

A Discussion of the Cessna 414A Chancellor

Intentionally, no mention of the Cessna Model 414 is included, unless necessary, to clarify a change. JTA Stresses that readers should consult other Twin Cessna reference materials for further information. Published Cessna History Books, articles and training school manuals are available. Contact JTA to acquire a Jerry Temple Aviation/Twin Cessna/414 Information Package.

With Model Year 1978, Cessna introduced the 414A Chancellor. The obviously two main changes were the changes to the Fuel System and the Landing Gear.

Cessna eliminated the traditional Tip Tank Wing and installed a 4.5 foot longer Straight Bonded Wing, which holds the 206-Usable Gallons. The Wing is the Fuel Can. Eliminated were the Tip Tanks, which were the Main Tanks, the In-Wing Auxiliary Tanks and, when installed, optional Nacelle Tanks. No more Rubber Bladders anywhere. The Fuel Management System went from viewed as complex to a simple Left/Right and On/Off - Skyhawk like.

A 30 square foot increase in wing area (lift) allowed a 400-pound increase to the Gross Take Off Weight and a 550- pound increase to the maximum Landing Weight.

The Longer High-Aspect Ratio "Glider Like" Wing is the longest of all Cessna Piston-Powered Twins. To prove its efficiency read below.

The 414A's out-the-door at Cessna Single-Engine Service Ceiling with the Stock 310 HP Engine is 19,850 feet. Almost 20,000 feet. The 421C's out-the-door at Cessna Single Engine Service Ceiling with 375HP (65 more per side) is 14,900 feet. Almost 5,000 additional feet of Single-Engine Ceiling, but with 130 less horsepower. It's called Aerodynamics.

The Model 421's longer nose was accommodated to the 414A adding space for 410 pounds more baggage. The 414A also got the 421C's Vertical Stabilizer, Rudder and Rudder Trim Tab.

The 414A received the 421C's Landing Gear and Hydraulic Actuation System. With the Wet Wing design, a Hydraulic System replaced the Electro-Mechanical Landing Gear, featured on all Tip Tank Twin Cessnas. The Hydraulic System eliminated the Inner Gear Door and the requirement to slow down to a 140 IAS for Gear Operation (VLO) and 140 IAS Gear Extended Flight Speed (VLE). The Hydraulic System has a High VLO and VLE of 177 KTAS. When a 414A flies over, one can see the tire in the wheel well.

The Hydraulic Gear operates fast. With two engines operating, it retracts/extends in just four seconds. A fast after take-off clean up. Even on one engine, the retract/extend time is only 7.5 seconds. To extend the gear in an emergency, a 2,000-pound nitrogen blow down bottle is provided. It's a one-time blow down. It's impressive.

The larger 414A Wing allowed the Landing Gear to be positioned so the aircraft has a "Wide Stance Gear". Look at the gear from the front or the rear and see how this wide track stance allows smoother taxiing in crosswinds and is a significant pilot aid in landing on a short and narrow runway in a crosswind.

Cessna 414As modified with Ram Winglets are nicknamed '414AW'.

The 414A's new larger Vertical Stabilizer and Rudder provides significant Yaw Control. If practicing Single-Engine Operations while on Autopilot Heading Mode, the aircraft will merely "lean" approximately two degrees if a throttle is reduced to idle. No big deal. If hand flying, the experience is minor. If the need to feather the engine is necessary, the huge "Barn Door" Rudder will easily straighten the nose and the large Rudder Trim Tab eliminates control pressures. In Addition, the large Vertical Stabilizer and Rudder provides excellent Yaw Control for crosswind taxiing and landings.

Heavy duty Cleveland Wheels and Brakes become standard equipment on the 414A.

The 414A's original engines were the Continental TSIO520-N with 310 HP and a 1400 Hour TBO. Most 414A's today are powered by the Continental TSIO520-NB with 310 HP, or more, and a 1600 Hour TBO.

JTA advises Buyers to hold up five fingers. The available engine versions are the 310 HP, just as Cessna made it, and it remains a fine aircraft. RAM Aircraft in Waco, TX modifies the TSIO520-NB to increase horsepower. The Series IV Conversion increases HP to 325 HP per side. the Series VII increases HP to 335 per side. There is no RAM VI Conversion for the 414A. RAM once offered the Voyager Liquid Cooled RAM V Conversion. Only approximately 35 aircraft were converted. Eleven have been made into a Series VII. JTA does not normally recommend a Series V 414A, but can discuss its merits and problems with customers.

A fifth (5th) engine "set-up" is the 414A with the Stock 310 HP engine and American Aviation Intercoolers. The large Quantities of thick cold air provided to the Engine Induction System provide "RAM IV - 325 HP "Like" performance.

The Propellers on 414As will be different Models (as authorized by Supplement Type Certificates - STC's) from McCauley, Hartzell or the Four-Blade Composite MT Propellers.

Engine Overhauls and/or Exchanges can be with Engines from Continental Motors, RAM Aircraft, independent Engine shops and mechanics. This is a critical subject and one not to be taken lightly.

For customers considering Engine Conversions, a correct knowledge of aircraft performance and possible weight changes to Ramp, Take-Off, Landing and Zero-Fuel is important.

STC'd authorized weight increases are often not combinable. "No Double Dipping". Consult, if possible, with experts.

The 414A is heated in one of two ways. The first and primary choice is the warm and free pressurized air. It is a by-product of turbocharging. The warm pressurized air is often sufficient to keep crew and passengers comfortable. If this heat source is not adequate, then the 35,000 BTU Heater/Defroster is turned on. It uses a small amount of fuel from the right tank. There is a thermostat so comfortable temperature can hopefully be controlled.

Cooling the aircraft is first provided by outside fresh air. When additional cooling is needed, the 414A provides an Air Conditioning System.

The 414A is a Pressurized Cabin-Class Aircraft. The Engine's Turbochargers provide the air for pressurization. Again, this warm pressurized air can be temperature controlled for cabin heating. The Pressurization Differential is 5.0-PSI with a properly operating system and no system leaks. If leaks are detected in the cabin, aircraft's structure, from hoses, antenna, etc., they are repaired so a tight 5.0-PSI cabin "is made".

On all 414A's the Pressurization System is a Variable Rate System. Just as the aircraft's Vertical Speed Indicator shows the aircraft Rate of Climb or Descent, the pilot of a 414A can control the rate of feet that the cabin climbs and descends per minute.

Most pilots fly a 414A in the high teens and low twenties. 18,000 to 21,000 feet is typical. At these altitudes, the 414A Pressurization System will provide comfortable 7,000 to 8,000 foot cabins. An enjoyable flight!

Demanding Pilots/Owners, and their maintenance facility, should insist on Pressurization working properly. Like a human's interaction of its Respiratory and Circulation Systems, the 414A's interaction of the turbo charging pressurization - Heating/Cooling System is mutually dependent.

The 414A has excellent crew and passenger visibility. The crew has two large Windshields and large Side Windows. The cabin provides ten oval windows. For passengers who are "general aviation sensitive", the 414A's large, open, non-claustrophobic cabin will provide an enjoyable general aviation experience.

The 414 A carries lots of baggage/cargo. The huge Nose Section can accommodate 600 pounds. Each Wing Locker can hold 200 pounds. The Aft-Cabin Pressurized Baggage area can accommodate 500 pounds. Total 1,500 pounds of baggage/cargo.

Most 414A's have an Aft Right Side Refreshment Center and Potty Configuration. Some later model 414A's had forward positioned (behind the Pilot's or Copilot's Seat) Refreshment Centers. A few aircraft were delivered with "Flushing Potties". Many such units are inoperative today.

The 414A is, with rare exception, Certified for Flight Into Known Icing. This basically means that all Airfoils are Booted - the Outer Wing and Inner Wing Stubs, the Horizontal and Vertical Stabilizers. The Propellers are electrically heated. The Forward Fuselage has Ice Protection Plates. The Pilot's Windshield is electrically heated. The 35,000 BTU Defroster provides defroster heat for both the Pilot and Copilot side. The aircraft has 100 Amp Alternators. All Pitot Tubes, Static Ports and the Stall Vane are heated.

There are many after market products for the 414A and Twin Cessnas. Many 414A's may now have some of these installed. JTA will not herein address merits, costs, etc., of any of the products. Obviously, some will affect aircraft value, performance, weight, etc. These are:

- Ram Winglets
- Vortex Generators
- Spoilers (Speed Brakes)
- Aft Fuselage Strakes
- Wheel Covers
- GAMI Fuel Injectors
- Graphic Engine Monitors
- Engine Management Systems
- Rosen Sun Visors
- Tinted Window Panes

The Buyer of a 414A should insist, and invest, in a proper Checkout from an Insurance Approved Twin Cessna Instructor. All Systems, such as Turbocharging, Pressurization, Aircraft Heating and Cooling, Landing Gear Operation, Fuel Management and all Deicing/Anti-Icing Equipment support a confident and competent pilot.

Disassociate yourself from any Pilot, Instructor and Shop with "it's just another Twin Cessna" attitude.

You can interchange the title 414A or Chancellor and the interchange of Professional and Jerry Temple Aviation.

For further information about the Cessna 414A Chancellor and other Twin Cessna Models, see www.jerrytemple.net. The World's Largest Twin Cessna Website. Be sure to review Buyer and/or Seller Services. Temple's Tips, Training and Available Aircraft.

JTA does not confirm, agree or state experience with any published 414A Brochure. Many present day factors, such as Airframe and Engine Modifications, Weights, Runway and Atmospheric Conditions will effect aircraft marketing information.

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