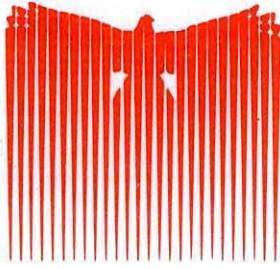


mainair sports



Mainair Sports Ltd.
Unit 2, Alma Industrial Estate, Regent Street,
Rochdale Lancs. OL12 0HQ England.
Telephone: Rochdale (0706) 55134
Telex: 635091 Albion G-Attention/Mainair
Fax: (0706) 55135

Date: 2nd Oct 1989

BULLETIN NO. 33 - ISSUE 2

Dear Pilot/Owner,

Further to bulletin No. 33, issue 1. Please find the amended pages 5 and 13A of the aircraft manual. Please remove the existing pages and replace with the new ones.

Also please find enclosed two labels, the main placard label should be fitted to the main keel in place of the existing label, and the notice/warning label should be fitted to the left-hand 'A' frame upright instead of the existing label.

If you have any queries, please do not hesitate to contact me at the above address.

John Bridge
Technical Manager



SPECIFICATIONS

Max total all-up weight	- 344 kgs Flash & Flash 2 - 370kg Flash 2A.
Max occupant weight	- 180 kgs
Max load factor	- 4G P. 2G N. with 1.5 safety factor
Load composition	- 1 or 2 occupants
Min all-up weight	- 234 kgs
Fuel capacity	- 4.75 gallons (17kg)
Stall at min load (Height Loss)	- 22 knots (25MPH) (80')
Stall at max load (Height Loss)	- 24 knots (28MPH) (90')
Stall height loss at 30° bank	- 80 ft
Max nose down at stall	- 8°
Cruise speed	- 43 knots (49MPH)
Never-exceed speed (VNE)	- 77 knots (89MPH)
Min approach speed - engine at idle	- 36 knots (42MPH)
Best rate-of-climb speed	- 36 knots (42MPH)
Landing run at max load - clear 15 M obstacle	- 230M
Take-off run at max load- clear 15 M obstacle	- 181M
Climb rate fully laden	- 150M/min (500 fpm) 532 engine 600ft/min approx
Climb rate min load	- 300M/min (1000 fpm) 532 engine 1200ft/min approx
Max wind operating conditions	- 18 knots (21 MPH)
Max cross wind conditions	- 8 knots at 90° (10 MPH)
Power off rate of descent	- 167M/min approx
Power off ground distance covered	- 1315M/min (7.84 : 1)

ENGINE OPTIONS	ROBIN 440cc	ROTAX 447cc	ROTAX 503cc	ROTAX 462cc	ROTAX 532
Reduction type	Tooth belt	2.581.1 gearbox	2.581 gearbox	2.581 gearbox	2.581 gearbox
Dry weight	146kg	146kg	147kg	149kg	150kg 2-blade prop single tank
Fuel Mix	32:1 run in 40:1 after 10 hrs	50:1	50:1	50:1	50:1
Rec. max engine temp EGT	1,500°F (815°C)	1,500°F	1,500°F	1,500°F	1,500°F Water temp 85°C
Rec. max engine temp CHT	425°F (218°C)	425°F	425°F	425°F	425°F
Rec. max engine speed	6,900rpm	6,900rpm	6,900rpm	6,900rpm	6,900rpm
Propeller	62x30 RT	62x37 RT	62x40RT 62x3-blade at 107°at 12"stn	62x44 RT 62x46 62 x 3-blade at 107°at 12"stn	62x3-blade at 110°- 12" station

Note: *This installation has not been noise certificated in the UK and accordingly cannot be operated under UK Permit to Fly

Note: Recommended max engine temperatures and speeds can be exceeded for very short periods without immediate damage. However, you are strongly recommended not to exceed the limitations at any time. Engine speed (RPM), cylinder head temperature and exhaust gas temperature gauges are all available to enable accurate monitoring. If the aircraft is operated in accordance with the above specifications under ISA + 15°C max and the fuel air mix is correctly adjusted, the limits recommended will not be exceeded. Beware of high temperature days and long periods of stationery running.

PERMITTED MANOEUVRES.

Pitch angle - nose up/down not to exceed 30°. ALL AEROBATIC MANOEUVRES ARE PROHIBITED. including: Whipstalls, Wingovers, Tailslides, Loops, Rolls and Spins. Angle of bank not to exceed 45°.

GENERAL SPECIFICATIONS

Airframe	- multi sleeved 2 1/8"- 2"- 1 3/4" x 17 swg - Drawn seamless HT - 30 - TF Anodised.
Aluminium fittings	- NS8 sheet & H30 machined components
Bolts & Nuts	- Airframe bolts AN Series 3/16, 1/2, 5/16, & 3/8.
Rigging	- 7 x 7 x 4mm Stainless steel, 3 & 2mm coated 7x7 galvanised.

Dimensions

Span	- 10.55
Height - Kingpost to Trike connection	- 1370
Height - Base bar to Trike connection	- 1500
Overall height	- 2870
Length - nose to tip of keel	- 3300
Rigged weight of wing	- 51 kg
Standard de-rigged length (wing)	- 6000
Short packed de-rigged length (Wing)	- 4500
Max suspended load from Trike connection (Wing)	- 300 kg
Wing stressed to + 4 - 2 with 1.5 safety factor at all up weight of 350 kg (+6-3)	

Dimensions - fully-assembled Flash Wing/Gemini Trike

Height - floor to kingpost top	- 3.83 Mts
Width - batten tip to top	- 10.6 Mts
Length - wing tip rear to cockpit nose	- 3.46 Mts

reversed IE entering a steep say left hand 360° turn from a steep right hand one. At the cross over between the two turns the trike unit is accelerated and can induce a far higher bank angle than that required or anticipated by the pilot.

INVERTED FLEXWINGS DO NOT FLY. THE TRIKE UNIT WILL FALL INTO THE SAIL AND SEVERE STRUCTURAL DAMAGE WILL RESULT.

High Speed Stall

The stall speed increases as the load increases. A manoeuvre which induces " g " loadings (60° bank turn = 2g) will also increase the stall speed. If the Flash is flown in a steep bank turn and the bar is pushed out, it will lose airspeed and may enter a stall at a surprisingly high speed. During special flight tests by company test pilots a high speed stall was induced at a speed in excess of 75 MPH. A high speed stall entered during a steep turn will cause the aircraft to tighten its turn and may result in a vertical or near vertical dive.

WARNING

DO NOT EXCEED THE LIMITATIONS - 45° BANK ANGLE 30° PITCH - NON AEROBATIC.
POSITIVE LOADING MUST BE SUSTAINED AT ALL TIMES.

WAKE TURBULENCE.

As an aircraft flies it leaves severely disturbed air behind it. Avoid flying, taking off or landing closely behind another aircraft and be particularly careful of flying into your own wake turbulence. It is very easy to fly into your own wake during 360° turns and the effect can be quite violent. Microlights have been rolled as much as 90° turns by flying into their own wake. If you already happen to be in a bank the potential results are self evident. Wake turbulence is greatest at high g loadings, during turns or slow flight.

Ground Handling - Sloping Fields

The Gemini is very stable, but be aware that the wing high above your head can affect the stability, particularly on sloping ground. Always try to cross slopes at 90° rather than sideways. Geminis with full span are also less stable when operating on sloping ground and extra care must be taken.