

## BOWERS FLYBABY 1A / 1B

Issue 1 Initial Issue dated 10.4.07

1. USA contact

Following the death of the designer Pete Bowers, drawings are available from

David R. Bowers  
13730 Burke Rd.  
Los Altos Hills CA 94022-3549

See also the unofficial Bowers site at <http://www.bowersflybaby.com/#general>

2. Description

The Bowers Flybaby is a single seat aircraft of conventional all-wood construction and classic appearance, with safe and predictable flying characteristics and excellent handling. The Flybaby can be configured either as a monoplane (Flybaby 1A) or a biplane (Flybaby 1B). The aircraft was designed by Pete Bowers, a noted aviation historian, in the early 1960s as a practical 'entry level' homebuilt. The monoplane is the standard and by far the most common model. The biplane conversion involves four new wing panels and a centre section. Both versions use wire-braced wings. The undercarriage is unsprung, relying on 8.00 x 4 or 8.00 x 6 balloon type tyres for shock absorption.

The Flybaby was designed for Continental engines ranging from the A65 to the O-200. While the A65 will fly the aircraft adequately, a Continental C90 is the ideal, particularly for the biplane version.

While the drawings for the monoplane version are comprehensive, the drawings for the biplane wings were never completed however the incomplete drawings were supplied by Bowers for many years, supplemented by rough sketches. LAA members contemplating building the biplane conversion should contact LAA Engineering for guidance.

3. Fast Build Kit 51% Compliance

Not applicable - the Flybaby is built from drawings rather than a kit.

4. Build Manual

The drawings provided by Peter Bowers were in build manual form including detailed instructions.  
The details of the biplane conversion was supplied in the form of a supplement.

5. Build Inspections

Build inspection schedule 1 (Wooden aircraft ) for Flybaby 1A or for biplane model, Flybaby 1B schedule 1B (wooden biplane).  
Inspector approval codes A-A or A-W. Inspector signing off final inspection also requires 'first flight' endorsement

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6. Maintenance Manual

Nil supplied. In the absence of a special maintenance schedule, owners are recommended to follow the LAMS schedule.

7. Flight Manual

Limited pilot's notes are provided in the Flybaby build manual.

8. Mandatory Permit Directives

None applicable specifically to this aircraft type, but note

MPD: 1998-019-R1. Flexible Fuel Tubing. Applies to all aircraft.

9. LAA Mandatory Modifications

Nil.

Note that the 'alternative' methods for attaching the flying wires and landing wires to the wing spars suggested on the drawings are not approved by LAA, due to the lack of sufficient detail or stressing information.

10. Service Bulletins

Nil.

11. Standard Options

- Monoplane or biplane configurations (one UK example, G-BNPV, has flown in both configurations)
- Junkers look-alike conversion per G-BNPV
- 4130N steel plate parts which are not welded may be made from S515 material. S515 parts must however be heat treated to S514 condition to achieve equivalent strength as 4130N. The heat treatment is carried out after any forming operations.
- Leading edges of wings and tail surfaces and the rear cockpit coaming and headrest may be skinned in 1/16" birch ply rather than thin aluminium.
- Piper J3 Cub fuel tank, wheels and brakes, engine mount, cowl 'eyebrow' scoops and cowl nose bowl may be adapted to suit.

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12. Special Inspection Points

- Aircraft Spruce selected to BS V37 or Douglas Fir to V36 to be used throughout, despite the designer's suggestion of good quality ladder spruce.
- Mahogany marine plywood may be used where called for in the build manual, must be to BS1088
- Hardwood to be ash selected to BS3V4.
- Wood adhesive to be Aerolite 306 or Aerodux 500 or T88 epoxy or West System epoxy resin 105 and hardener 205/206.
- Drilling the wing spar blocks for the long bolts which attach the flying wire and landing wire attachment brackets is a tricky operation, as the long drill tends to wander, eroding critical edge margins. Inspectors should check this critical area particularly carefully.
- All welding critical to airworthiness to be carried out by a suitably aircraft approved welder
- All wing and tail bracing wires to be proof load tested to 2/3 rated strength before installation.
- Fabric covering to be carried out in accordance with covering system manufacturer's instructions including rib stitching unless specifically permitted to be used without rib stitching.
- Check gravity fuel flow carefully at the carburettor float bowl drain plug, with aircraft in steep climb attitude and fuel tank almost empty. Must exceed 150% of max full throttle engine fuel consumption

13. Operating Limitations and PlacardsFlybaby 1A

Maximum number of occupants authorised to be carried: One  
The aircraft must be operated in compliance with the following operating limitations, which shall be displayed in the cockpit by means of placards or instrument markings:

## Aerobatic Limitations

- Intentional spinning is prohibited
- Aerobatic manoeuvres are prohibited

## Loading Limitations

- Maximum Total weight Authorised: 925 Lbs (some examples cleared with max take off weight of 972 Lbs depending on engine power)
- CG Range: 10" to 17" aft of datum.
- Datum Point is: Leading Edge of Wing

## Engine Limitations

- Maximum Engine RPM: As applicable to engine type fitted

## Airspeed Limitations

- Maximum Indicated Airspeed: 135 mph

## Other Limitations

- The aircraft shall be flown by day and under Visual Flight Rules only.
- Smoking in the aircraft is prohibited.

## Additional Placard

"Occupant Warning - This Aircraft has not been Certificated to an International Requirement"

Fireproof plate must be fitted engraved with aircraft's registration letters

BOWERS FLYBABY 1A / 1B

Flybaby 1B

Maximum number of occupants authorised to be carried: One  
The aircraft must be operated in compliance with the following operating limitations, which shall be displayed in the cockpit by means of placards or instrument markings:

Aerobatic Limitations

- Intentional spinning is prohibited
- Aerobatic manoeuvres are prohibited

Loading Limitations

- Maximum Total weight Authorised: 972 Lbs
- CG Range: 9" to 12" aft of datum.
- Datum Point is: centreline of main landing gear axle

Engine Limitations

- Maximum Engine RPM: As applicable to engine type fitted

Airspeed Limitations

- Maximum Indicated Airspeed: 135 mph

Other Limitations

- The aircraft shall be flown by day and under Visual Flight Rules only.
- Smoking in the aircraft is prohibited.

Additional Placard

"Occupant Warning - This Aircraft has not been Certificated to an International Requirement"

Fireproof plate must be fitted engraved with aircraft's registration letters

14. Special Test Flying Issues

Advice on preparations for first flight and carrying out the test program are included in the build manual.

The only biplane version in the UK was found to require significantly different tailplane incidence setting when flown as a biplane compared to when flown as a monoplane. This is adjustable at front tailplane mounting brackets to fuselage.

15. Control surface deflections

Ailerons	Up: TBD
	Down: TBD
Elevators	Up: TBD
	Down: TBD
Rudder	Left and right TBD

Approved :

F.R. Donaldson  
Chief Engineer

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