

Pilot Flight Check:

The 1976 Navion Rangemaster

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Its tradition as a fine flying,
but not-too-profitable, airplane
appears to continue

■ Navion, 30 years old this year, might be termed a modern relic. This single-engine airplane line has, during its lifetime, withstood enough adversity to have long-ago buried almost any other business venture. Its factory or headquarters has moved to at least seven different locations under eight separate owners; it has been pounded by a killer hurricane; suffered three bankruptcies; gone for a ride with an apparent flim-flam artist; competed against one of the winningest planes ever, the Bonanza; and, experienced enough changes to its original design that you'd think it was the class project of a group of college aerodynamics students.

Yet, 30 years later, new Navions have come gleaming out of the factory. However, at last word, Navion is again in trouble. The company is in the midst of a bankruptcy proceeding; most of its 65 employees have been furloughed, and the Wharton, Tex., factory is as quiet as a caterpillar climbing a conifer.

Since 1972, rights to Navion production have been held by the Navion Rangemaster Aircraft Corp. Its president, Cedric Kotowicz, recently spoke to *The PILOT*, admitting the financial mess his company was in, but stressing his interest in continuing to build Navions. Eight aircraft rolled from the factory in late 1975 and 1976—the first Navions to be produced since the 1960s.

The bankruptcy proceeding now going on with Navion has as a goal the infusion of new money into the company rather than liquidation of the company holdings. A petition filed at the U.S. District Court in Houston showed the Navion Rangemaster Aircraft Corp. with debts of \$719,233 and total assets of \$2,695,030. According to Kotowicz, the Small Business Administration, which supplied \$480,000 in loans, is the company's largest creditor. He estimated it would take between a half million and three million dollars to turn the company around.

In a related event, Kotowicz and John Dalton, Jr. of Phoenix, Ariz., who had been board chairman of Navion, were recently indicted by a Wharton County, Tex., grand jury on a criminal charge of theft. According to Assistant District Attorney for Wharton County Ken Lipscombe, Kotowicz and Dalton allegedly received money, about \$16,000, for the purchase of aircraft engines—which were never delivered. The money was, instead, diverted to day-to-day operating expenses at Navion, according to the charges. The case is scheduled to go to trial in October.

A recent plan, assuming new money could be found for Navion, would move the company from Wharton to Mineral Wells, Tex. There, says Frank Hoy, assistant to Kotowicz, the plane could be produced with less rent and a better labor pool.

Dalton, on the other hand, who sold his interest in the company in April, said he's trying to re-acquire Navion out of the bankruptcy proceeding.



Where all this will lead is yet to be determined. In the meantime, there are Navions out there, including brand new 1976 models.

Last spring, the Navion builders worked out an agreement with used plane dealer Two Jacks, Inc., to buy and distribute the first 100 of the new Rangemasters built. Jack Adams and Jack, Jr. are the two Jacks, and they have a large hangar and offices on the airport at Olive Branch, Miss., about 10 miles southeast of Memphis, Tenn.

The Rangemasters built most recently were flown unfinished from the factory to Oklahoma City, where Downtown Airport installed radios and interiors, and put a coat of polyurethane paint on the outside. The planes have then been flown to Two Jacks, where they were given a final going-over, and put on the sales counter.

On the ramp at Two Jacks was a



The Navion in flight over Memphis, Tenn.'s General Dewitt Spain Downtown Airport, which is located on the banks of the Mississippi River.

bright new avocado green and white 1976 Navion Rangemaster. No doubt about it, a Navion, but with cabin, not canopy. That was a refinement circa 1960, when it was decided that the craft needed a door, not a fighter's sliding canopy. The door went on the left side of the bird, then the model G.

More recent visible refinements include elimination of a center post from the narrow windshield, a three-bladed prop, and flush riveting.

N2558T showed only 18.3 hours on its Hobbs meter. Yet signs of poor workmanship on the craft, a model H, were apparent. The glass faces of two of the three fuel gauges had fallen to the floor, paint had given way to bare aluminum in a palm-sized patch on the right wing leading edge and, again, a small spot on the prop spinner.

Jack Adams, Jr. confirmed that there had been some quality control difficul-

ties with the initial Navions they had received, which explained why his company took their brand new airplanes and sent them off to the shop for a 100-hour inspection.

The airplane on the ramp, like all of the newest batch of Navions, is delivered fully equipped with a complete complement (112 pounds) of King avionics (including DME, encoding altimeter, and KFC-200 integrated flight director/autopilot), plus lots of little items often called options. The standard equipment list includes strobes, EGT, fire extinguisher, overhead vents, external power plug, and a fifth seat. The airplane's retail selling price is \$72,627.

Unfortunately, there was an item not available with the airplane when I flew it—a pilot's operating handbook. It was still off being printed, according to Adams. The unavailability of a handbook simply makes flying an unfamiliar

airplane a bit more of a challenge: one readily accepted.

Outside, the Rangemaster sports quick-opening cowl covers for easy access to the engine compartment. Three fuel system drains are under the fuselage, and wingtip fuel tanks add 34 gallons each to the 40 gallon main tank, giving a total fuel capacity of 108 gallons. A placard inside the cabin admonishes against using fuel from either of the tips until the main tank is within 10 gallons of empty.

Inside the cockpit some unique features are evident. Many of the engine gauges are of the vertical readout variety, including manifold pressure, rpm, fuel pressure, oil pressure, exhaust gas and cylinder head temperatures, and more. Above the windshield are fuel gauges, lighting switches, several circuit breakers and dimmers, and a random supply of other switches. Among



A pilot with Two Jacks, Inc. drains one of the three fuel sumps. Open cowl cover allows easy access to the engine compartment.

NAVION RANGEMASTER continued



Note the unique location of controls above the Navion windshield and vertical readout engine instruments to the left of the radio stack.

those overhead are one to turn on the electric turn and bank, a three-position fuel pump switch, a radio master, and switches for battery and alternator.

Overhead controls and vertical instruments are rare in a light airplane, but there were other features equally unique. The magnetic compass is found in the instrument panel, just above the radios. At the bottom of the panel is a knob labeled "hydraulic power," and below it "pull on." You guessed it—the knob had to be pulled out before the hydraulic pump would put pressure into the lines to retract the gear or operate the flaps. Hydraulic pressure is turned off when flaps and gear are not in use. The landing gear lever has a fastener below it to lock the lever in the down position. The lock must be moved aside with the ring and little finger of the right hand, while thumb and forefinger pull out and up on the gear lever. The task proved awkward at best, and impossible at worst. Fortunately, it's easier to lower the gear than to retract it.

One might think this ship a fuselage full of quirks. And one wouldn't be too far afield with such an analysis. Even getting into the Rangemaster requires olympic style and finesse to avoid placing a greasy shoe on a coordinated leather and fabric driver's seat. Even with the seat placed in its most rearward position, the front of its cushion is well forward of the front door post. Getting in and out, you "develop a technique," explained Navion President Kotowicz, who said he presently flew a Cessna 310.

A tough time starting up the Continental IO-520 285-hp engine was one aspect of my flights in the craft. Jack Adams, Jr., who checked me out, also

Navion Rangemaster Model H

Specifications

Engine	Continental IO-520-BA, 285 hp @ 2,700 rpm
Propeller	McCaughey three-blade, constant speed
Wing span	34 ft 9 in
Length	27 ft 5 in
Height to top of cabin	8 ft 6 in
Wing area	184.3 sq ft
Seating	5
Empty weight	2,000 lb
Gross weight	3,315 lb
Useful load	1,315 lb
Fuel capacity (standard)	108 gal (all usable)
Oil capacity	12 qt
Baggage capacity	190 lb (31 cu ft)
Basic price	\$72,627

Performance

Takeoff ground roll	737 ft
Takeoff over 50 ft	980 ft
Landing ground roll	763 ft
Landing over 50 ft	980 ft
Rate of Climb (sea level)	1,375 fpm
Maximum level speed	203 mph
Normal cruise speed (75% power, 7,500 ft)	191 mph
Economy cruise speed (50% power, 12,000 ft)	165 mph
Range at Normal cruise	1,295 sm
Range at economy cruise	1,609 sm
Service ceiling	21,500 ft
Stall speed (clean)	65 mph
Stall speed (gear and flaps down)	55 mph

had some trouble. Without an operating handbook, it was impossible to know whether we were using anything close to the recommended starting procedure, but we found that a system of cranking the engine, jockeying the fuel pump among its high-low-off positions, and working the mixture and throttle, would eventually get the engine running, albeit quite roughly at first.

Another quirk of this airplane showed up in flight: the left main wheel was reluctant to retract. By slowing the airplane and recycling the gear, it would come up on the second or third try, however.

The craft's cowl flap control seemed reversed of the norm; push the control in for open cowl flaps, pull it out to close them.

But enough of this. Get the airplane into the air where it's supposed to be, and the Navion Rangemaster begins to show it's stuff. Obviously there's something in this 30-year-old that makes people keep coming back to her, and its probably her good manners in the sky. The plane is stable, extremely stable, and you wonder why the manufacturer has decided to put so many thousands of dollars into an elaborate autopilot installation.

Controls are balanced and the Navion will turn on a dime, without need for excessive nose up force on the yoke. In summer's light chop over Mississippi, the Rangemaster seemed to cut a very straight line through the air. There was no bouncing a couple of hundred feet on either side of the selected altitude, no sashaying of the tail.

Sales literature on the Navion says it will scream along at 203 mph top speed, cruise at 191 mph at 7,500 feet with 75% power. I found N2558 to be less of a screamer and more of a yelper. With full throttle (24 inches mp) and 2,700

rpm (prop redline), the 160 mph indicated at 5,500 feet converted to 177 mph true. That reading was confirmed by repeated checks of the DME. Flying the same VOR radial both inbound and outbound, the DME averaged 155 knots, which converts to 178 mph.

At a lesser power setting, 22 inches mp and 2,400 rpm, the airspeed indicator showed 140, or a true 154 mph. Without any power charts or aircraft manual, it was impossible for me to know the power percentage at such a setting, though on a very similar engine installation those numbers compute to about 63% power.

In cruise, noise was relatively low, as was vibration, due partially to the three-bladed prop. Seating was comfortable, though I found my knees up against the lower edge of the panel—which was unpadded, sharp, aluminum. Lap belts in the plane were attached to the seat itself, rather than to the floor-boards. There were no shoulder belts installed in this Rangemaster.

Changes in configuration of the craft with power, gear and flaps, required almost inordinate amounts of re-trimming. Fortunately, there was an electric trim switch, for the manual trim wheel at the bottom center of the panel was impossibly tight.

Stalls were mild and wings stayed level. A clean stall came at 68 mph, while gear and flaps down stall registered at 57. Landing gear down speed is 130, while flap speed is 108. With such relatively low extension speeds, the craft took about 45 seconds to slow from 160 to 100 mph.

On landing, full flaps and power off will cause the Navion to drop like a rock. At 70 mph, there is very little speed left for flare. Better approaches were made with power, at 80 mph. Landing distances were short, however,

about 600 feet into a 5-knot headwind. Takeoff was a little longer, more like 900 feet from Olive Branch airport at 401 feet above sea level, with a ground temperature near 80 degrees F.

Climb rates of 1,200 fpm were registered after takeoff, diminishing to about 900 fpm at 4,000 feet at a climb speed of 100 mph.

Though the Rangemaster comes with five seats (the fifth is removable to offer more space in the baggage compartment), it is not even close to a five person airplane with full fuel. N2558T weighed 2,245 pounds empty. Add 648 pounds for full fuel, and arrive at 2,893 pounds, against the maximum gross weight of 3,315 pounds. Thus, you can distribute the remaining 422 pounds among two standard (170 pound) passengers and 82 pounds of baggage.

Banning, Calif. is headquarters of the American Navion Society. Navion (that's pronounced "Nay-vion," the society once decided) owners around the country, 1,250 of them, have banded together to assure a parts supply for their almost extinct birds.

S. Dan Brodie helped found the Navion Society 16 years ago, has flown 6,000 hours in them, and still owns one—and loves it. At one time during the mid-1960s he was president of the company that manufactured the craft, but sold out before losing his shirt. He thinks now that "Navion has died its last death," explaining that both the construction and design of the plane, as well as its speed relative to horsepower, are obsolete by today's standards.

"The airplanes out there will keep on flying for many years," said Brodie, who is president of Multitech International in Oakland, Calif. "There will still be beautiful Navions handled with tender loving care by idiotic owners, of which I am one." □