

## **The Cessna 340/340A – the MVP**

**By Jerry Temple**

When the editor of the Cessna Owner's Organization asked me to write an article about the Cessna 340, my first thought was one I've expressed to callers many times. In my library, of which I am very proud, I have collected many articles and pilot reports about the various twin Cessna's, which are my specialty. A reality of selling, flying and writing about aircraft that were manufactured in the 1960, '70s and '80s is that much is historical. Often a publication will publish an article about an aircraft type every few years. For example, The Aviation Consumer has prepared their Used Aircraft Guide featuring the Cessna 340 several times, i.e. August '88, a mid '90s report and a February '04 report. Certainly there can be changes, both good and bad. There can be new ADs and Service Bulletins issued, new products, manufacturer news, etc. However, only so much can change. In aircraft sales of 340's, and other twin Cessnas, obviously supply and prices will change. So in preparing to write this latest 340 article I reviewed articles and reports in The Aviation Consumer, Flying, Cessna Owner's Organization including a 340 article I wrote in December '96, and articles in the Twin Cessna Flyer. The history of the 340 is well documented in William Thompson's Wings of the World. So with so many articles and reports written through the years what can I write that's new and hopefully helpful for today's Cessna 340 owners, pilots and prospective buyers.

As Super Bowl XXXX ended and the trophies were presented, including the games Most Valuable Player (MVP), I reminded myself how often I refer to the Cessna 340/340A as the "MVP" of its class. So what follows is somewhat of a review of the conversations I regularly have with pilots considering the purchase of a Cessna 340 or 340A. Before we go further let's establish that the Cessna 340 was introduced in 1972 and was powered by 285 HP Continental TSIO520-K engines. In 1976 the 340A was introduced. It was powered by the 310 HP TSIO520-N and later by the heavier case NB, but the horsepower remained at 310 HP. For this article, I'll simply refer to this airplane as the 340.

Many callers are confused by the various engine modifications on 340's. There are five engine/HP combos available. First, I suspect in the whole world there are but a handful of 340's still powered by the original 285 HP "K" engine. I've never seen one in my career, which began in the mid-seventies. And, I'd certainly not recommend anyone buy a 285 HP powered 340. Consider the standard engine the 310 HP TSIO520-N or NB. As the 1400 Hour TBO "N" engines require overhaul and exchange they're replaced with the 1600 Hour TBO TSIO520-NB. RAM Aircraft of Waco, Texas offers three engine conversions for the TSIO520-NB; the RAM Series IV increases the horsepower to 325 HP; the Series VI increases horsepower to 335 HP and the Series VII also increases HP to 335. Many 340's are powered by the standard 310 HP engine with American Aviation Intercoolers installed.

I have many hours of flying many 340's with these different engine "set-ups". I've stated publicly that the standard 310 HP engine, when combined with the American Aviation Intercoolers, provides RAM IV (325 HP) like performance.

Several McCauley and Hartzell propeller types can be found on 340s. Propeller TBO's are usually 1500-2000 hours or five years. However in Part 91 Operations, this is only a

manufacturer's recommendation. For example, for the owner flying a typical average of 100 hours per year, a freshly overhauled prop would only have 500 hours SPOH in five years. Few owners would rush out to overhaul their five year old 1500 hour prop. An Annual Inspection is satisfactory.

Next to engines, the mods I'm most asked about are Vortex Generators (VGs), Spoilers and a few STOL System questions. The vast majority of 340's have VGs installed. An experienced installer can do this simple airframe modification in a day. At one time, there were 3 - 4 competing VG firms. With mergers and other business changes, there are primarily two firms remaining. They sometimes will offer slightly different performance figures, i.e. airspeed changes, weight changes, etc. VGs provide the 340 with a 300 Lb. increase to the Gross Take-Off Weight and Useful Load. Whereas many 340's left the factory with an approximate 1450 Lb. Useful load, thus limiting Payload to a couple of people with what became known as the 163 gallon standard fuel load. With VGs installed, Payload with 163 gallons rose to about 1772 Lbs. This weight will vary. Suddenly a pilot with spouse, a couple of kids and an SUV full of needed gear could be carried.

Besides the Gross Weight and Useful Load changes provided by VGs, the far more important benefit is Single-Engine safety. No VGs do not eliminate VMC (Velocity – Minimum Control) but unless you're in a coma, you'll never see VMC. The 340 will begin to stall, and hopefully the pilot will accept this fact, and lower the aircraft's nose, thus preventing the continued loss of airspeed and eventual loss of directional control. I would not own a twin without Vortex Generators. Other VG benefits can be reduced brake and tire wear, improved take-off and landing distances and the associated accelerate-stop and accelerate-go distances. The VG manufacturers offer Jerry Temple Aviation (JTA) excellent discounts due to volume purchasing and these savings are passed on to any twin Cessna, or other aircraft buyer.

Spoilers, a.k.a. Speed Brakes, are nice. The 340 is often a challenge to both slow down and descent. Spoilers by Spoilers Inc. consist of a single panel on the top of the wings that pop up and "spoil" lift. They have no speed restriction. Do they help in controlling engine cooling? Yes, they do make the pilot's job easier. Can you safely and properly cool the 340's engines on descent and also manage speed and altitude without Spoilers? Of course. A good checkout, self-discipline and practice will allow for textbook descents from cruise altitude to touchdown.

The Robertson High Lift System (STOL Kit) which was purchased by Sierra Industries of Uvalde, TX in the mid-'80s and later marketed as the R/STOL System is no longer manufactured. Regardless of what might be said by a Sierra Rep, the STOL Systems for Cessna twins are no longer manufactured. And, if they were manufactured their cost would likely exceed \$50,000. Vortex Generators do aid in reducing take-off and landing distances, but *are not* STOL Systems.

If there is the absolute requirement to regularly operate a 340 from a runway with less than 3000 feet then a search for the relatively few 340's with STOL Systems is required. Can parts be an issue? Yes. Sierra does stock and manufacture some R/STOL System parts, but many components were vendor supplied and that may be a problem.

I'm often asked to explain the difference in a 340A II or 340A III. Add to that the RAM designation for Series IV, VI or VII and you might see a Spec List for a 1981 Cessna 340A II RAM VI. Confusing to many. Simply forget the Cessna added Roman Numeral II or III. These were simply marketing packages. As with new cars, Cessna would group several popular options into a package and discount the cost vs. each item being ordered separately.

The 340A II or III package was mostly Avionics. This primarily meant Cessna 400 Series Avionics with the II package and Cessna 800 and 1000 Series Avionics with the III package. Today, in 2006, it's a rare aircraft whose panel has not been changed somewhat since its manufacture. I've looked at several advertised II and III models on various Cessna twins and not one was totally unchanged. The II and III designations should not be used in advertising.

Many buyers are confused between the terms Certified For Known Icing or simply Full DeIce or Fully DeIced. The following explanation has some loopholes that perhaps only a few of us "experts" are aware of, but for the typical 340 buyers the differences follow. The Known Icing Kit became an option in 1977. With "Keep It Simple" in mind, a Known Ice 340 had DeIce Boots on both the outer and inner wing (the stub between the Fuselage and Nacelle), both the vertical and horizontal Stabilizers have Boots, electrically heated Propeller Blades, Fuselage Ice Protection Plates, 100 AMP Alternators, Heated Pitot/Static Systems, heated Fuel Vents or non-icing type Fuel Vents, a Heated Strip a.k.a. Hot Plate on the pilot's Windshield and a light that illuminates the Left Wing.

Many 340's were manufactured with Outer Wing Boots, Full Tail Boots, Hot Props and other DeIce/Anti-Ice items, but the primary difference was an Alcohol Windshield Anti-Ice System. Small nozzles, not unlike an auto's windshield washers, spray a fine mist onto both the pilot and copilot's Windshield. There is a three gallon alcohol reservoir in the rear of the right Wing Locker area. This system is commonly referred to as Full DeIce. Buyers need to question Spec Lists where Full Ice or simply DeIced is listed. Often the seller may be confused or it's an intentionally misleading term. Without question, there are pilots and locations where Known Icing is needed. But, for many pilots, a 340 with Full DeIce is adequate. The Alcohol Windshield Anti-Ice Systems, when used in conjunction with the 35,000 BTU Heater/Defroster can often perform quite well.

Much has been written about the Fuel System in the Tip Tank Twin Cessnas. It's true the system in the Wet Wing 414A and 421C is an improvement. Here's a Jerry Temple quote - "Give me one three hour cross-country delivery flight in a 340 and I'll have the new owner able to teach the system". I say it frequently. The three quantities to remember are 163, 183 and 203 gallons of usable fuel.

The famous Tip Tanks are the Mains. They carry 50 gallons each. Within the Wings are the Auxiliary Tanks. To the pilot it's a 31.5 gallon Aux Tank in each wing. Thus, the Mains carrying 100 gallons and the Aux Tanks carrying 63 gallons (31.5 x 2) total 163 gallons. This 163 gallon capacity has become known as the "Standard System". Some early 1972 - 74 340's had a 140 gallon standard system. Many 340's have a 20 gallon Nacelle a.k.a. Wing Locker Tank, positioned behind either engine. With a single Nacelle tank the Useful becomes 183 gallons. With two Nacelle tanks, also called the Double Wing Locker System, the Useful fuel

becomes 203 gallons. Tom's Aircraft in Long Beach, CA manufactures after market tanks that can be installed when factory Nacelle tanks were not installed, and can also be installed within the Wing Locker Storage areas. Depending on how the aircraft was manufactured from 1 – 4 Tom's tanks can be installed.

Depending on the 340's engine and power settings, 340s will average a fuel consumption of 30 – 36 gallons per hour. The Flight Plan Speed for a 340 is 190 KTAS. Typical cruise speeds in the high teens to low twenties will be 190 –205 KTAS. I rarely take a 340 above 21,000 feet and usually cruise between 18-21,000 feet.

I market twin Cessna aircraft with three references to Avionics. First, Second and Third Generation Avionics. First generation refers to the aircraft's original package. For a 340 this will usually be the Cessna 400 Series Avionics. Often in the 1970's and 1980's King Silver Crown or Collins MicroLine Avionics were installed. This may have been total retrofits or partial changes. Usually the Cessna Autopilot was not changed. That was just too costly and complicated. Therefore, today you'll find many 340's with combinations of Cessna 400 Series Avionics and King Silver Crown or Collins MicroLine equipment. Some aircraft will have King, Century or Bendix Autopilots. Some will also have a Flight Director. The change from the original Cessna Package to King, Collins, Combo, etc. is called Second Generation Avionics. Third Generation Avionics will consist of all new Garmin equipment or combinations of Garmin, Avidyne and Cessna, King and Collins. Many 340's will have a combination of Avionics.

Since I've referred to buyer, caller, etc., I'll describe the typical 340 buyer. There are definitely exceptions and variations, but a few common links exist. Many are pilots with a spouse and 2 – 3 children. The kids will not wear oxygen masks and headsets. Many now own well-equipped High Performance Single Engine (HPSE) aircraft, but seek both Multi-Engine performance, cabin class comfort and pressurization. Some buyers are retired, or close to retiring, and the 340 will be their traveling machine. For many it's a dream come true. For many buyers the 340 is a stepping-stone. Perhaps not too many Beech A36 or Baron owners are reading The Cessna Owners Magazine, but many Bonanza and Baron owners purchase a 340. Though they love their Beechcraft, when the time comes for pressurization the 340 simply was the smart move. Often their "some day goal" is a King Air. Flying a 340 for 200-300 hours is the perfect airplane before moving up to a turboprop.

Obtaining insurance is often the greatest challenge to buying a 340. Often a financially qualified buyer cannot obtain insurance. The number of Insurance Underwriters selling piston twin coverage has been reduced and only a couple of firms will consider low time pilots. I advise any low time pilot to only work with senior/experienced agents and to develop a plan for the acquisition. This can include the aircraft's sales firm, insurance agent and flight training firms. Premiums for low time pilots, often with new Multi-Engine Ratings, are often \$10-12,000 per year. The accompanying training requirement is equally as important. Many buyers will be OK with the premium, though perhaps a high one. However, what may seem as an excessive Dual Requirement can often be the deal killer.

Thinking positively, let's assume a 340 purchase, obtaining insurance, getting a hangar and all other acquisition challenges are successfully dealt with. It's now your 340 to maintain.

Maintenance by Twin Cessna Specialists is required. The local shop can conduct routine and basic service. But, needless to say, the initial Pre-Purchase Inspection, Annual Inspections, and major modifications should be performed by Twin Cessna Specialists. The results of this not being done routinely shows up at pre-buys. The owner who, of course, thinks he's spending a lot of money on maintenance, may not be. Often, at pre-buys sellers get surprised at the "squawks" found in their perfect aircraft.

Just as the aircraft must be properly maintained, the pilot too must be maintained. It's true the insurance requirement for both Initial and Recurrent Training may dictate the minimum training required, but only doing Recurrent Training once a year is like saying the aircraft only needs an Annual Inspection to be properly maintained. I urge owners to attend the Twin Cessna Flyer Organization's weekend Operations Seminars, a Simulator School once a year and annual in-aircraft training with a skilled twin Cessna instructor with experience in type. Because your ex-military or airline friend, who has thousands of flight hours, or flew a 421 years ago is available, does not mean this should be your 340 trainer. Have they attended recent 340 training, owners' groups classes and other training? Are they "on top of" recent ADs, SBs, checklist revisions, etc.?

I am often asked which twin Cessna is my favorite. Each has its own niche and I respect its performance in that role. I can create comparison charts of how the Cessna 340 stacks up against the Baron 58P, Aerostar and its toughest competition, other twin Cessnas. All of the normal aircraft performance data can be compared. The how high, how far and how fast are numbers. Compromise is constant in flying. Numbers are evaluated in different ways.

But, I get a very personal view of the 340 several times each year. As a professional aircraft broker that specializes in twin Cessnas, I annually sell 8 – 10 340s. The 340 represents 30 – 40 percent of my annual sales. My business "MO" has me speaking to a buyer from the first general information inquiry to weeks or months later. It can involve overseeing an inspection and supporting a delivery flight. I often will meet the family and witness how the airplane is used. I seek and receive regular feedback from buyers. Often Recurrent Training is involved.

Some other aircraft may better the 340 in a particular STAT. But, for the Entry Level - Piston Powered - Cabin Class Pressurized Twin, the Cessna 340 is The MVP – The Most Valuable Plane. For many a business and family, a 340 is just the right airplane. Pull up on the ramp with a loaded SUV and then load the 340. There's Nose and Wing Locker compartment storage. The Aft Cabin Baggage Area is pressurized. Regardless if the passengers are family, clients, employees or friends, all will appreciate the pleasures of general aviation at its best. Go fly for 3½ hours at 200 Knots at 20,000 feet. You're above the singles and below the jets. No oxygen masks with a typical 7– 8000 Ft. Cabin.

Several times a year I deliver a "New 340" with its New Owner to its New Home Base and New FBO and get to share in the excitement of the delivery. Sometimes it's a buyer's dream that's come true. Sometimes it's a continuation of a course with another milestone a year or two away. Regardless, if the purchase is a pilot's first aircraft, or the planned last airplane, the 340 so often is the best candidate for the job. I vote for the 340.

*Jerry Temple operates Jerry Temple Aviation (JTA). JTA is based in Frisco, TX (N. Dallas area). JTA annually supports both twin Cessna buyers and sellers. See [www.jtatwins.com](http://www.jtatwins.com) or call (972) 712-7302.*