

No: 6/84	Microlight	Ref: EW/C866
Aircraft type and registration:	Gemini Striker Microlight G-MMWW (single-engined microlight aircraft)	
Year of manufacture:	1984	
Date and time (GMT):	14 March 1984 at 1710 hrs	
Location:	Field adjacent to North West Microlight Flying Field Boothstown, Manchester	
Type of flight:	Demonstration	
Persons on board:	Crew – 2	Passengers – Nil
Injuries:	Crew – 2 (fatal)	Passengers – N/A
Nature of damage:	Destroyed	
Commander's Licence:	PPL Group 'D'	
Commander's Age:	32 years	
Commander's total flying experience:	277 hours (of which 57 were on type)	

The Gemini Striker is a combination formed of a Flexiform Sky Sails, Dual Striker wing and a Main Air Sports Gemini tricycle, control being achieved by weight shift.

The dual striker wing structure (Diagram 1) is formed of a pair of tubular leading edge members hinged at their inboard end to the forward end of the tubular keel, allowing the wings to fold back along the keel for transportation. A king post above and an 'A' frame below the keel support the rigging wires which carry the wing vertical loads. A bowsprit of the same diameter and forming a forward continuation of the keel carries the rigging wires which control wing sweep, acting in opposition to sail tension. It is held in position on the front of the keel by the bowsprit slider, a tube which is a tight sliding fit over the bowsprit/keel junction where it is pinned through the keel. In addition, on most models further wires from the king post and 'A' frame provide vertical support to the bowsprit. (Wires 'X' and 'Y'.)

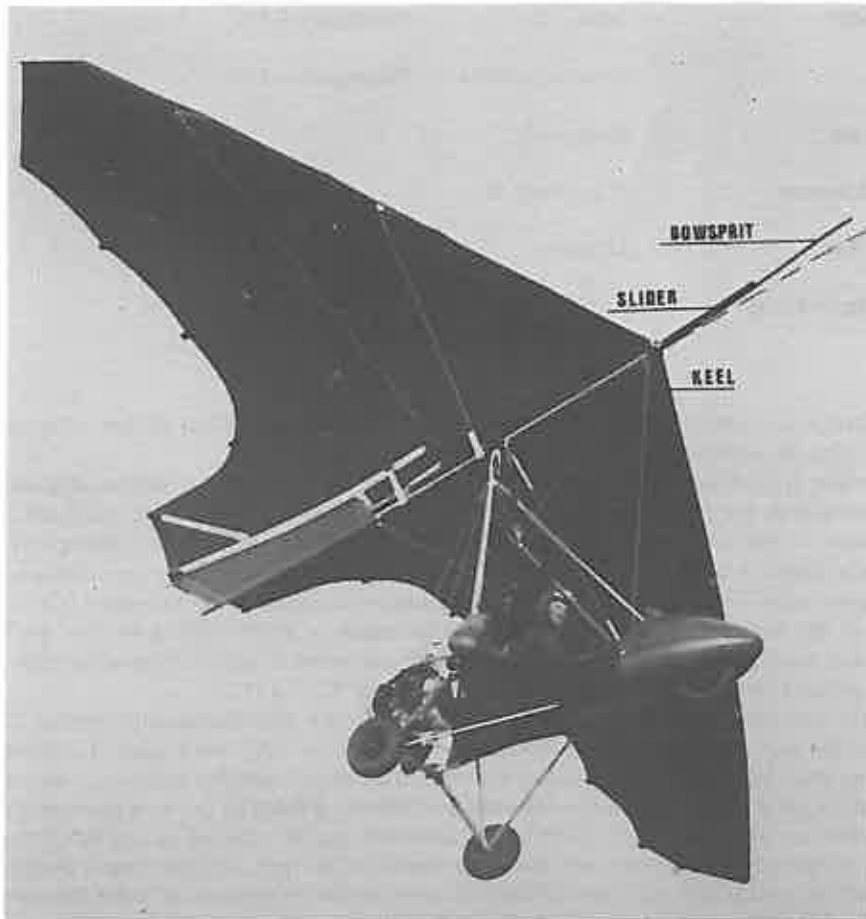
During static positive load testing undertaken to demonstrate compliance with section 'S' of BCAR it was noted that the wires between the bowsprit and the 'A' frame ('X') went slack. Flexiform determined that these wires were ineffective and modified the rigging on some machines removing them, along with the king post to bowsprit wire ('Y') from the bowsprit and attaching them to the nose plate at the keel to wing leading edge junction (Diagram 2). In addition the bowsprit was lengthened to increase the angle between the outboard wing leading edge wire and the wing leading edge itself. As the wing is designed and rigged with some dihedral, which can only be increased by wing loading in positive 'g' flight the wing leading edge wires attempt to lift the bowsprit to be resisted only by the bowsprit slider in this configuration.

A customer soon to take delivery of a Gemini Striker was visiting Flexiform and a company representative chose to use such a modified aircraft to demonstrate pre-flight rigging and some of the in-flight handling characteristics. The aircraft was seen by a number of people flying in the vicinity of the field used by the North West Microlight Club near Boothstown Manchester when the wings folded and it fell to the ground in a steep nose down attitude. The aircraft was destroyed and both occupants killed.

Examination of the wreckage revealed an in-flight structural failure, the bowsprit slider had fractured due to up load at the bowsprit/keel junction.

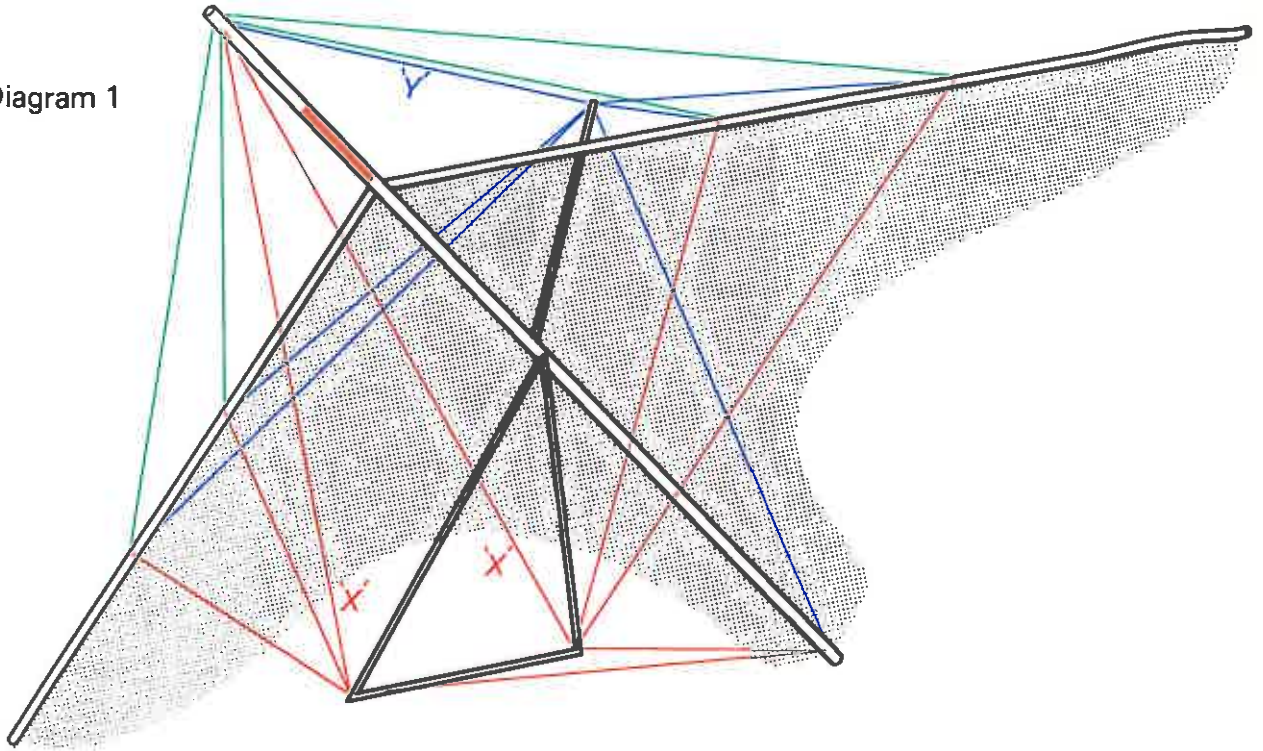
A photograph (see attached) of the craft in flight some days before the accident was provided by Flexiform and this showed the bowsprit to be noticeably bending up at its tip.

This rigging modification had been incorporated on six aircraft the locations of which were established from the manufacturer and their owners were advised not to fly them by a British Microlight Aircraft Association representative.



3. ACCIDENT CRAFT
Note: Modified Rigging and Upbend of Bowsprit

Diagram 1



- King post rigging wires
- A frame rigging wires
- Wing leading edge to bowsprit rigging wires

Diagram 2

