

## 1999 CESSNA 172 SYSTEMS SUMMARY N4203P

### **ENGINE**

Lycoming 4 cylinder IO-360, 160 HP @ 2400 RPM, air cooled, direct drive, horizontally opposed, normally aspirated. Major accessories include starter, belt driven alternator, dual magnetos, and a vacuum pump. Oil capacity is 8 quarts maximum; 5 quarts minimum required for flight.

### **PROPELLER**

McCaughey, two blades, fixed pitch, 75 inch all metal propeller.

### **BRAKES**

Single Hydraulic disc located on each of the two main landing gear's provide braking. Two master cylinders, one behind each brake pedal on the pilot's side control each individual wheel. The co-pilot's brake pedals are mechanically connected linked to the pilots brake pedals.

### **FLAPS**

The flaps are electrically operated single slot type. Flaps are extended or retracted by positioning the wing flap switch lever to the desired flap deflection position. The flap switch lever has stops at the 10° and 20° positions. A scale and pointer indicates the flap travel in degrees.

### **FUEL SYSTEM**

Fuel is carried in two wing tanks with a total capacity of 56 gallons. A total of 53 gallons usable fuel is available. The fuel selector valve is labeled with the total useable fuel. Fuel is gravity fed to the engine. The fuel selector valve has three positions: Both, Left, Right. There is fuel shutoff valve just above the fuel selector. The fuel selector should be set to Both for all takeoffs and landings. Each fuel tank has numerous sumps. The entire fuel system can be sumped by pulling on the fuel strainer knob located under the access panel on the right side of the engine cowling.

### **ELECTRICAL SYSTEM**

Electrical energy is supplied by a 28 volt direct current system powered by an engine driven alternator. A 24 volt battery is located left forward side of the firewall. The ammeter indicates the charging rate, in amperes, of current supplied from the alternator to the battery. The ammeter will show a discharge when the alternator is not functioning or the electrical load exceeds the output capacity of the alternator. Electrical circuits are protected by circuit breakers mounted on the instrument panel.



## **1999 CESSNA 172 RECOMMENDED PROCEDURES N4203P**

### **STEEP POWER TURNS**

Two 90° or one 180° turns. Set power to 2100 RPM and adjust airspeed to 90 KIAS. Roll into a bank angle of 50°. Begin applying back pressure and add 100 to 200 rpm passing through 30° angle of bank. Begin roll out 15° -20° before assigned heading and relax back pressure, reduce power to 2100 RPM passing 30° angle of bank. Maintain a constant altitude, airspeed, and roll out on the assigned heading.

### **SLOW FLIGHT**

Two 90° or one 180° clearing turns. Set power to 1500 RPM. Increase pitch attitude to maintain altitude and decelerate to 50 KIAS. Add flaps as desired. Increase power to 2000 RPM and adjust pitch to maintain altitude and airspeed. Maintain airspeed with pitch control, altitude with power, and a constant heading with an emphasis on rudder control. To recover apply full power, lower the nose, select the flaps up in increments while accelerating to cruise.

### **APPROACH TO LANDING STALL**

Two 90° or one 180° clearing turns. Set power to 1500 RPM. Below 85 KIAS select full flaps. Establish the aircraft in a landing attitude. Set the power to idle. Hold the landing attitude until obtaining the stall buffet or full stall. Recover by relaxing back pressure to hold a climb attitude. Select full power, retract flaps to 20°. As aircraft accelerates continue raising the flaps to 0° after passing through 60 KIAS.

### **TAKEOFF/DEPARTURE STALL**

Two 90° or one 180° clearing turns. Set power to 1500 RPM. Slow to 60 KIAS. Increase pitch to slightly higher than climb attitude while increasing to full power. Hold this attitude by increasing elevator back pressure until obtaining stall buffet or stall. To recover, relax the back pressure to lower the nose to a climb attitude while accelerating to climb airspeed. If the aircraft drops a wing during the maneuver, it is caused by lack of rudder coordination. To pick up the wing, Do Not Use aileron. Use the rudder to pull the wing up.

### **MAXIMUM PERFORMANCE TAKEOFF OVER AN OBSTACLE**

Select 10° flaps, hold brakes, apply full power smoothly, release brakes: Accelerate to 55 KIAS, rotate and climb out at 57 KIAS until obstacle is cleared. Lower the nose, accelerate, to  $V_y$ , raise the flaps after passing through 60 KIAS. Accelerate to  $V_y$  79 KIAS and after passing through 1000 feet climb at 70 - 85 KIAS cruise climb airspeed.

### **SHORT/SOFT FIELD TAKEOFF**

Select 10° flaps, yoke positioned full aft, advance power to full, do not hold brakes and establish a takeoff attitude. Let the airplane fly itself into the air, once airborne and in ground effect, lower nose to accelerate to climb speed.

### **NORMAL LANDING**

Set power to 2000 RPM in the pattern maintain 85 KIAS. At the abeam position reduce power to 1500 RPM, add 10° flaps adjust airspeed to 75 KIAS. Base leg flaps to 20° airspeed to 70 KIAS. On final set flaps to 30° maintain airspeed 62 - 65 KIAS. In the landing flare reduce power to idle, touch down on the mains holding the nose wheel off until the elevator loses effectiveness.

### **SHORT FIELD LANDING**

Set power to 2000 RPM in the pattern maintain 85 KIAS. At the abeam position reduce power to 1500 RPM, add 10° flaps adjust airspeed to 75 KIAS. Base leg flaps to 20° airspeed to 70 KIAS. On final, select flaps to full, maintain airspeed 62 KIAS. In the landing, flare reduce power to idle, touch down on the mains first, lower the nose to the runway, retract the flaps, apply maximum braking without skidding the tires.

### **SOFT FIELD LANDING**

Set power to 2000 RPM in the pattern maintain 85 KIAS. At the abeam position reduce power to 1500 RPM, add 10° flaps adjust airspeed to 75 KIAS. Base leg flaps to 20° airspeed to 70 KIAS. On final, select flaps to full, maintain airspeed 62 KIAS. In the landing, flare reduce the power to slightly above idle, attempt to hold aircraft off runway as long as possible by landing on the mains while increasing back pressure until elevator loses its effectiveness. Use no brakes, power should be reduced to idle after landing, during roll-out.

### **GO AROUND**

Power to full throttle, establish a climb attitude, retract flaps to 20° immediately, retract flaps to 10° passing through 55 KIAS, retract flaps to 0° passing through 60 + KIAS. Accelerate to Vy ( 79 KIAS) and climb to pattern altitude.

### **INSTRUMENT APPROACH POWER SETTINGS**

ILS :

90 KIAS 1700 RPM

NON-PRECISION:

90 KIAS 1400 - 1500 RPM



1999 CESSNA 172R AIRCRAFT CHECK-OUT N4203P

Aircraft Make and Model \_\_\_\_\_:  
Engine Make and Model \_\_\_\_\_:  
Rated Horsepower \_\_\_\_\_ BHP at \_\_\_\_\_ RPM  
Propeller Type \_\_\_\_\_:  
Maximum Gross Weight \_\_\_\_\_ LB. Maximum Weight in Baggage \_\_\_\_\_ LB.  
Basic Empty Weight for N \_\_\_\_\_ is \_\_\_\_\_ LB. .  
Useful Load for N \_\_\_\_\_ is \_\_\_\_\_ LB.

Speeds

Vne \_\_\_\_\_ KIAS                      Vfe \_\_\_\_\_ KIAS                      Vr \_\_\_\_\_ KIAS  
Vno \_\_\_\_\_ KIAS                      Vy \_\_\_\_\_ KIAS                      Vso \_\_\_\_\_ KIAS  
Va \_\_\_\_\_ KIAS at \_\_\_\_\_ LB.      Vx \_\_\_\_\_ KIAS                      Vsl \_\_\_\_\_ KIAS  
Enroute Climb Speed \_\_\_\_\_ KIAS  
Final Approach Speed with Flaps Down \_\_\_\_\_ KIAS  
Final Approach Speed with Flaps up \_\_\_\_\_ KIAS  
Demonstrated Crosswind Component \_\_\_\_\_ KIAS  
Best Glide Speed \_\_\_\_\_ KIAS

Fuel/Oil System

Number of Fuel Tanks \_\_\_\_\_:  
Total Capacity of each Tank \_\_\_\_\_:  
Total Usable Fuel \_\_\_\_\_ Gallons  
Where are the fuel drains located? \_\_\_\_\_:  
Fuel Grade and color \_\_\_\_\_:  
Oil Capacity \_\_\_\_\_ Qt.  
Minimum Oil Quantity for Flight \_\_\_\_\_ Qt.  
Oil Type Used? \_\_\_\_\_ Wt. Oil used \_\_\_\_\_.

Electrical System

\_\_\_\_\_ Volt Battery                      \_\_\_\_\_ Volt Alternator  
If the ammeter is indicating a Discharge, what might this be indicative of?  
1. \_\_\_\_\_ or  
2. \_\_\_\_\_:  
Where is the battery Located \_\_\_\_\_:  
Where is the External Power Receptacle Located \_\_\_\_\_:

Power Setting and Engine Care

1. What is Climb Power Setting? \_\_\_\_\_ RPM.
2. What is Cruise Power Setting? \_\_\_\_\_ RPM.

**Aircraft Performance**

**1. Complete the following Weight and Balance**

Basic Empty Weight	_____ LB.	Moment	_____
Usable Fuel	_____ LB.	Moment	_____
Pilot and Front Passenger	_____ LB.	Moment	_____
Rear Passengers	_____ LB.	Moment	_____
Baggage	_____ LB.	Moment	_____

Total Weight \_\_\_\_\_ LB. divide by Total Moment \_\_\_\_\_ = \_\_\_\_\_ CG

**2. Takeoff**

Calculate the ground roll and total to clear a 50 foot obstacle takeoff distances at maximum gross weight, departing from a field elevation of 2500 feet. ATIS reports wind calm and temperature 75 degrees F.

**3. Enroute:**

Calculate the maximum endurance and fuel flow per hour at 7500 feet cruise altitude, using a cruise power setting of 2400 RPM.

What percentage BHP and TAS can you expect at 2300 RPM?

**4. Landing:**

Calculate the ground roll and total to clear a 50 foot obstacle landing distance at maximum gross weight, sea level field elevation, standard temperature, wind calm.

What is the recommended short field approach speed and configuration?

\_\_\_\_\_

What are the recommended soft field takeoff and landing configurations and procedures?

\_\_\_\_\_

\_\_\_\_\_

Describe the go around procedure: \_\_\_\_\_

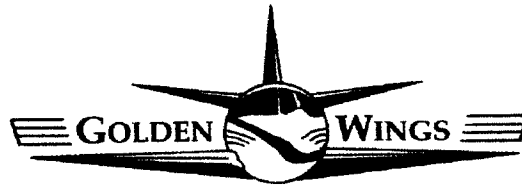
\_\_\_\_\_

\_\_\_\_\_

Pilots Name \_\_\_\_\_

Date \_\_\_\_\_

Instructor \_\_\_\_\_



## Golden Wings, Inc. Aircraft Checkout Form Cessna 172R, N4203P

Name \_\_\_\_\_  
 Date Last Biennial \_\_\_\_\_ or Date Last Annual \_\_\_\_\_  
 Date Last Medical \_\_\_\_\_ Class \_\_\_\_\_ Pilot Cert.# \_\_\_\_\_  
 Hours PIC \_\_\_\_\_ Hours last 6 months \_\_\_\_\_ Pilot Ratings \_\_\_\_\_  
 Aircraft Check Out (Date) \_\_\_\_\_ Type A/C \_\_\_\_\_ N \_\_\_\_\_

**Phase I: Oral Operational Quiz** Check if satisfactory

- Recent changes in FAR's \_\_\_\_\_
- Airspace, controlled and uncontrolled \_\_\_\_\_
- Airplane and equipment documents \_\_\_\_\_
- Airplane performance and proper operation of all installed equipment \_\_\_\_\_
- Airplane loading, weight and balance \_\_\_\_\_
- Preflight line check \_\_\_\_\_
- STOL Equipment \_\_\_\_\_
- High Altitude operations (density altitude) \_\_\_\_\_
- Speed brakes, long range tanks, etc. \_\_\_\_\_

**Phase II: Basic Piloting Technique**

- Normal and crosswind takeoffs and landings \_\_\_\_\_
- Short field takeoff and landing over 50' obstacle \_\_\_\_\_
- Soft field takeoff and landing \_\_\_\_\_
- Flight at minimum controllable airspeeds \_\_\_\_\_
- Stalls from all normally anticipated flight attitudes \_\_\_\_\_
- Go-arounds \_\_\_\_\_
- 720° steep turns (45° bank minimum) \_\_\_\_\_
- Slips to a landing \_\_\_\_\_
- In-flight emergency procedures \_\_\_\_\_
- Simulated equipment failures \_\_\_\_\_
- Radio communication and navigation \_\_\_\_\_
- STOL Operations \_\_\_\_\_
- High Density Altitude Operations \_\_\_\_\_
- Other (specify) \_\_\_\_\_

**Phase III: Instrument Flight**

- Straight and level, shallow climbing and descending turns to given altitude heading \_\_\_\_\_
- Approaches (# \_\_\_\_\_, type \_\_\_\_\_), for IFR pilots \_\_\_\_\_
- Recovery from start of power-on spiral \_\_\_\_\_
- Recovery from the approach to a climbing stall \_\_\_\_\_
- High Altitude flight operations \_\_\_\_\_
- Emergency descents \_\_\_\_\_
- Other (specify) \_\_\_\_\_

Comments \_\_\_\_\_

Instructor Name \_\_\_\_\_ Signature \_\_\_\_\_

CFI No. \_\_\_\_\_ Expiration Date \_\_\_\_\_

Signature of pilot \_\_\_\_\_ Date \_\_\_\_\_