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BD-4C

RANGE
900
MILES

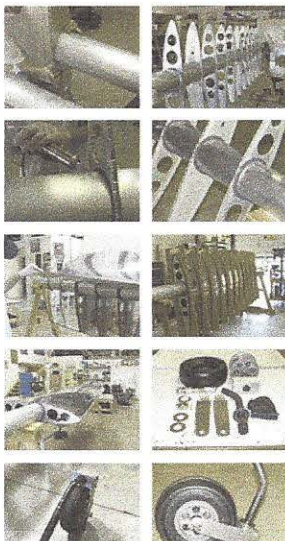
SPEED
191
MPH

LOAD
1150
LBS

MAX CLIMB
1700
FPM

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DESCRIPTION



Based on previous work with innovative light aircraft, the BD-1 (eventually developed into the American Aviation AA-1 Yankee) and the BD-2, Jim Bede designed the BD-4, the first real "kitplane" in the world. The design was based on a high-wing cantilever monoplane of conventional design, able to be fitted either with tail wheel or tricycle undercarriage, as the builder chooses.

The builder was also able to choose between building a two-seat or four-seat version. Bede wrote a 165-page BD-4 builder's book, "Build Your Own Airplane", that gives the amateur builder a good perspective on construction techniques. The intention was to have people with little or no fabrication experience start with a set of comprehensive plans and work up to a "bolt together" operation, using complex components provided from the factory. In order to simplify construction, there were few curved surfaces and most of the fuselage was made up of flat aluminum sheeting. The only major components with compound curves were the engine cowling and landing gear spats which were made of fiberglass. The fuselage is constructed of aluminum angle braces bolted together to form a truss frame. An innovative wing structure employed a "panel-rib" constructed in sections consisting of a rib whose upper edge was "extended" horizontally to become one section of the wing surface. The wing was progressively built up by sliding these sections together over the tubular

...tightening them together where they met. Although the original wing design was easy to build, current BD-4B features a redesigned, more conventional, metal wing with a tubular spar bonded to honeycomb ribs.

The BD-4C is a greatly improved four seat model with 1,200 lb (544 kg) empty weight and 2,400 lb (1,089 kg) gross weight. Estimated construction time is 700 hours. Two models completed and flown by 2011 with kits currently being assembled around the world.



FEATURES

The Next Generation BD-4C

ENGINEERED TO FAR-CERTIFIED STANDARDS

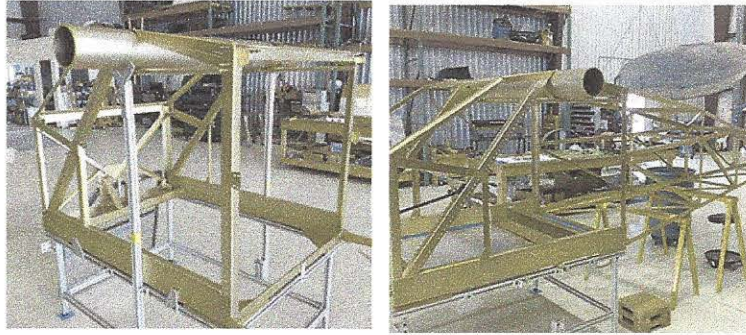
Design parameters were to build the safest aircraft possible using the most economical and easy-to-work aviation-grade materials. Specially designed parts are limited, including the aluminum honeycomb construction ribs and the tubular spar for the new all-metal wings. Although the BD-4C meets or exceeds the structural requirements for certified aircraft as specified in FAR – Part 23, it is not certified, and is intended for construction and operation only as an amateur-built airplane.

FUSELAGE

All-metal, internally stressed design. Designed for home shop construction. No welding, no complicated jigs. Gusseted and bolted aluminum frame angles form "erector set" safety cage. Sleek bonded .016 and .020 aluminum skin, blind-riveted load-carrying components. The Cockpit can be upholstered and trimmed to production aircraft standards. Spacious instrument panel accommodates IFR components.

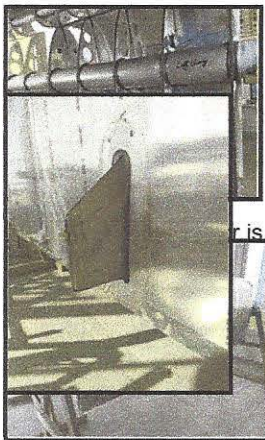
THE WING – "A LITTLE BIT OF HONEY"

Forget rivets. The all-metal wings of the BD-4C are tough and smooth. Second generation Jim Bede-designed all-metal "wet" cantilever high wing design with the same 64-415 modified airfoil. The bonded wing skin is rivet-free except for the trailing edge spar. Ribs are 1/2" aluminum honeycomb. 10, 20, and 30-degree flap deflection. Flaps and ailerons, designed to be removable, are torque-tube controlled. Rugged ready-to-mount 6.5" O.D. tubular main wing spars of 6061-T6 aluminum are sleeved for fast assembly to fuselage spar. Three-piece spar assemblies quickly, is light and strong, and permits foldable wing option. The all metal design incorporates a fiberglass fuel sump to alleviate any possibility of fuel starvation. The new wing is available in kit form from BedeCorp, or visit our Build Center for explicit help which usually takes 3 days.



LANDING GEAR

The BD-4C uses S-ply main gear struts to replace the original aluminum struts. The internal components of the gear box are solid state with no welded components. The nose wheel is a custom designed full castering wheel that replaces the Scott tail wheel. The new wheel is available for separate purchase on older aircraft. The BD-4C can be tricycle or tail dragger configuration.



EMPENNAGE

The BD-4C is an all-flying design with 2.5" OD 6061-T6 tubular spar, 63-009 airfoil, 36" chord, light aluminum honeycomb ribs bonded similar to the wings. Vertical tail is bonded to the fuselage. Both tails are fixture built and come assembled in the kit.

CONTROLS

Most of the BD-4C controls remain unchanged from the original 'B' version. The trim has been redesigned using a push pull cable and is actuated by a quadrastat, eliminating the weight and complexity of the original wheel design. The flaps and ailerons quickly disconnect from the fuselage when removing the wing.

S P E C I F I C A T I O N S

Performance Specifications:				BD-4C Selected Dimensions and Capacities:	
	180 HP	200 HP	260 HP	<u>Wing Span</u> 26.20 feet	
Max Gross Weight	2400 lbs	2400 lbs	2400 lbs	<u>Folded Wingspan:</u> 7 feet	
Empty Weight	1250 lbs	1250 lbs	1290 lbs	<u>Height (tricycle gear):</u> 7.23 feet	
Useful Load	1150 lbs	1150 lbs	1110 lbs	<u>Length:</u> 22.60 feet	
Wing Loading	23.20 lbs/sq ft	23.20 lbs/sq ft	23.20 lbs/sq ft	<u>Landing Gear:</u> Fixed tricycle or tail wheel configuration.	
Power Loading	13.33 lbs/hp	12.00 lbs/hp	8.00 lbs/hp	<u>Cabin Width:</u> 46 inches	
Cruise Speed – 75% power	189 mph	191 mph	233 mph	<u>Cabin Length:</u> 103 inches	
Cruise Speed – 65% power	171 mph	174 mph	221 mph	<u>Fuel Capacity:</u> 51 to 80 gallons	
Stall Speed – flaps down	55 mph	55 mph	55 mph	Ultimate G Load Limits*	
Stall Speed – flaps up	61 mph	61 mph	61 mph	BD-4C @ 2000 Lb. gross:	
Rate of Climb – maximum	1400 fpm	1700 fpm	2400 fpm	Positive 6.3 G, Negative 6.3 G.	
Take Off Run	600 ft	600 ft	550 ft	BD-4C @ 1400 Lbs. gross:	
Take off Run over 50' Obstacle	1000 ft	1000 ft	900 ft	Positive 9 G, Negative 9 G.	
Landing roll	600 ft	600 ft	600 ft		
Maximum Range	900 miles	900 miles	900 miles		

Recommended Airspeed Limitations @ 2000 gross pounds:

- Never Exceed Speed: 261 MPH.
- Maximum Rough Air Speed: 179 MPH.
- Maximum Speed @ 10° flaps: 130 MPH.
- Maximum Speed @ 20-30° flaps: 133 MPH.

**The BD-4C, as a 4-place 2400-Lb. gross airplane, currently exceeds the required standards for the "Normal" FAA certification category. As a 2-place plane, it exceeds the required standards for the "Aerobatic" category. However, this design is not certified, and is intended only for construction and operation as an amateur-built aircraft.*

P R I C I N GItem # BDC101 = BD-4C Fuselage Package ---

Kit includes all formed aluminum angles, precut gusset's, aluminum skins, center section and hardware *Builder Assist Package Available

Item # BDC102 = BD-4C Metal Wing Package ---

Kit includes all precut honeycomb ribs, wing spars, formed rear spar, formed wing skins, new fuel pickup system, Proseal and electric fuel senders. Kit includes flap and aileron formed skins, precut mahogany ribs, aileron torque tubes.

*Builder Assist Package Available

Item # BDC103 = BD-4C Control Package ---

This kit includes the bonded vertical and horizontal tail section, all bearings and hardware. Also included is all the weldments, push pull rods, trim system needed for the internal control systems.

Item #BDC104 = BD-4C Landing Gear Package ---

Kit includes S-Ply landing gear struts, formed nose gear strut, redesigned landing gear box, nose gear wheel, main gear wheels, brakes, tires and tubes, all hardware, aluminum support angles, master cylinder, brake lines and all hardware

Item # BDC105 = BD-4C Finish Package --

Kit includes Plexiglas, wing tips, vertical and horizontal tips, all hardware

Item # BDC110 = BD-4C Complete Package --

Kit includes all 6 packages. Items not included in the Complete Package: Engine, propeller, cowling, instruments, exhaust system. All of which are available through BEDECORP.

Item # BDC111 = BD-4C Complete Firewall Forward Package --- Call For Pricing

Kit includes cowling, engine mount, baffling, avionics panel, and more!

OPTIONAL EQUIPMENT

Recommended Engines (180-260hp) -- Call For Quote

Lycoming

Continental

Superior -- Special Pricing Available

Titan -- Special Pricing Available

UL Power -- Special Pricing Available

Avionics -- Call For Quote

Dynon

MGL -- Special Pricing Available

Garmin

Propellers (72" diameter, 2 blade recommended) -- Call For Quote

Hartzell

Prince Aircraft

Airmaster

Whirlwind

HOME MOVIES

[BD-4C Cockpit Video in N4BD](#)

[BD-4 Builder Short Field Take-off](#)

[BD-4C Wing Bonding And UL Engine Mounting Time Lapse](#)

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