Pilot report - Piper Comanche

[Reprinted from Fliteguide / Imperial Aviation]

Piper was never quite the same after the Susquehanna River burst its banks and flooded their Lock Haven factory back in June 1972. It wasn't the first time either, but the 1972 floods caused huge damage and it was the last straw for Piper. The flood destroyed 100 new aeroplanes and irreparably damaged many of the company's manufacturing jigs including those used to make the nearly 8000 Comanches.

Some argue that the 1972 flood came at a fortuitous moment as it pushed Piper into replacing the Comanche with the Arrow which cost a lot less to produce. Indeed, when the Comanche prototype first flew in 1956 the company was going through a minor engineering revolution (at least for Piper). They were beginning to edge out tube and fabric construction for monocoque. The twin engined Apache of 1954 was the first effort at getting away from fabric fuselages though the aircraft retained its tubular steel airframe.

It took over eleven years for Piper to catch up with Beech who'd launched their V-tail Bonanza in 1947. By the time the first 180hp and 250hp Comanche's came off the line in 1958, the Bonanza was already the clear market leader and had a decade's worth of monocoque manufacturing experience tucked under its belt. Cessna were not far behind and they had test flown their first retractable 182 in 1957 later to become the 210. The Comanche was an expensive aeroplane to produce. A 250hp version cost US$24,500 in 1958 - US$2,000 more than a 1960 Cessna 210 and US$300 more than a J-35 Bonanza. Nevertheless, Piper made five variations of the Comanche line from the 135 knot 180hp model to the awesome 1964 400hp. In between, the company installed the 250hp engine and a normally aspirated and turbocharged 260.

Comanches were liked by their owners for their respectable cruise speeds, big cabins, useful range, kind handling and trouble-free Lycoming engines. The 260 model was introduced in 1965. The '65 model was identical to the 250 except in engine power and some Piper buffs consider it the best of the line. The 260 was the only four-seat carburetted Comanche and thus had an astonishing climb rate of 1600 feet per minute from sea level. In 1966 Piper stretched the fuselage slightly and added two more seats. In practice, the extra accommodation was nothing more than a couple of padded cushions placed in the back with legroom that allowed for nothing more than small children. The seats were placed in the luggage area, so if all six places were filled, no room remained for baggage. Piper also added an extra window each side. The '66 'B' model had its payload increased by 200 lbs to give a max up all weight of 3,100 lbs. The speed advantage over the w250 model was negligible and at the same weight the 260 model could manage an extra four knots.

In 1969 Piper launched the 'C' model - instantly recognized by its shark nose. The company had to extend the propellor forward to counter an aft C of G problem after raising the useful load to a handy 1,427 lbs. The last of the line was the turbocharged 260C which was considered the best of the lot - better even than the 400hp hotted-up Comanche that wowed Piper fans in 1964. The 260C turbo was often referred to as being 'turbo-normalised', a cute description which tried to explain the unusual installation of dual Rayjay turbochargers which came on line with the application of a separate 'throttle' mounted on the power quadrant. To operate the turbos pilots would have the extra throttle closed on takeoff and only opening it during the climb to maintain manifold pressure. The lever controlled the wastegates, closing them and at the same time directing more exhaust flow into the turbocharger. It wasn't an altogether happy arrangement as the process led to some power loss due to the inefficient induction system when not using the turbos. The turbochargers made a significant difference when flying over 12,000 feet. They had the added benefit of quietening the cabin although Lycoming had to beef up the engine to withstand the higher operating temperatures.

Comanches have always been good looking aeroplanes. One of the reasons production costs were so high is because of the pretty, tapered semi-laminar flow wing. Achieving a super-smooth surface in the fifties with traditional riveting methods was not easy and had to be carried out with supreme care. Comanche's thus rewarded their owners with pleasant stalling manners. The aircraft sits low on its undercarriage - a configuration that's led to much heated debate over its landing qualities. The Comanche has acquired a reputation for being difficult to pull of greasers. Indeed, those unfamiliar with the type will be frustrated by its tendency to float and then suddenly plop onto the runway with a bone-jarring thump. Every Comanche owner will have explored the landing qualities and come up with his or her favourite method. A universally accepted way of improving the landing (and takeoff) behavior is to pump up the main gear oleos and even bleed off the nose wheel strut slightly. This further reduces the Comanche's tendency to wheelbarrow during takeoff by placing the aircraft in more of a flying attitude during the ground run.

Comanches have always been praised for their roomy cabins. There's a single door on the right hand side of the fuselage which curves some way into the roof area to make getting in and out fairly easy. Second row passengers will enjoy the wide comfy seat with good legroom. Those right at the rear will have to suffer placing their knees close to their chests unless it's fairly young children occupying the last row. The rear area has a weight limit of 250 lbs which should in theory accommodate at least one adult and some luggage. A baggage door on the left hand side of the cabin behind the wing trailing edge means that while items can be stowed from the outside, occupants will have to clamber over the first row of seats.
The panel is classic sixties - roomy and wide. The primary flight instruments are placed in a typical 'T' layout with a centre stack of avionics and engine gauges to the right of the panel sharing space with the fuel and temperature indicators. Switches are placed along the lower left area and the fuses on the opposite side. The power quadrant is where it should be - in the middle. The Rayjay turbocharger extra throttle lies to the left of the primary throttle and has a specially designed 'stop' to prevent it being advanced further than the power lever. Suction and EGT instruments are placed below the flight instruments and the cowl flap lever is underneath the panel to the left of the centre pedestal. The undercarriage switch and flap control are either side of the quadrant.

Just as the Comanche has idiosyncratic ground handling, Lycoming engines have frustrated pilots with their fiddly start performance. Like all fuel injected Lycomings, the IO-540 is best started in the 'idle-cutoff' position. With the boost pump showing positive pressure via the flowmeter with the throttle opened a quarter of an inch and the mixture at full rich, the mixture is then fully retarded and only pushed back in again as the engine fires. Once started the engine idles with a lumpy resonance so typical of the bigger Lycomings although as it warms up things get a little smoother which is a fair indication that the engine is ready for power checks. The Comanche has a short wheelbase which can be felt with a hard 'pitchy' ride when taxiing.

At the holding point the engine is run up to 1500 rpm and the propellor cycled before increasing to 2200 rpm for the magneto and temps and pressure checks. With the fuel pump flicked to the on position and lined up on the runway the view over the nose is slightly restricted by the aeroplane's tail-low attitude and lengthy cowl.

Recognising the Comanche's ability to wheelbarrow, the handbook recommends a light back pressure on the control column during takeoff. Furthermore, at altitude, the book recommends the manifold pressure be set at 28.8 inches on takeoff, allowing for a maximum of 29 inches with the ram-air effect using the second throttle that controls the two Rayjays. The 260C has a maximum takeoff weight of 3200 lbs which with the tanks full to 60 gallons allows just under an impressive 1000 lbs of payload - or five adults and 96 lbs of baggage. The book claims a takeoff run of 2600 feet (795 metres) at gross with a further 700 feet to clear a 50 foot obstacle at a density altitude of 6000 feet on a 30 degree Celsius day.

For the flight test we were two up with about half tanks which weighed in at nearly 2414 lbs. At this weight the Comanche leapt off Wonderboom's main runway. Although these aircraft have a respectable field performance, like most other aircraft at gross weight they need a good distance to get airborne with Africa's hot and high conditions.

The aircraft is rotated at just over 60 knots and flies itself off shortly after. Best rate of climb speed is 97 knots. At gross weight a healthy climb rate in excess of 1000 feet per minute can be expected at a density altitude of 6000 feet. Maximum angle climb speed is 87 knots. The owner of the test aircraft, Doctor Jannie Tromp, has had an inflatable door seal fitted and whilst the Turbo 260C is the quietest of the Comanche series, the sound level was even lower, enabling normal conversation tones in the cruise.

At 7500 feet we set up the aeroplane for cruise, recording 140 knots at a 65% power setting, 23 inches of manifold pressure and 2300 rpm burning 12 gallons of fuel per hour. At this height, admittedly lower than many pilots of turbocharged aircraft will opt for, a manifold pressure of 27 inches, 2400 rpm brought the speed up to 161 knots for 15 gallons per hour. This Comanche is fitted with oxygen and a red light mounted prominently on the panel above the airspeed indicator. Again, this shows little imagination and whilst owners will rarely fly this aircraft to the point of stall, an aural system is far better and has been universally adopted by other aircraft manufacturers (including Piper nowadays). The stall break comes at 65 knots clean with the red light beginning to wink at 73 knots. With flap and gear down, the break is at 58 knots. There's virtually no tendency to drop a wing but considerable airframe buffet goes some way to make up for the lack of an aural stall warning system.

At the stall the Comanche behaves impeccably. Piper installed a visual warning system which alerted the pilot of an impending stall by a red light mounted prominently on the panel above the airspeed indicator. Again, this shows little imagination and whilst owners will rarely fly this aircraft to the point of stall, an aural system is far better and has been universally adopted by other aircraft manufacturers (including Piper nowadays). The stall break comes at 65 knots clean with the red light beginning to wink at 73 knots. With flap and gear down, the break is at 58 knots. There's virtually no tendency to drop a wing but considerable airframe buffet goes some way to make up for the lack of an aural stall warning system.

Returning to the field, the Comanche needs to be slowed to 130 knots before lowering the wheels and 110 knots for flaps. The gear is electrically operated via a cable that drives a worm gear. The system has proved remarkably reliable. However, in the event of a gear failure, speed has to be brought back to under 90 knots and the motor disengaged from the drive, whereupon the wheels drop free and lock down. It is impossible to raise the wheels once the emergency system has been activated and the aircraft has to be jacked up to restore the system to fully operational status again.

The Comanche pitches nose down as the gear is lowered - easily countered by a small turn of the trim handle. Furthermore, there's a

noticeable braking effect. Flap extension provokes even less trim change. Approach speed at gross weight and no flap is 92 knots, 85 with 15 degrees of flap and just under 80 with full flap. 85 knots and full flap is perhaps a happy combination and with a gentle flare the aircraft sits down nicely with little tendency to float.

Many lament the passing of the Piper Comanche and today the type remains a sought-after aircraft. The example tested here - V5-JRT is based in Windhoek and is in pristine condition. The Comanche produces few maintenance surprises but has had its fair share of Ads. The most serious is the requirement to inspect the main wing spar for cracks. The AD was issued following a wing separation tragedy after a pilot had pulled up doing a beat up over a friend's house in Canada. The AD called for the provision of a wing inspection panel so that the spar can be inspected every 100 hours. According to the FAA, no cracks have subsequently been found and it appears the AD has since been changed to a mandatory service bulletin. The inflatable door seal was introduced as an optional mod to prevent poor door sealing. Owners could also install an extra latch in the roof to alleviate this age-old Comanche problem.

Note: PlaneCheck often has some nice Piper Comanches for sale

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