

Sperocco MJ51-C N3LM

\$324,000



Video walkaround

Mp4 version: [Link here](#)

Background

The Jurca MJ51-C Sperocco (Special Sirocco) is a plans-built two-seat tandem aerobatic aircraft derived from the Jurca MJ-5 Sirocco.

This plans-built aircraft is the only one finished and flying in the world. The builder's attention to detail throughout is evidenced by his EAA Gold Lindy plans-built aircraft award at Oshkosh 2021.

Design and development

Encouraged by friends and previous customers, [Marcel Jurca](#) designed the Sperocco in 1969 as an improved, higher power Sirocco¹. The initial Sperocco design had a longer, stronger fuselage capable of engines up to 200 hp (149 kW) and the wings of the MJ-7 Gnatsum without dihedral. Other changes in the original design included a raised rear seat, a longer canopy and a modified tail.

Encouraged by Lowell Manary, owner of this unique plans-built aircraft, Marcel Jurca then designed the Sperocco MJ51-C with a stronger wing and a more rounded fuselage to support engines up to 360 Hp (268 kW). Jurca said the MJ51-C was his favorite two-seat design.

¹ A test specimen of the original Sirocco was load tested by the French government and full-scale Jurca fighter replica was stress analyzed and submitted as an engineering graduate thesis.

Lowell regularly consulted with Marcel Jurca including several in-person design meetings. Marcel also traveled to the U.S. to inspect Lowell's Sperocco during the build process.

Awards

Homebuilt plans-built Grand Champion Gold Lindy. EAA AirVenture Oshkosh 2021 ([link](#))

Videos

Oshkosh 2021:

- "More than 30 years after starting the project, Lowell Manary's now-completed Jurca Sperocco brings a dash of World War II fighter to the homebuilding world"
<https://www.youtube.com/watch?v=COhEmcCfD-o>
- Facebook feature: <https://www.facebook.com/watch/?v=1052163322117316>

Articles

- "Homebuilt Sperocco Starts With a Good Plan and Makes It Better"

Excerpt

"It is gray and subdued, an understated exterior for a smooth custom homebuilt firmly rooted in the plans of the legendary Marcel Jurca. But the Sperocco that visited AirVenture Oshkosh 2021 reveals a number of structural and aerodynamic touches applied by owner/builder Lowell Manary, EAA Lifetime 52692.

[Link to entire article.](#)

- Sport Aviation October 2022 – pages 66-75 ([article link](#))

Additional Documentation

Collection of manuals available with purchase:

- Electrical system. Wiring systems, buss connections, wire diagrams, ...
- Maintenance. Build documentation...where to source off-the-shelf parts and related build systems-descriptions
- Pilot Operating Handbook. V-speeds, weight-n-balance and pertinent operational information
- Flight Test documentation. Deterministic performance graphs, test flight results supporting POH

Build Process

Basic construction materials are MIL-S-6073 spruce and ash boards and MIL-P-6070 birch and mahogany plywood. T-88 glue used throughout. West System Epoxy was used to seal all internal wood structures before closing.

Prime reference material used was "Design of Wood Aircraft Structures" by Forest Products Laboratory and AC43.13 from the FAA and of course Jurca plans.



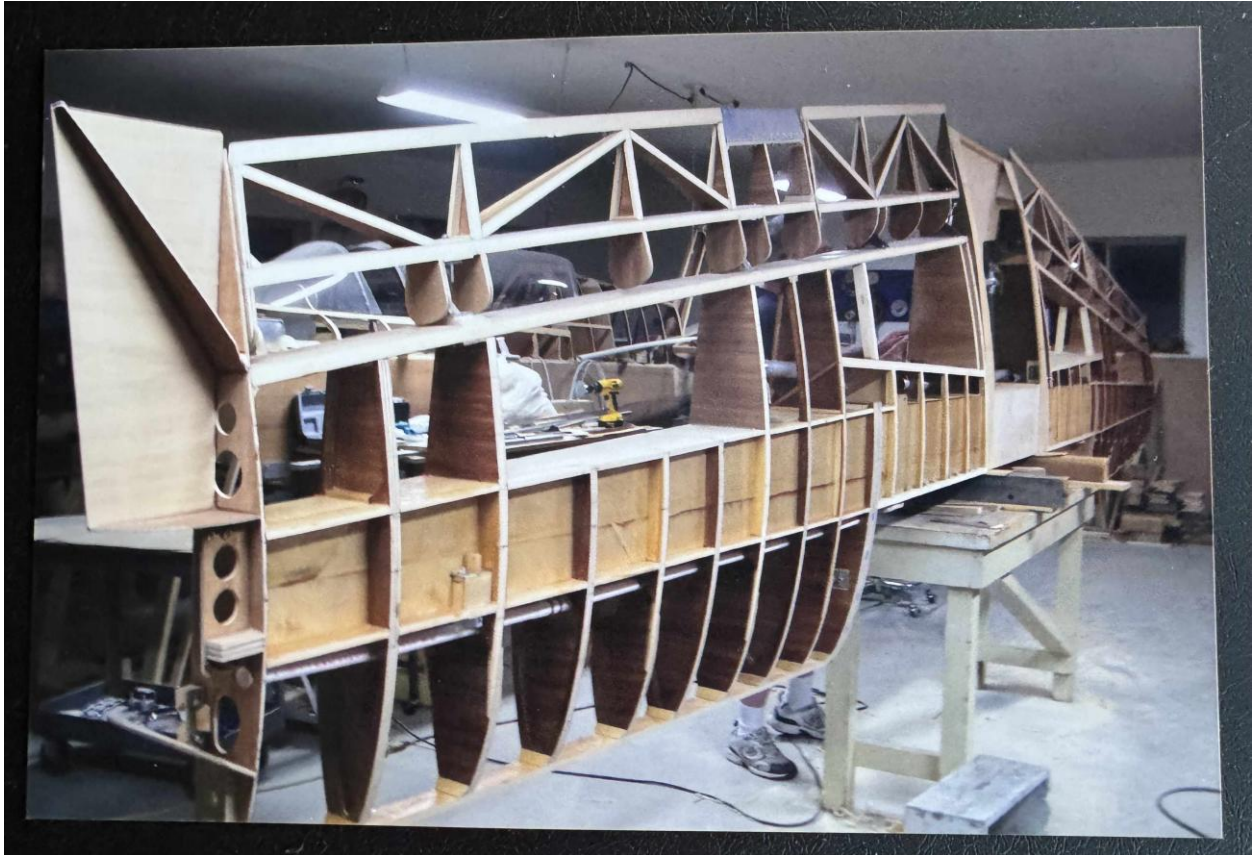
Port fuselage side-view at wing trailing edge before inner skin attachment



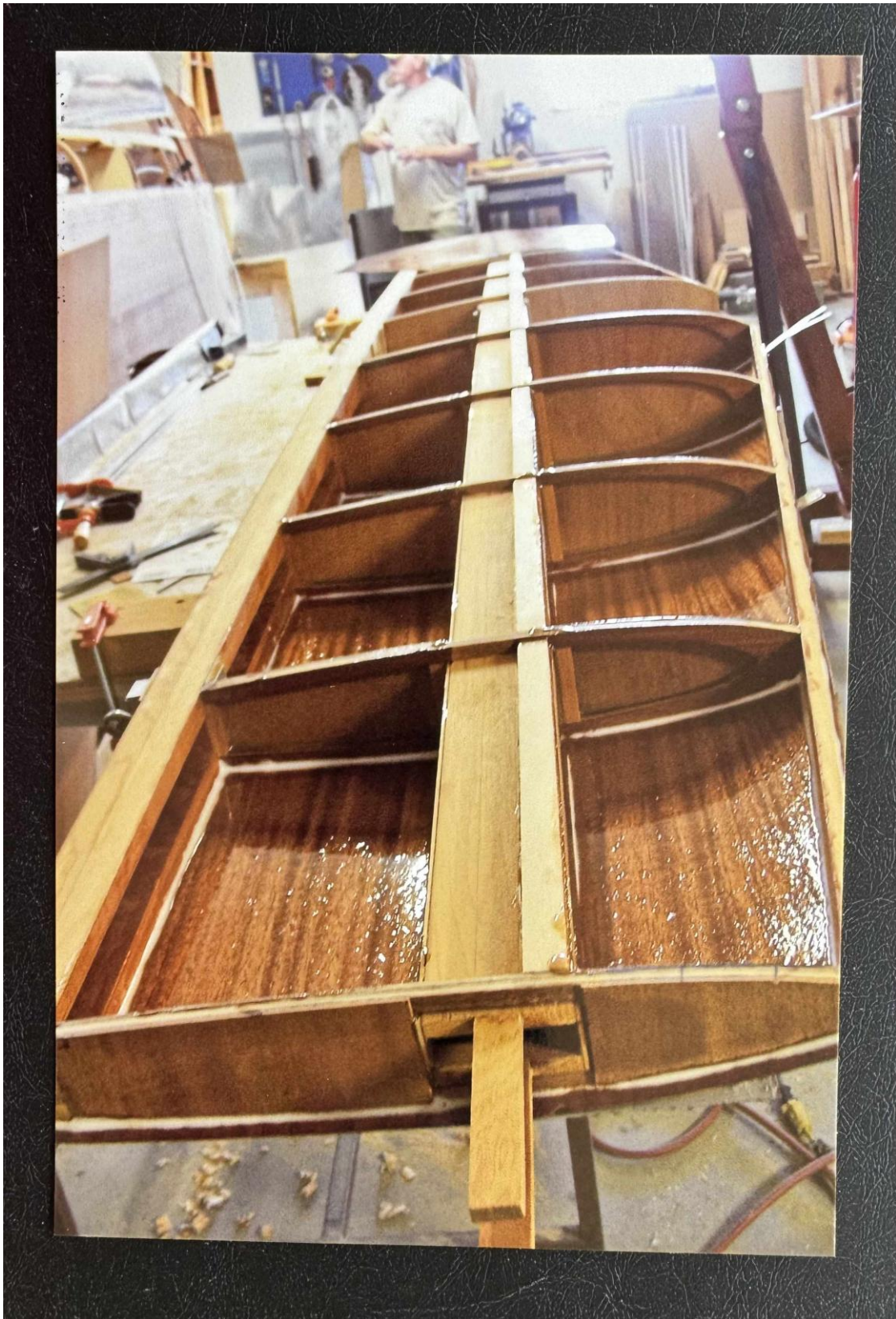
Port fuselage side-view aft of rear seat back before inner skin attachment



Rib number 4 and landing gear trunnion hard point



Wing ready to skin



Horizontal stab bottom skin attached



Rudder structure hinge fitted

Cockpit Overview

Fuselage is wide enough to fair straight back behind a parallel valve Lycoming IO-540 which makes for a roomy tandem two place cockpit. The raised rear seat allows the rear seater to see over the pilots' shoulders for a decent forward view in flight.



Rear seat – baggage compartment access is just above seat back



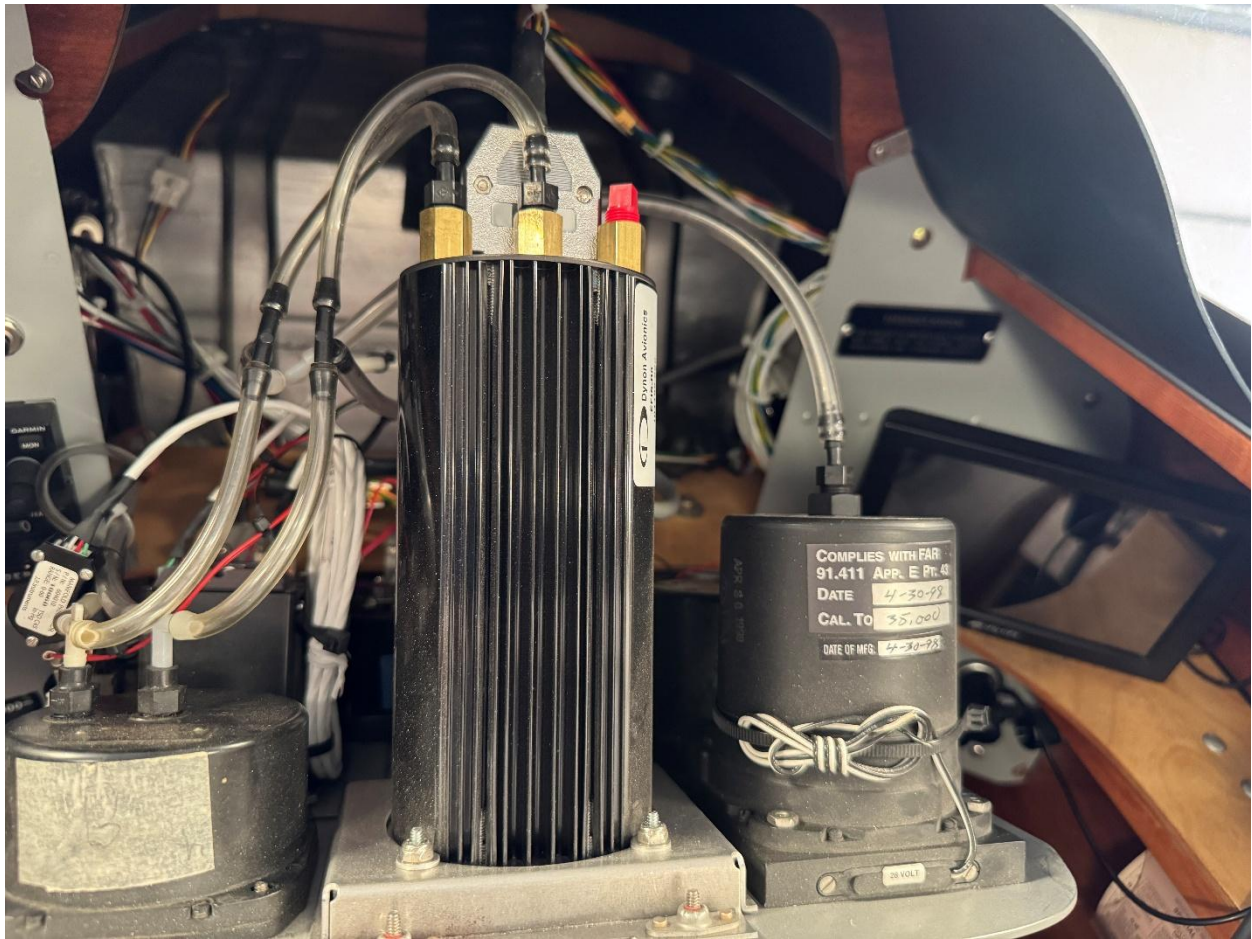
Rear seat throttle, rudder pedals and two fresh air vents



Rear control stick with red control lock engaged



Front cockpit yellow and black canopy emergency release.
Center lower panel fuel management controls.
iFly EFB GPS side panel.



Instrument panel folds out for ease of maintenance

Note aluminum fuselage tank in background



Pistol grip control stick with shiny tail wheel unlock lever

V Numbers Overview

Va	Design maneuvering speed	140 I.A.S.@ 2230 lbs.
Vne	Never exceed speed	255 T.A.S.
Vno	Max structural cruising speed	205 I.A.S.
Vfe	Max flaps extended speed	100 I.A.S.
Vlo	Max speed gear can be operated	120 I.A.S.
Vso	Stall dirty – gear down – 40* Flap	60 I.A.S.
Vsr	Stall dirty – gear down – 20* Flap	64 I.A.S.
Vs	Stall clean	70 I.A.S.
Vref	Final approach speed 1.3 x Vs Speeds	80 I.A.S.
Vx	Best angle of climb speed	100 I.A.S.
Vy	Best rate of climb speed	110 I.A.S.
Vz	Normal climb speed	120 I.A.S.
Vbg	Best glide speed	105 I.A.S.

Weight and Balance Overview

- Gross weight 2500 lbs.
- Empty weight 1673 lbs.
- Useful load 827 lbs
- Design C.G. range 16%-30% of #4 rib chord, 28.8-36.2 inches aft of datum

MJ 51 Weight & Balance ✓

Item	Weight	Arm	Moment
MAIN WHEELS	1602	23.3	37326
T/W	71	184.0	13064
EMPTY WT	1673		
OIL	17	- 26.5	- 450
EMPTY WT W/OIL	1690	29.5	49940
17 GAL FUS FUEL	102	8	816
PILOT	170	40	6800
MOST FORWARD EXAMPLE	1962	29.3	57556
EMPTY WT W/OIL	1690	29.5	49940
17 GAL FUS FUEL	102	8	816
30 GAL WING FUEL	180	54	9720
PILOT	210	40	8400
PASS	230	78	17940
HEAVY PASS	2412	36.0	86816
EMPTY WT W/OIL	1690	29.5	49940
17 GAL FUS FUEL	102	8	816
30 GAL WING FUEL	180	54	9720
10 GAL OUTBOARD WING FUEL	60	48	2880
PILOT	210	40	8400
PASS	180	78	14040
BAG	25	113	2825
MAX AFT LOADING	2447	36.2	88621
EMPTY WT W/OIL	1690	29.5	49940
17 GAL FUS FUEL	102	8	816
0 GAL WING FUEL	210	40	8400
PILOT	180	78	14040
PASS	25	113	2825
BAG	2207	34.4	76021
MAX AFT LOADING-END OF FLIT			

Sample Weight & Balance

Landing Gear Overview

Gear retraction is by a Parker-Oildyne electric/hydraulic pump. An important feature is automatic up and down locks. Shock strut cushion is two die-springs. Wheel and brakes are heavy duty Cleveland. Tailwheel is full swivel, self locking and can be made to retract.



Cable from locking mechanism goes to lever just below front stick grip



Tailwheel mechanism, view top-down



Main gear down and locked; Taxi light shown



Port wheel well upper main gear and trunnion assembly



Port landing gear scissors

Engine Overview

Lycoming XIO-540-A1D5 475 hours since major overhaul. I was working at Western Skyways engine shop as an inspector when I completed the major overhaul of this engine using their equipment. New Lycoming cylinder assemblies were used. New, more effective, counter weights were installed to match using a light weight propeller. The tuned cold air induction system is off a Lycoming IO-540 angle valve which a Lycoming engineer told me adds 15 hp at 2700 rpm (275 hp). Ignition is one Lightspeed Plasma-III and one (new, 2 hrs total) Bendix impulse magneto in case of electrical failure.



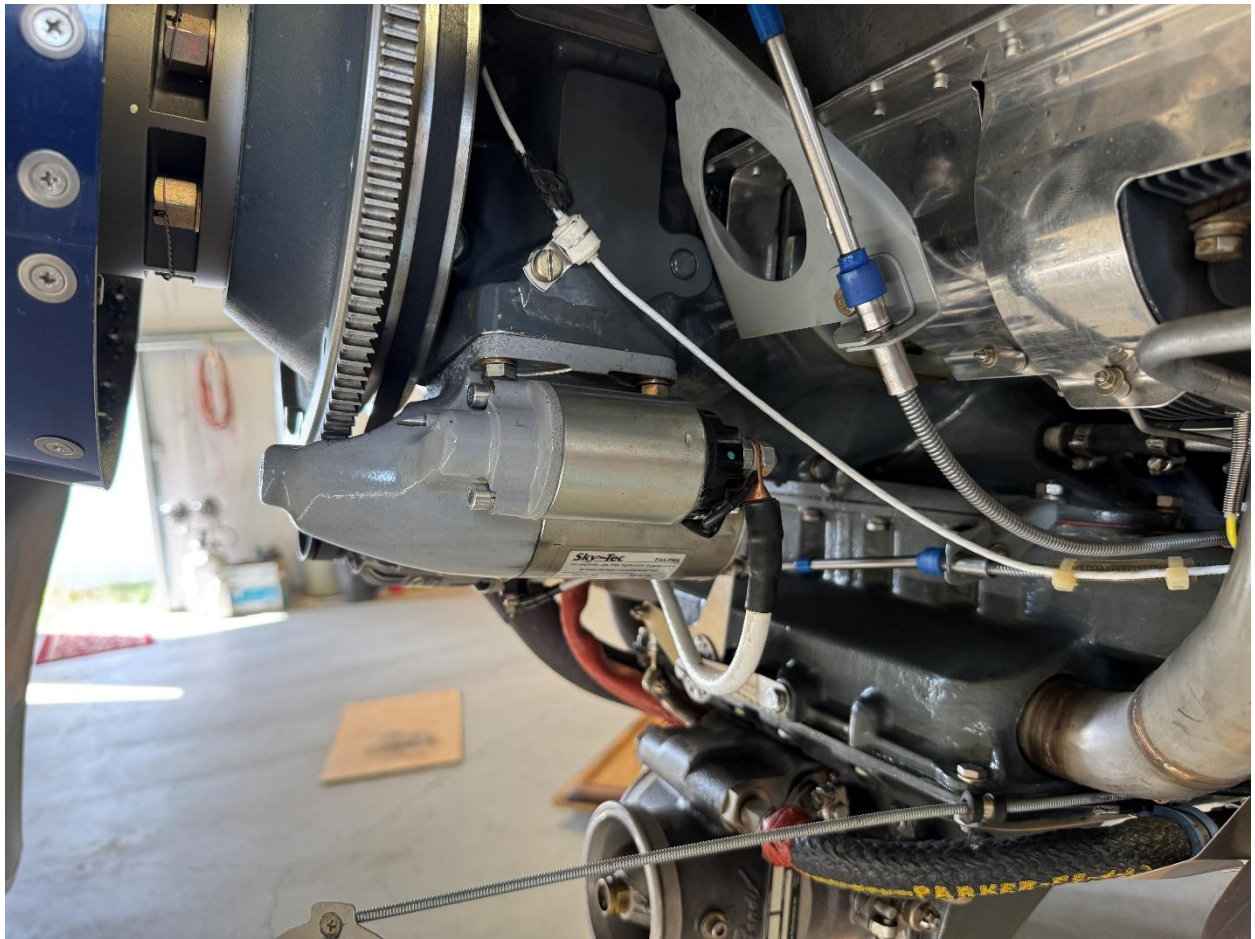
Starboard view: Plenum and titanium firewall



Plenum inlets and tuned cold air induction



Odyssey battery and electronic ignition cold air box



Oil sump and tuned cold air induction