" diameter 24" long	horizontal & vertical stabilizers spars
1	Du-Bro # 142 1/4"-20 Nylon Wing Bolts (set of 4)	wing mounting bolts
1	Du-Bro #TBD Socket Head Bolts With Lock Nuts	motor cross brace to firewall mounting
12	Du-Bro #116 Standard Nylon Hinges	rudder, elevator, and aileron hinges
2	Du-Bro #237 T-style Nylon Control Horns (2 each)	rudder, elevator, and aileron rigging
2	Du-Bro #600 2-56 Spring Steel Kwik-Link Clevises	rudder, elevator, and aileron rigging
2	Du-Bro #855 E/Z Links	aileron rigging
7	12" 2-56 control rods, threaded one end	rudder, elevator, and aileron rigging
8	2-56 nuts	rudder, elevator, and aileron rigging
4	Small round magnets	battery hatch
1	Self adhesive velcro	battery mount & ESCs mounting
8	Servo mounting screws	attach motor nacelle cowls
1 roll	Double sided foam tape	attach control surface servos
1	TBD " x TBD " Clear Plastic Sheet	fuselage windows
3 rolls	Ultracoat covering	
1 bottle	Titebond Ultimate III wood glue	
1 set	15-minute epoxy	