

A photograph of a blue and white Navion airplane flying over a forest at dusk. The plane is seen from a low angle, showing its wings and cockpit. The background is a dark blue sky with the silhouettes of trees. The text is overlaid on the left side of the image.

NAVION

Almost dignified way to travel

Overbuilt, slow, but a joy to fly

BY RICK DURDEN

IT just wasn't as fast as it looked. This sad, true, but overly simple phrase is the requiem expressed by those who have not learned the secrets of the Navion. To those fortunate enough to own and fly them, Navions are arguably the best-handling and most comfortable retractable singles ever built. So much so that Bonanza owners, who fly very good airplanes in their own right, have been known to walk away after a Navion flight

PHOTOGRAPHY BY MICHAEL P. COLLINS

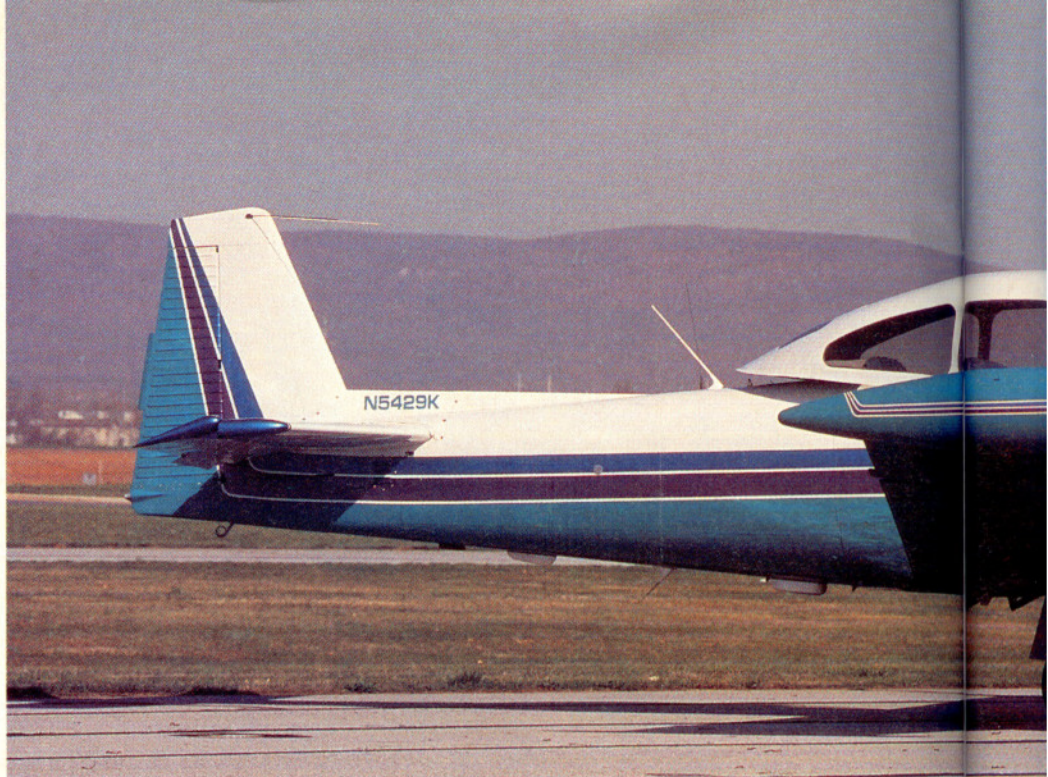
muttering, "At least mine goes faster."

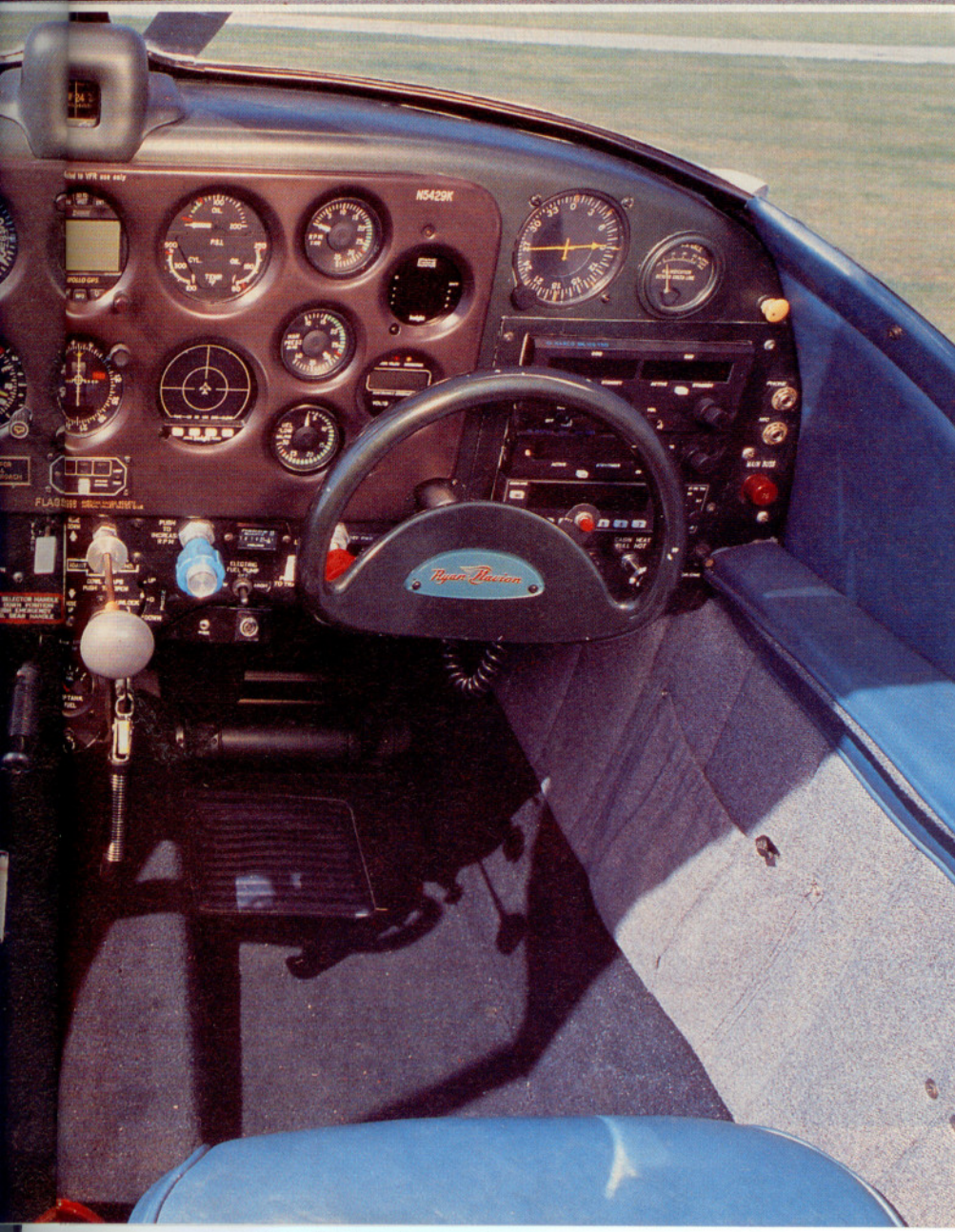
Fresh from building some remarkable airplanes during World War II and soon to turn out the F-86 Sabre—a jet fighter still beloved for its handling—North American Aviation Inc. took a deep breath and entered the postwar general aviation sales fray. It chose to build one of the few four-place retractable singles to hit the market. The Navion did well in its first year, 1946, but faded after the Beechcraft Bonanza was introduced and its impressive speed became apparent. North American, perhaps prescient in recognizing the degree to which people would willingly cram themselves into tiny spaces for the sake of speed, sold the design and many completed parts to the Ryan Aeronautical Corporation (now Teledyne Ryan), leaving the general aviation field for other endeavors.

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When one views the lines of a Navion, with its sliding canopy, the P-51 Mustang heritage is obvious. Interestingly the more apt comparison among products from the North American drawing boards is with the B-25 Mitchell. Like the Navion, the B-25 was not fast, but wondrously easy to fly, amazingly stable, and capable of stunning short-field work, as a certain lieutenant colonel with the wildly inappropriate name of Doolittle demonstrated in early 1942. The only difference was that the B-25 was very heavy in roll, while the Navion is not.

North American had figured out the benefits of tricycle gear on the B-25 years earlier, so the fact the Navion was not equipped with a tail-wheel surprised no one. Quite striking are the length of the landing gear legs and the resultant propeller clearance from the ground. The beefy gear





struts absorb some impressive shocks on landing, a legacy of a desire to be able to alight almost anywhere, and perhaps to convince skeptics that a nosewheel airplane was suitable for unimproved fields. Instead of the Mustang's laminar-flow airfoil, the Navion has a high-lift, high-drag wing with significant camber on the underside. The combination of the specialized wing and flaps with 45 degrees of travel resulted in nearly legendary short- and rough-field ability for a 2,850-pound airplane. It also created a lamentable cruise speed of only 120 knots on 185 horsepower (205 for takeoff) and, later, 225 hp.

Part of the reason for the aircraft's durability and its ability to absorb punishment is that it was substantially overbuilt. North American sought to sell a great many to the military, so military requirements figured prominently in the design. It did sell to the military 250 of the 1,100 it built, so the type is a legitimate warbird.

In 1948 Ryan took over and built the "A" model for three years, producing about 1,200 airplanes. The type certificate then began a process of changing hands. Versions of Navions with increasing horsepower; doors instead of a canopy; and more fuel capacity—but not much more speed—were built in fits and starts through the mid-1970s.

There seem to be more aftermarket modifications out there for the Navion than for virtually any other airplane, making an original Navion very hard to find. Speed mods prevail, yet the more realistic owners admit that it is difficult to eke out much more than about 10 kt even with all the mods.

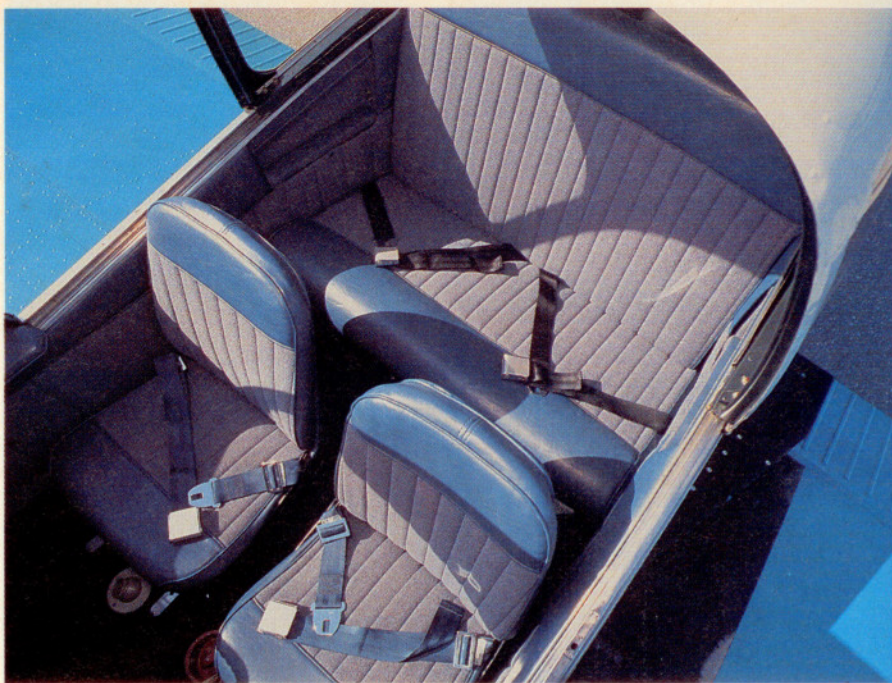
From anecdotal evidence, the utterly delightful handling of the Navion has consistently had a most interesting effect: Numerous owners claim to have made their purchase decision after but one flight. For a certain proportion of the pilot population, speed is easily traded for comfort, handling, and incredible toughness.

Walking toward a Navion, one is first struck by the height of the airplane. The wing hits a person at mid-chest level. The lines are relatively clean, but there are also jarring inconsistencies. The vertical tail appears to be abruptly truncated. While tail area is more than adequate because of its long arm, it had to be short enough to fit through the door

of a T-hangar. The many-paned windows are held in with large, unsightly rubber gaskets that reduce manufacturing time, but are drag incarnate. Most owners have modified their airplanes to remove the gaskets, as well as gone to a one-piece windshield.

On most Navions, boarding is via a step which juts from the leading edge of the wing—causing one to hope that Navion pilots always shut down the engine before loading or unloading passengers, given the proximity of the propeller. Sliding open the canopy is surprisingly easy. It glides on heavy-gauge rails, another example of the build-it-solid design philosophy applied to the airplane. On opening, the canopy takes with it the headrests for the rear seat and exposes the baggage area. Loading baggage means hauling it up and into the cabin, then heaving it over the rear seats—not an easy task. A popular aftermarket mod is a left fuselage baggage door. The rear seats do fold forward, so that one can get at baggage while in flight.

For a complex airplane, preflight is easy. Flap hinges and the actuators for the flaps hang well below the lower surface of the wing, adding drag but making inspection a snap. The cowling opens up to expose the entire engine compartment, allowing one to also inspect the hydraulic pump and hoses. The original rigid hydraulic lines had a reputation for breaking. Once owners switched to flexible hoses, problems diminished. A willingness to do routine preventive

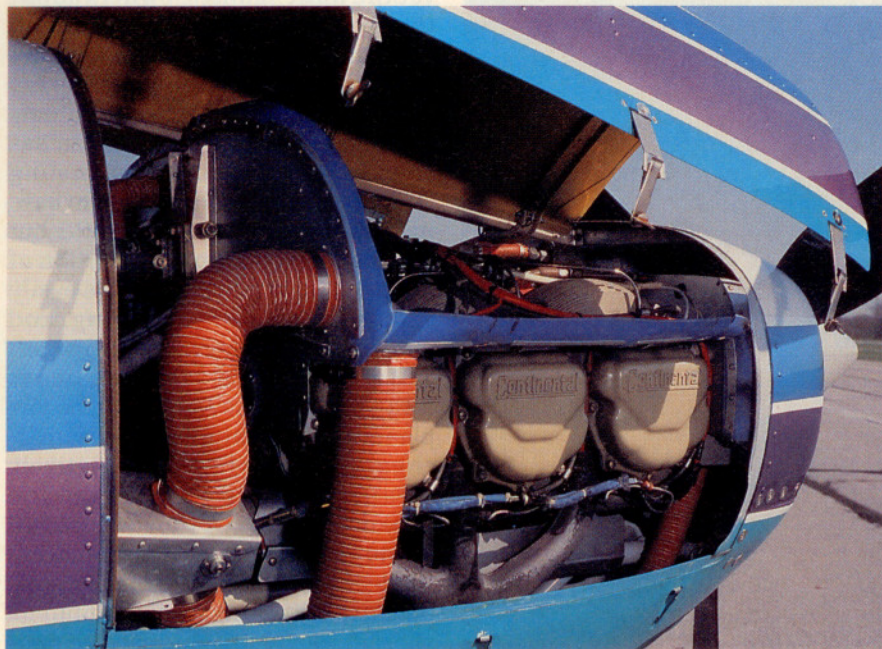


John Damgard's 1951 Ryan Navion B has undergone extensive refurbishment inside and out. It is powered by a 300-hp Continental IO-550 that pulls the airplane along at a speedy 160 kt, while burning 16 gallons per hour.

maintenance seems to keep the hydraulically powered landing gear and flaps happy. Should a hydraulic line break, owners report that the gear will extend, thanks to some large springs that are part of the aircraft's emergency gear extension system. It takes but a bit of rudder-pedal-induced yaw to snap the mains to a locked position while the nose gear takes care of itself.

Boarding is challenging the first time. Left foot on the step, left hand on the fuselage handle—followed by

a step up with the right foot to the wing. Step over the canopy sill and down to the floor behind the front seats. Next, work your way forward between the seats to the command spot. Once you are ensconced, the position is more comfortable than that in almost any other airplane built. Fore and aft seat adjustment is more than adequate for the full range of pilot physiques. The instrument panel starts directly under the windshield, with no glareshield at all, a somewhat novel feature that keeps



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one from putting something metallic next to the compass. Seated, you are at the leading edge of the wing—which, together with a nose that slopes sharply downward, makes for extremely good visibility. The rear-seat occupants sit higher than those in the front, again quite rare. This movie theater approach makes every seat in this house a great one.

The fuel system has 20 gallons in each wing and 20 gallons under the rear seat, although there are modifications to add more with tip tanks. At about 12 gallons per hour, endurance isn't bad. While the idea of fuel inside the fuselage can be a bit disconcerting, the rugged construction of the airplane helps to protect the tank from breaching in a crash.

Startup, per the checklist, involves pressing the foot starter, letting the prop go through four revolutions, then turning the ignition switch to the Both position. Sadly, most of the foot starters are long gone, so internal combusting now comes about from the ubiquitous ignition key's being turned to the Start position. A certain panache was lost with that "improvement."

The ride while taxiing offers a very noticeable indication that this airplane is unlike others. The gear absorbs bumps and potholes, providing a solid ride so deceptive that owners have damaged nose gear legs by taxiing too fast on rough surfaces simply because they did not realize how bad the surfaces truly were.

Runup reveals nothing very unusual, although because of the instrument locations, it may take a while for the new pilot to find the appropriate gauges.

Takeoff is the next pleasant surprise. Acceleration is smooth and rapid; the 48-kt rotation speed shows up quickly. The airplane launches in 500 feet or so, then climbs nicely at 70 kt. Should obstacle clearance be of interest, 20 degrees of flaps is used with 61 kt on the airspeed indicator. To retract the gear, it is first necessary to activate the hydraulic system with one knob, then raise the gear with another. Once the gear has finished its cycle, the first knob is moved again to deactivate the system. According to owners, this extra bit of work—also required for flap operation—soon becomes second nature.

In addition to making the airplane very stable by using substantial dihe-



dral, it soon becomes apparent that North American engineers knew how to design controls that were well-harmonized in all axes and are also very responsive. Control responsiveness and stability in cruise often seem to be mutually exclusive, yet the designers paired the two well on the Navion.

Instead of wagging its tail in turbulence, it resists displacement, riding out the bumps with a minimum of dislocation. The rudder-aileron interconnect system means that coordination in a turn is nearly effortless. Slow flight is second nature for the highly cambered wing, with all flight con-



trols retaining authority through the very docile stall. Steep turns are without vice.

Sitting in the captain's seat in cruise, you cannot help enjoying the manner in which the Navion rides as the landscape rolls serenely by. This airplane simply defines dignified air travel. The sails are set. The breeze is freshening. The world beckons. To hell with the numbers on the air-speed indicator.

Far too soon, a flight in a Navion draws to a close. Should an instrument approach to a landing be chosen, it may be measured in yawns. Because of its stability and smooth control response, the airplane is an ideal instrument platform. Pilots new to Navions set things up, intercept the final approach course, begin tracking inbound with minimal fuss, and then wonder if they have missed something. The workload involved in keeping other airplanes pointed in the desired direction on approach simply is not present in the Navion.

The one shortcoming that does become apparent is the painfully low speed for landing gear and flap operation—only 87 kt. Navion pilots become masters in negotiating with ATC for lower altitudes early so that they can put the gear down before

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reaching the destination airport. Even for VFR flight, this limitation means that a pilot has to do some planning for the arrival. For while the Navion is not fast in cruise, it is also unwilling to slow down to landing speeds when the time comes.

Once the hydraulic system has been cycled on and off in the process of lowering the gear and extending the flaps, the approach path can be shockingly steep. With a final approach speed of 61 kt and massive flaps, it is easy to land in places from which the airplane cannot depart under its own power. The military-inspired gear will absorb most goofs nicely, further adding to the fascination that so many have with this machine. The Navion is one of those rare airplanes that turns a simple flight into a sensuous event.

From a nuts-and-bolts point of view, the structure is built overly strong; the systems are pretty straightforward; it has few problem areas; and it is probably the only airplane born of its era to have a decent owner's manual—printed in color and spiral-bound, no less. New, the Navion was a full cut above the tube and fabric tailwheel airplanes that were offered by so many at the time. It attracted those service pilots returning to the civilian world from heavy iron and unwilling to putt around in aircraft subject to every tiny gust. It carried a decent load and handled better than any general aviation airplane at the time. Yet, it committed aviation's mortal sin: It was slow.

One year after the Navion debuted, the faster Bonanza appeared, costing no more to maintain and feed than the Navion. The result was inevitable. The Navion now occupies that special niche for discerning owners who demand handling and comfort and forgive the sedate manner in which it traverses the sky. □

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