.5 mil tensilized Mylar wing skin

10 ft. dia. variable pitch, minimum induced loss prop. 210 rpm at design pitch.

Airspeed signal generator

Spar tapers to .018" wall at tip.

.5 dia. 0.02" wall Al aileron LE torque tube

1 lb. foam aileron

Prop pitch set by pushrod in shaft

Control circuitry drives pitch pushrod via rotary servo/leadscrew to maintain requested motor current

Power controller

700 Watt Samarium-Cobalt motor/generator

POWER SYSTEM

74 teeth

62.2:1 gearbox

Pilot's instruments

Airspeed indicator

Motor ammeter

"Fuel" gauge (integrating ammeter)

Prop pitch indicator

Pilot's instruments

TYPICAL WING SECTION: MODIFIED LISSAMAN 7769

.028" LE wire

Glass epoxy over carbon

.024" TE wire

2.5" dia. .035" wall Al spar

.5" plywood

.007 carbon edge strip

2.5" dia. .035" wall Al spar

1 lb. foam LE sheeting

.5 lb foam LE sheeting

Fuel tank

10.4 mainwheel. Driven first 25 ft. of ground roll.

Fuselage structure:

2.5", 2", and 1.5" dia. Al frame

Balsa and poplar ribs

1 lb. foam top, bottom, and LE sheeting

.3 mil Mylar skin

15 mil Lexan windshield

MONARCH

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KREMER WORLD SPEED COMPETITION

0 1 2 3 4 5 10 ft.

Airframe weight 72 lb.

Flying weight ~230 lb.

Cruise speed 19 - 23 mph

TYPICAL PROP SECTION: EPPLER 193

MARK DRELA 15 May 84