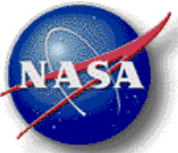


XSCAV Airframe

eXperimental Sensor-Controlled Aerial Vehicle

Airframe: 50% Clipped Wing J-3 Piper Cub
Airframe Manufacturer: Designed by Bill Hempel
Wing Span: 15 ft.
Length: 142"
Height: 41"
Weight, Takeoff: 60-63 lbs.
Payload Capacity: 30 lbs. (TBD)
Typical Cruise Altitude: 450 ft.
Cruise Speed: 40 knots
Control Actuators: 14 JR digital high-torque
programmable hobby servos





XSCAV System

Batteries (Not Shown)

CPU: Lithium Polymer, 8000mAh/11.1V, 3s4p

Actuators: Li-Po, 4200mAh/7.4V, 2s2p

Athena Guidestar GS111m INS/GPS

- Full-State Feedback
- 3-Axis Magnetometers / Gyros / Accelerometers
- GPS (DGPS with Novatel/Omnistar)
- 6 Air Pressure Transducers:
AOA, Sideslip, Altitude/Speed



Wing Sensor: Five Hole Air Data Probe
American Sensor Corporation

Wireless Communications:

- 900Mhz (ISM) Telemetry/Commands
- 2.4GHz Safety Pilot Control

Wing Sensor: GPS Antenna

Airframe Manufacturer: Bill Hempel

Model: 50% J-3 Clipped Wing Piper Cub

Actuators: Thirteen (13) JR DS8611A for control surfaces, JR NES8101 for throttle

Engine Power Plant: 3W 210Xi

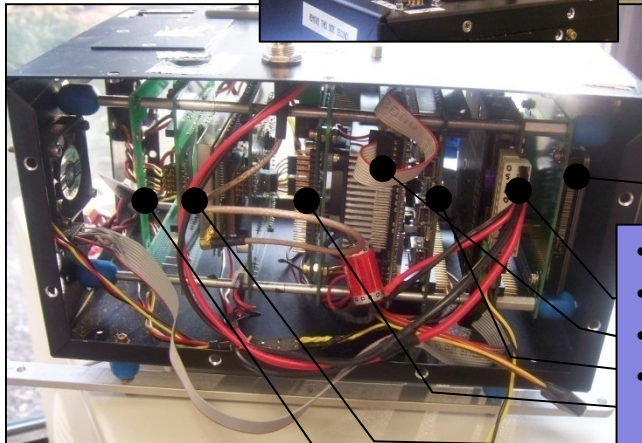
Type: 2-Stroke, Gas/Oil Fuel Mix

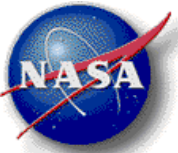
Displacement: 12.81 cu in / 210cc

RPM: 7500 (34x12 prop)

Ignition: 6.0V NiCd

- Storage: Western Digital 160GB 2.5" Hard Drive
- Power: Tri-M HSPC104-SER DC/DC 168Watt
- CPU: ADL945PC-L2400, DualCore/1.66GHz/1GB
- I/O Board: Pontech HBC101
Parvus COM-1394 3-Port FireWire Controller
- RF Modem: Microhard MHX910 900MHz
- 2x Servo Safety Switch: Optically-Isolated Multiplexor, Custom Analog Circuit





XSCAV System (cont.)

- 2x Smart-Fly TurboReg Linear Regulator
 - Battery Isolation
 - 6.0V, 17.5A regulated output
- 2x Smart-Fly Power Expander Eq10
 - Servo Matching for up to 10 CH
 - Isolated Power Inputs

(image from Bill Hempel, actual plane will be redundant)

