



www.falcomposite.com

Three Italians are the driving force of the Falcomposite team assembled to design and build the Furio LN 27 RG project in Auckland. Forming the management team; Giovanni Nustrini, Lapo Ancillotti and Lapo Nustrini have combined their talents of aircraft marketing, advanced composite construction and computer aided 3D design processes to create a challenger for the crown of composite construction. The high performance two seat Furio traces its parentage back to the all-wood Falco and is primarily designed as a kit aircraft to be finished by the buyer in considerably less time than any other composite kit aircraft currently on the market.

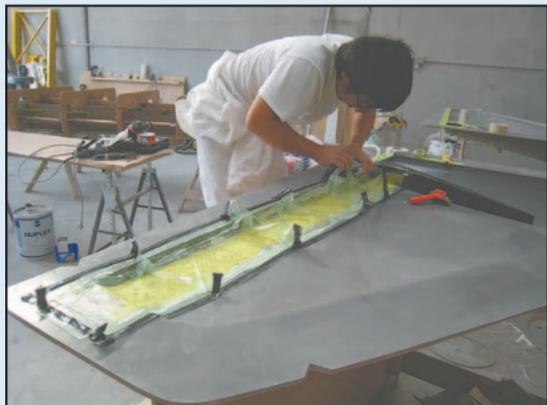
Luciano Nustrini, an architect who passed away in 2000, had previously worked with Falco designer Stelio Frati to develop his Falco. Nustrini's LN27 project was the inspiration for the design team and by employing sophisticated computer modelling techniques, stringent methodology reviews and rigorous scientific analysis in compliance with FAR23 regulations transformed a chrysalis into a butterfly.

Back in 2004 Falcomposite initiated a feasibility study for the Furio and assisted by grants from Trade and Enterprise NZ and the NZ Foundation for Research and Technology. The project received a green light from its management team following a year's research. Investment partners were then sourced.

The Furio concept is based on a considerable reduction in airframe parts to make up the kit. Lapo Ancillotti has used yacht design concepts to spearhead the project and the airframe has been design with solely composites in mind thus moving beyond the idea that



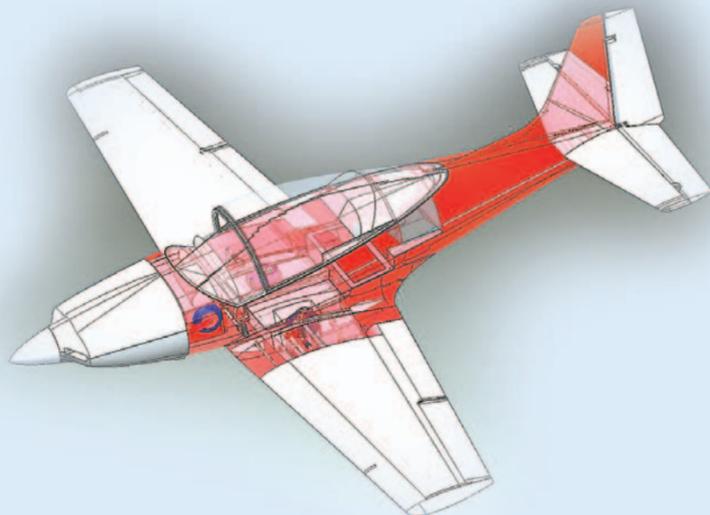
The non-flying fiberglass showing engine mount installation. The initial aircraft will fly with either a Superior XP IO-360 or a Lycoming XIO-360M1A. The engine will drive an MT 3 blade scimitar propeller with constant speed unit.



A test to verify the vacuum works on the fuselage mould in the fin area.



A view of the non-flying fuselage made of fibreglass not carbon to test the infusion process and placement of systems within the airframe.

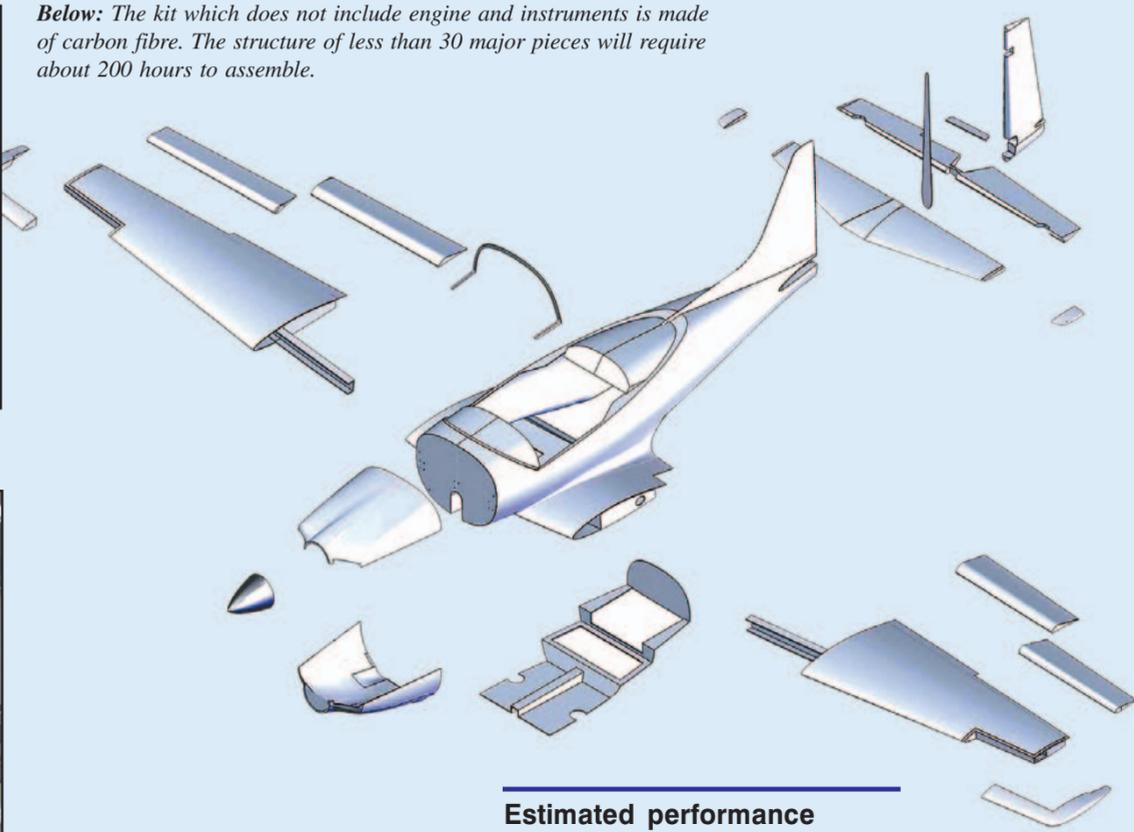


Design using 'Solid Works' allows the first aircraft to be a pre-production airframe. All systems are engineered within the programme and their function can be fully monitored before being fabricated and installed on the airframe. It's a case of right first time.



Above: A blend of function following form. Modern composite manufacturing techniques as used in Americas Cup boats results in an airframe containing fewer than 30 major components.

Below: The kit which does not include engine and instruments is made of carbon fibre. The structure of less than 30 major pieces will require about 200 hours to assemble.



Estimated performance

Maximum speed:	190kts
Cruise speed @75% at 7,000'	182 kts
Stall full flap:	50 kts
Rate of climb:	2,000 fpm
Range:	787nm+ 30min reserves@65% at 7,000'

Specifications

Length	6.8m
Wingspan	8.02m
Cabin width (interior)	1.1m
Empty weight	580 kg
MTOW (utility)	980 kg

LESS BRUSH AND GLUE

"Composite kits: too much work"

A composite sport aircraft is considered to be of high class and capable of high performance. Builders have these parameters in their minds, only to find kits on the market today comprise an unnecessary number of parts and require 3000 plus hours to assemble. For many the dream is never realised. Time is required to build fast sophisticated airplanes on your own.

"With the Furio" confirms Giovanni Nustrini, "we want to create an object that, because of the reduced number of parts that make the structure, will require a much shorter time to build. In particular we wanted to create a composite kit aeroplane that would require the least amount of resin use by the amateur constructor. The "Achilles heel" of other composite kits is what we would call the excessive use of brush, epoxy adhesives, vacuum bagging techniques, tools the amateur builder often does not possess to assemble the parts.

In the case of the Furio the main components are assembled 'in the moulds' at the factory, and often come out of the mould as 'one component'. They therefore do not require any further bonding by the builder.

The Furio kit is shipped on a saddle - which will be useful for assembly- in a 20 foot container which contains everything for the construction of the airframe and the systems.

As appearing in the July 2007 issue of Aviation News

www.aviationnews.co.nz