

## **N1GV CONDITION INSPECTION.**

**Date:** \_\_\_\_\_

**Hours TTAE:** \_\_\_\_\_

**By:** \_\_\_\_\_

**Certificate No:** 2578734

**CAUTION: Ensure P-lead terminals on both magnetos are grounded and keys on glareshield before working on Propeller and/or Engine. New brake pads are .190" thickness and wear limit just prior to hitting rivets is .090". During all inspections always look for corrosion, leaks, loose/missing fasteners, safety wire, chafing, galling and/or other significant wear.**

### **FIREWALL FORWARD**

#### **[Propeller]**

- ☐ Remove spinner noting alignment marks
- ☐ Inspect spinner, front and backing plate for cracks and/or damaged nutplates
- ☐ Inspect front and backing plate bolts and spacers
- ☐ Inspect propeller bolts and safety wire
- ☐ Inspect for visible grease or seal leaks
- ☐ Inspect hub for cracks, corrosion and grease with Shell 6 as necessary
- ☐ Inspect propeller blades for nicks, cracks and/or surface erosion
- ☐ Touchup propeller paint as necessary
- ☐ Check engine monitor for prop high stop ~2650rpm. Actual \_\_\_\_\_ rpm
- ☐ Check propeller track
- ☐ Reinstall spinner

#### **[Cowling]**

- ☐ Remove cowling fasteners, hinge pins and remove upper cowling
- ☐ Remove fuel vent line hose, hinge pins and remove lower cowling
- ☐ Inspect hinges for broken eyelets and wear
- ☐ Inspect inner surfaces of lower cowling for evidence of leaks
- ☐ Clean and inspect cowling for cracks and/or distortion
- ☐ Check access doors, latch operation, condition and lubricate

#### **[Lubrication]**

- ☐ Drain oil warm and collect sample for analysis
- ☐ Inspect oil cooler fittings and lines for leaks, kinks and/or chafing
- ☐ Inspect oil cooler condition and blocking door operation
- ☐ Inspect oil temperature sender for leaks and security
- ☐ Inspect oil pressure sender for leaks and security
- ☐ Inspect crankcase breather and oil separator for security and obstructions
- ☐ Drain oil separator condensate collection bowl
- ☐ Inspect propeller oil line from governor pad to front fitting for leaks and condition
- ☐ Remove and clean oil pump suction screen
- ☐ Replace spin-on oil filter, install magnet, clamp and safety wire
- ☐ Fill engine with fresh oil, Avblend and Camguard per Lubrication Chart

**[Starter/Alternator]**

- ☐ Inspect starter pinion, ring gear and grease with Shell 6 as necessary
- ☐ Check age of starter engagement solenoid \_\_\_\_\_
- ☐ Check ring gear balance weight security
- ☐ Check starter mountings and power lead connection
- ☐ Check alternator mountings and lead connections
- ☐ Check alternator exterior condition
- ☐ Check alternator belt condition and tension

**[Baffles]**

- ☐ Clean/degrease engine, baffles and airseal gasket surfaces
- ☐ Inspect baffles, fasteners and airseal gaskets for condition
- ☐ Seal any gaps with blue RTV

**[Engine/Firewall]**

- ☐ Inspect Engine Mount for Cracks
- ☐ Inspect Shock Isolators, Mounting Bolts and Washers for Condition
- ☐ Inspect Brake Fluid Reservoir Level
- ☐ Check all Firewall Wiring/Control Penetration Seals
- ☐ Check Senders, Hoses and Associated Wiring for Security
- ☐ Check Accessories on Rear Case for Security and Leaks
- ☐ Check Crankcase/Sump for Cracks, Leaks and/or Missing Fasteners
- ☐ Check Barrel Base Nuts for Security
- ☐ Check Rocker Box Cover Gaskets for Leaks
- ☐ Check Push Rod Covers for Straightness and End Seals for Leaks
- ☐ Inspect Oil Return Lines for Condition and Leaks
- ☐ Inspect Exhaust System and Mounting Brackets for Cracks
- ☐ Inspect Exhaust Gaskets for Leaks and Re-torque Mounting Nuts
- ☐ Check Heat Muffs, Heat Boxes and SCAT Hoses for Security
- ☐ Inspect Cylinder Head for Bent Fins and/or Burned Paint
- ☐ Pull Propeller Thru and Observe Compression each Cylinder
- ☐ Check Warm WOT Compression (psig) 1 \_\_\_\_ 2 \_\_\_\_ 3 \_\_\_\_ 4 \_\_\_\_

**[Ignition]**

- ☐ Check Condition of Spark Plugs, Clean and Regap .019" or replace as necessary
- ☐ Check Spark Plug Resistance 1K to 2K $\Omega$ . Replace plug if >5K $\Omega$
- ☐ Check Nose Core Insulators for cracks
- ☐ Rotate Plug Position/Polarity, install new Copper Washers and Apply Anti-seize
- ☐ Reinstall Plugs and Retorque to 25ft-lb
- ☐ Check Ignition Harness, Springs and Insulators for Condition
- ☐ Check Magneto P-Lead Attachments
- ☐ Check Magneto Gaskets for Oil Leaks
- ☐ Check Magneto Distributor Block for Cracks, Burns or Tracking
- ☐ Check Impulse Coupling and Magneto Timing (25°BTDC) L \_\_\_\_\_ R \_\_\_\_\_
- ☐ Check Magneto Mounting Clamps/Nuts for Security

**[Fuel System]**

- ☐ Remove and Clean Gascolator Screen and Bowl
- ☐ Drain Carburetor, Clean Inlet Strainer and Retorque to 35-40 in-lb
- ☐ Inspect Fuel Lines for kinks and condition
- ☐ Turn ON Boost Pump, Actuate Primer and Inspect Plumbing for Leaks. Actual \_\_\_\_\_ psig

**[Intake]**

- ☐ Check Operation of Carb Heat Door and Heat Muffs
- ☐ Check Ram Air Seal Condition
- ☐ Check Intake Tubes and Couplings for Leaks and Condition
- ☐ Remove, Clean and Lubricate Air Filter
- ☐ Check Engine Controls for Proper Operation
- ☐ Check Throttle and Mixture Linkages
- ☐ Check Alternate Air, Mixture and Throttle Safety Springs
- ☐ Check Movement of all Engine Controls
- ☐ Reinstall Cowlings, Pins, Screws, Camlocks and Hinge Pin Covers

## **CABIN**

### **[General]**

- ☐ Inspect Canopy Structure and Mounting Points
- ☐ Inspect Canopy Latching Mechanism and Air Seals
- ☐ Inspect Acrylic Window for Cracks
- ☐ Check Condition of Seats and Cushions
- ☐ Check Condition of Harnesses and Attach Points
- ☐ Check Fire Extinguisher for fill
- ☐ Check O2 Cylinder Fill. Last Hydro date \_\_\_\_\_

### **[Controls]**

- ☐ Check Fuel Selector Valve Operation
- ☐ Check Cabin Fuel Lines for Leaks
- ☐ Check Elevator and Aileron Trim Servo Operation and Display
- ☐ Check Flap Operation and Display
- ☐ Check Rudder Pedal Operation and Adjustment
- ☐ Inspect Rudder Pedals, Cables and Attachments
- ☐ Check Brake Masters and Associated Tubing for Leaks
- ☐ Check Control Sticks, Linkages and Push/Pull Tubes
- ☐ Lubricate Control Pivots and Cables

### **[Instruments]**

- ☐ Check Master/Starter Contactors and Associated Wiring
- ☐ Check Master Bypass for Proper Operation
- ☐ Check Instruments, Lines and Attachments
- ☐ Check Pitot/Static System for Leaks
- ☐ Check Wing Leveler Gyro Operation
- ☐ Check Wing Leveler Servo Mounting, Linkage and Clutch
- ☐ Check Gyro Air Filter Condition
- ☐ Check Vacuum Regulator Garter Filter Condition
- ☐ Check Altimeter Calibration and Operation
- ☐ Check VSI Operation
- ☐ Check Battery Box, Battery and Cables
- ☐ PC680 Battery Replaced date \_\_\_\_\_
- ☐ Check Antenna Connections and Mounting
- ☐ Check VM1000 Operation and Battery Condition. Replaced date \_\_\_\_\_
- ☐ Check ELT Switch Position, Operation and Batteries date \_\_\_\_\_
- ☐ Check ELT Remote Panel Battery date \_\_\_\_\_

## **FUSELAGE AND EMPENNAGE**

- ☐ Remove Empennage Fairings and Fuselage Inspection Plates
- ☐ Visually Inspect Structure for Corrosion and Condition
- ☐ Inspect Cabin side Engine Mount to Longerons Weldments for Cracks
- ☐ Check Control Surface Pivot Bolts for Wear
- ☐ Check Elevator Counterbalance Weights
- ☐ Check Elevator and Rudder Control Stop Condition
- ☐ Inspect Elevator Trim Tab and Actuator Rod
- ☐ Check Elevator Reversal Bellcrank, Horns and Attachments
- ☐ Check Bulkheads and Stringers for Damage
- ☐ Check Vertical Stab Spar Attach Points
- ☐ Check Rudder Horn and Attachment
- ☐ Check Horizontal Stab Spar Attach Points
- ☐ Check that Static Ports are Clear
- ☐ Check Electrical Connections
- ☐ Reinstall Inspection Plates and Fairings
- ☐ Check that all Drain Holes are Open
- ☐ Check Skin Condition and Rivets

## **WING**

- ☐ Remove Wing Root Fairings and Inspection Covers
- ☐ Visually Inspect Structure for Corrosion and Condition
- ☐ Check Fuel Tanks, Lines and Drains for Leaks
- ☐ Check Fuel Vents not Blocked
- ☐ Check Fuel Cap and O-Ring Condition
- ☐ Inspect Wing Tip Attachment
- ☐ Inspect Wing Root Attachment
- ☐ Check Aileron System and Attach Bolts for Wear
- ☐ Check Aileron Control Stops and Counterbalance Weights
- ☐ Check Aileron Trim Tab and Actuator Rod
- ☐ Check Aileron Bellcrank Condition
- ☐ Check Flap System and Attachments for Slop
- ☐ Check Flap Torque Tube for Cracks/Distortion
- ☐ Check Flap Actuator Rod End and Jam Nut for Security
- ☐ Check Wing-walk Condition
- ☐ Check Electrical Connections
- ☐ Check Pitot Tube and Plumbing
- ☐ Reinstall Inspection Covers and Fairings

## LANDING GEAR

- ☐ Remove wheel pants
- ☐ Check tire condition and pressure
- ☐ Note vintage of tire tubes Mains \_\_\_\_\_ Nose \_\_\_\_\_
- ☐ Check wheel bearing condition and repack with Mobil SHC100 grease as necessary
- ☐ Check wheels for cracks, corrosion and broken fasteners
- ☐ Check brake calipers, seals, pads, discs and bushings for wear
- ☐ Check fluid lines and fittings for security and/or leaks
- ☐ Check damping strip and gear fairing attachments
- ☐ Examine nose gear for cracks
- ☐ Check nose gear breakout force, stops and grease pivot bushing Zerk fitting with Mobil SHC100
- ☐ Check gear attachment fasteners
- ☐ Reinstall wheel pants

## OPERATIONAL INSPECTION

- ☐ Check engine driven fuel pump for proper pressure. \_\_\_\_\_ psig
- ☐ Check boost pump for proper pressure. \_\_\_\_\_ psig
- ☐ Check fuel selector for engine shutoff
- ☐ Check oil pressure and temperature
- ☐ Check alternator output at high load
- ☐ Check manifold pressure varies with throttle
- ☐ Check carb heat function
- ☐ Check vacuum system
- ☐ Check gyros for noise and/or roughness
- ☐ Verify altitude reporting system recertified biennially. date \_\_\_\_\_
- ☐ Check fuel senders/gauges/low fuel lamps
- ☐ Check landing, position, strobe, cabin, instrument/warning lights
- ☐ Check elevator, ailerons, servo tabs and flaps for proper travel
- ☐ Check radio transmission, reception and speaker output
- ☐ Check canopy ajar switch/lamp
- ☐ Check cabin heat operation
- ☐ Check ignition switch/magneto grounding operation
- ☐ Check throttle and mixture operation
- ☐ Check propeller track, cycling and refinement
- ☐ Check parking brake operation
- ☐ Check brakes for smooth operation both sides
- ☐ Check VM1000 display elements
- ☐ Check for ~630rpm at idle
- ☐ Check prop governor limitation <2700rpm \_\_\_\_\_
- ☐ Check for ~25rpm idle rise upon leaning mixture
- ☐ Check CO monitor alarm function. Battery date \_\_\_\_\_
- ☐ Check GPS database date \_\_\_\_\_

## **DOCUMENTATION**

- ☐ Check registration due date \_\_\_\_\_
- ☐ Check airworthiness cert and operating limitations onboard
- ☐ Check for current issue airport info
- ☐ Current Navigation Charts in ASUS Tablet
- ☐ Check radio station license onboard (required for international flights)
- ☐ Check aircraft data plate, Experimental placard and passenger warning decal intact
- ☐ Review equipment list
- ☐ Last ADS-B report date \_\_\_\_\_
- ☐ Ensure weight and balance data onboard and current
- ☐ Review airworthiness directives for applicability
- ☐ Review service bulletin(s)/letter(s) for applicability
- ☐ Document condition inspection and record maintenance performed in logbook(s)