May 21, 2019

Data Sheet: Cessna 172S

Weights

A/C #	Empty Weight	Empty Moment	Arm	Useful Load
N651PA	1708.4 lbs.	72,338	42.3	841.6 lbs.
N652PA	1708.5 lbs.	72,338	42.341	841.5 lbs.
N653PA	1708.4 lbs.	72,330	42.3	841.6 lbs.
N654PA	1682.6 lbs.	69,496	41.3	867.4 lbs.
N665CS	1715.4 lbs.	72,082.9	42.021	842.6 lbs.
N618JM	1664.3	67,584.35	40.61	885.70

Compass Deviations

N651PA

N	30	60	E	120	150
360	30	60	91	122	152
S	210	240	W	300	330
182	210	240	270	300	330

N652PA

N	30	60	E	120	150
360	30	62	92	122	153
S	210	240	W	300	330
182	211	241	270	300	330

N653PA

N	30	60	E	120	150
360	30	62	92	122	153
S	210	240	W	300	330
182	211	241	270	300	330

N654PA

N	30	60	E	120	150
360	30	58	89	120	150
S	210	240	W	300	330
179	209	239	270	301	330

N665CS

N	30	60	E	120	150
360	30	60	89	120	150
S	210	240	W	300	330
180	210	240	270	300	331

N618JM

N	30	60	E	120	150
358	27	57	87	117	148
S	210	240	W	300	330
179	209	239	268	299	328

Maximum Weights	Normal	Utility
Ramp Weight	2558 lbs.	2208 lbs.
Takeoff Weight	2550 lbs.	2200 lbs.
Landing Weight	2550 lbs.	2200 lbs.
Baggage Weight	120 lbs.	empty
Area 1	120 lbs.	empty
Area 2	50 lbs.	empty

Power-plant

Number of Engines: 1
Engine Manufacturer: Textron Lycoming
Engine Model Number: IO-360-L2A
Number of cylinders: 4
Engine Type: Normally aspirated, direct drive, air-cooled, horizontally opposed, fuel injected, four cylinder engine with 360.0 cu. in. displacement.
Horsepower Rating and Engine Speed: 180 rated BHP at 2700 RPM
Maximum Engine Speed:. . . . . .2700 RPM
Maximum Oil Temperature: . . . . . .245°F (118°C)
Oil Pressure, Minimum: . . . . . .20 PSI
Oil Pressure, Maximum: . . . . . .115 PSI

Brake System

SYSTEMS DESCRIPTION: The airplane has a single-disc, hydraulically-actuated brake on each main landing gear wheel. Each brake is connected, by a hydraulic line, to a master cylinder attached to each of the pilot's rudder pedals. The brakes are operated by applying pressure to the top of either the left (pilot's) or right (copilot's) set of rudder pedals, which are interconnected. When the airplane is parked, both main wheel brakes may be set by utilizing the parking brake which is operated by a handle under the left side of the instrument panel. To apply the parking brake, set the brakes with the rudder pedals, pull the handle aft, and rotate it 90° down. For maximum brake life, keep the brake system properly maintained, and minimize brake usage during taxi operations and landings.

Fuel System

Approved Fuel Grades (and Colors): 100LL Grade Aviation Fuel (Blue) 100 Grade Aviation Fuel (Green)
FUEL CAPACITY Total Capacity . . . . . .56.0 U.S. GALLONS
Total Usable . . . . . .53.0 U.S. GALLONS
Total Capacity Each Tank . . . . . .28.0 U.S. GALLONS
Total Usable Each Tank . . . . . .26.5 U.S. GALLONS
***To ensure maximum fuel capacity and minimize cross feeding when refueling, always park the airplane in a wings level, normal ground attitude and place the fuel selector in the LEFT or RIGHT position.

SYSTEMS DESCRIPTION: The engine is equipped with a fuel injection system. The system is comprised of an engine driven fuel pump, fuel/air control unit, fuel manifold, fuel flow indicator, and air-bleed type injector nozzles. Fuel is delivered by the engine driven fuel pump to the fuel/air control unit. The fuel/air control unit correctly proportions the fuel flow to the induction air flow. After passing through the control unit, induction air is delivered to the cylinders through the intake manifold tubes and metered fuel is delivered to a fuel manifold (flow divider). The fuel manifold, through spring tension on a diaphragm and valve, evenly distributes the fuel to an air-bleed type injector nozzle in the intake valve chamber of each cylinder. A turbine-type fuel flow transducer mounted between the fuel/air control unit and the fuel distribution unit produces a digital signal that displays fuel flow on the EIS pages.

Electrical System

Alternator- 28 volt, 60 ampere
Battery- 24 volt

SYSTEMS DESCRIPTION: Power is supplied to most electrical circuits through two primary buses (ELECTRICAL BUS 1 and ELECTRICAL BUS 2), with an essential bus and a crossfeed bus connected between the two primary buses to support essential equipment.

The system is equipped with a secondary or standby battery located between the firewall and the instrument panel. The STBY BATT switch controls power to or from the standby battery. The standby battery is available to supply power to the essential bus in the event that alternator and main battery power sources have both failed.

The primary buses are supplied with power whenever the MASTER switch is turned on, and are not affected by starter or external power usage. Each primary bus is also connected to an avionics bus through a circuit breaker and the AVIONICS BUS 1 and BUS 2 switches. Each avionics bus is powered when the MASTER switch and the corresponding AVIONICS switch are in the ON position.

Pitot-Static System and Instruments

SYSTEMS DESCRIPTION: The pitot-static system uses a heated total pressure (pitot) head mounted on the lower surface of the left wing, external static port mounted on the left side of the forward fuselage and associated plumbing to connect the air data computer and the conventional pitot-static instruments to the sources.
The heated pitot system uses an electrical heating element built in the body of the pitot head. The PITOT HEAT control switch is found on the switch panel below the lower left corner of the PFD. The PITOT HEAT circuit breaker is found on the circuit breaker panel at the lower left side of the pilot panel.

A static pressure alternate source valve (ALT STATIC AIR) is located adjacent to the throttle control. The ALT STATIC AIR valve provides static pressure from inside the cabin if the external static pressure source becomes blocked.
If erroneous instrument readings are suspected due to water or ice in the pressure line going to the standard external static pressure source, the alternate static source valve should be pulled on.

Propeller

Propeller Manufacturer: McCauley Propeller Systems
Number of Blades: 2
Propeller Diameter: 76 inches
Propeller Type: Fixed pitch

STANDARD AVIONICS

The Garmin G1000 Avionics System is an integrated flight control and navigation system. The system combines primary flight instruments, communications, airplane system information and navigational information all displayed on two color displays. The G1000 system consists of the following pieces of equipment:

GARMIN DISPLAY UNITS (GDU)

SYSTEMS DESCRIPTION: Two identical units are mounted on the instrument panel. One, located in front of the pilot, is configured as a PFD. A second panel, located to the right, is configured as a MFD.

The PFD displays roll and pitch information, heading and course navigation information, plus altitude, airspeed and vertical speed information to the pilot. The PFD also controls and displays all communication and navigation frequencies as well as displaying warning/status annunciations of airplane systems.

The MFD displays a large scalable, moving map that corresponds to the airplane's current location. Data from other components of the system can be overlaid on this map. Location and direction of movement of nearby aircraft, lightning and weather information can all be displayed on the MFD. The MFD is also the principle display for all of the engine, fuel, and electrical system parameters.

The reversionary mode places the flight information and basic engine information on both the PFD and the MFD. This feature allows the pilot full access to all necessary information should either of the display screens malfunction.

ATTITUDE AND HEADING REFERENCE SYSTEM (AHRS) AND MAGNETOMETER (GRS)

SYSTEMS DESCRIPTION: The AHRS provides airplane attitude and flight characteristics information to the G1000 displays and to the integrated avionics units, which is located in the tail cone of the airplane. The AHRS unit contains accelerometers, tilt sensors and rate sensors that replace spinning mass gyros used in other airplanes. The magnetometer is located inside the left wing panel and interfaces with the AHRS to provide heading information.

AIR DATA COMPUTER (GDC)

SYSTEMS DESCRIPTION: The Air Data Computer (ADC) compiles information from the airplane's pitot-static system. The ADC unit is mounted behind the instrument panel, just forward of the MFD. An outside air temperature probe, mounted on top of the cabin, is connected to the ADC. The ADC calculates pressure altitude, airspeed, true airspeed, vertical speed and outside air temperature.

Speeds

BEST GLIDE SPEED			**68 KIAS**
Stall in landing configuration		Vso	40 KIAS
Stall in cruise configuration		Vs1	48 KIAS
Rotation speed		Vr	55 KIAS
Best angle of climb speed		Vx	62 KIAS
Best rate of climb speed		Vy	74 KIAS
Maneuvering speed		Va	
	2550 lbs.		105 KIAS
	2200 lbs.		98 KIAS
	1900 lbs.		90 KIAS
Flaps extended		Vfe	
	0-10°		110 KIAS
	10-30°		85 KIAS
Max. structural cruising speed		Vno	129 KIAS
Enroute climb speed			75-85 KIAS
Approach Speed			60-70 KIAS
Never exceed speed		Vne	163 KIAS
Demonstrated Crosswind Component			15 knots