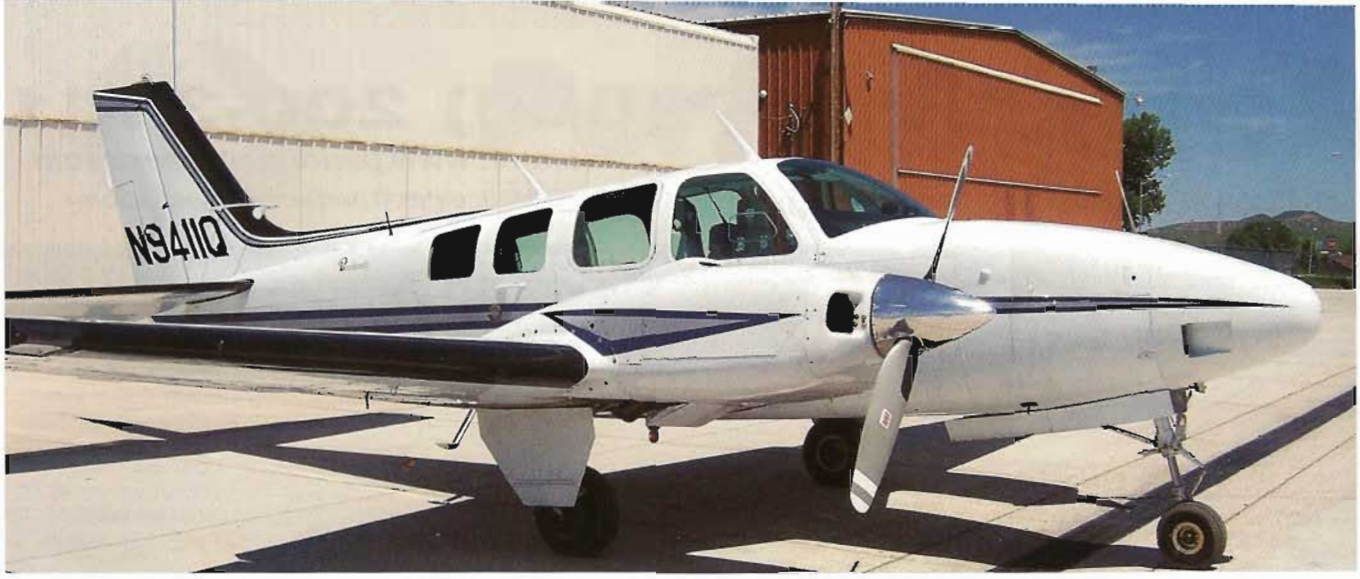


Economical Baron

by Tom Bush

I recently sold my 1993 turbonormalized A36 with tip tanks and TKS, and purchased a 1970 Baron 58 with I0-520C engines. (I had owned a B55 and a 58P models for about 1,600 hours of flying in the past.) I wanted more luggage room, greater useful load, and a second engine for a lot of over-water flying I plan to do throughout the Caribbean. It's also nice to have a second engine for flight over hostile terrain, such as for the 10-hour trip I just completed over the Manitoba wilderness to a remote fishing lodge with a sand/clay strip (3,100 feet) about 400 miles northwest of Winnipeg. I like to have room for four 200-pound guys and 60 pounds of gear each, those wonderful "barn doors" for easy loading, and still have useful load left for a good flying range (this 58 has 166 gallons capacity, and deice equipment). Of course, the price of older twins is difficult to pass up for the performance/value in today's depressed plane market.

The chart (right) displays an analysis comparing fuel burns and speeds of my "new" Baron 58 versus my "old" TN A36. Certainly, block to block fuel burns and speeds will vary based upon individual planes, engines, temperatures, and operators. The following numbers reflect my experience operating my Baron and my TN A36 for 300 hours, a plane I really enjoyed.

I flew my Baron from Sheridan, Wyoming, to Regina, Saskatchewan, and then on to Big Sand Lake Lodge, Manitoba. Not wanting to purchase a lot of $8.00 a gallon gas in Canada, I flew LOP at 162 KTAS at 10,000 feet at 17.8 gph, combined with a block to block fuel burn of 19 gph, on a three-hour flight (which is close to a Twin Comanche fuel burn and speed, but the 58 offers nose baggage, greater useful load, and considerable reserve power).

Other economical LOP power settings produce 170 KTAS at 20 gallons per hour total or 175 KTAS at 22.4 gallons combined, whereas flying at maximum cruise at 205 KTAS at 8,000 feet cost 31 gph.

Average block to block fuel burn when flying at 175 KTAS is 23.1 gph on a three-plus hour leg. If I fly at 162 average block to block ground speed (170

	KTAS	CRUISE GPH	BLOCK GS	BLOCK GPH
TN A36	200 @ 17000	18	162	20
B58	170 @ 10000	20	162	21
B58	175 @ 10000	22.4	167	23.1
B58	162 @ 10000	17.8	154	19
NA A36	160 @ 10000	12.5	148	14.5

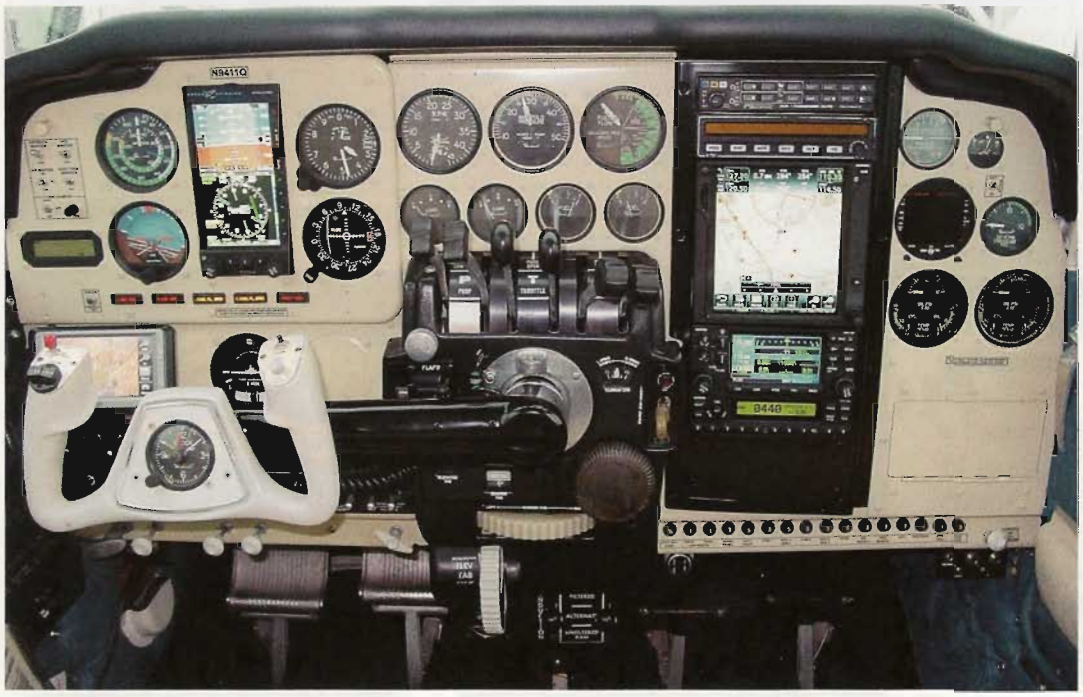
KTAS at 20 gph, the same average ground speed of my TN A36), the block to block fuel burns drops to 21 gph on a short 90-minute leg.

The turbonormalized A36 had a block to block burn of 20 gph with an average block to block ground speed of 162 knots – per the Garmin Trip Statistics page based upon about 48,000 nm – even though I cruised at 200 KTAS at 17,000 feet on about 18-19 gph (37 gph in climb... heavy plane with TKS and air conditioning). The Baron's average block to block ground speed is 167 knots (based upon about 45,000 nm at 175 KTAS at 22.4 gph) as shown on the Garmin 430. The Baron climbs much faster than the A36 so it gets to cruising speed much quicker. I believe that is the equalizing factor in these block to block trip statistics.

The Baron's average ground speed is five knots faster than the TN A36 when flown at 22.4 gph, and 175 KTAS with a block to block fuel burn of 23 gph, or just three gallons more per hour to be five knots faster (block to block) than the TN A36. An average block to block fuel burn of 21 gph yields the same TN A36 162 knot average ground speed on just one gph more in the Baron 58 – not bad for a twin. Shorter flight legs will affect these numbers, but my average flight leg is about two to three hours. While I have no specific experience operating a normally aspirated A36, a fellow pilot reports an average block to block ground speed of 148 knots (160+ KTAS on 12.5 gph LOP) and a block to block fuel burn of 14.5 gph, about 4.5 gallons per hour less than the Baron 58 when flown at 45% power and 162 KTAS.

I just paid my insurance and it was $2,500 less than the TN A36 with $1 million smooth liability, and almost identical cost per $100 for hull coverage for my A36. Of course, the A36 was valued at $400K versus the $110K for the Baron. The $2,500 premium savings buys over 400 gallons of gas, and I will use only about 200-300 more gallons per year flying the Baron at 170-175 KTAS. At 100 hours a year (and $6 a gallon), the additional fuel cost per year will be $1,200 - $1800, which is much less than the insurance premium savings.

Also, I no longer have to pay Jeppesen $1,600 a year for flight charts and a Nav Database for the Garmin 600 as I had with the TN A36. I get my geosync charts on my iPad for $150 a year for an additional savings of $1,350 annually, which I can put toward the higher price of the annual on a twin. I plan on assisting on the annual with my IA to help control the annual costs, so if nothing big breaks I may be able to fly the Baron for about the same price of the A36 (considering the above numbers).



I added an Aspen 1000 PFD, and GTN 750 (installed by Aerotronics of Billings, Montana). The plane already had a 430W and I sold its 530W; I added a flight director and yaw damper to the S-Tec 55, Garmin 510 Aera, "new" instrument panel/floating panel, new interior and touch up painting of engine nacelles, nose cone, etc. With all the improvements

I made to the Baron I have about $230,000 in my pocket after selling my 1993 TN A36. It's nice to have the "liquid" $230,000 versus having it in a depreciating airplane, now that airplane values are so low and will probably drop even lower. Even the venerable A36 prices have taken a big hit. Good rationalization, huh? Rationalization *is* my best skill as a pilot/owner.

Regarding operating a turbo versus normally aspirated twin in the Rocky Mountains: I flew my B55 with IO-470s for 850 hours in the mountains in and out of Aspen, Steamboat, Jackson Hole, Vail, and Gunnison, and I was usually light with only two on board. I had no problem holding 13,000 feet on one engine at standard temperatures (once I got up there on two engines of course). I would usually fly the Rockies at 16,000-17,000 feet so if I had an engine failure I could drift down to 13,000 feet to avoid the highest terrain. Of course, if an engine quits in the TN A36, you would drift down all the way to the surface.

When departing Vail or Aspen, etc., I would simply request to circle up to gain altitude. Out of those mountain areas I needed a decent ceiling to depart since the single-engine climb rate was only 275 fpm if I did everything perfectly, which isn't going to happen for a non-pro pilot. So for those few trips a year, a normally aspirated airplane works adequately in the Rocky Mountains if you select a proper route and altitude. A turbo would be nice but comes with a rather dramatic added expense. Single-engine out climb rate in the 1970 Baron 58 is 382 fpm at 5400 pounds but increases to 514 fpm at 5000 pounds and to 707 fpm at 4500 pounds. Single-engine service ceiling (able to climb at 50 fpm) is 7,150 feet at 5400 pounds and 13,000 feet at 4,500 pounds with an absolute single-engine ceiling of 13,950 at 4500 pounds. So I do not see a turbo as a "must have" for this situation. It is a good idea to fly light in the mountains.

I hope this helps fellow pilots justify operating their plane of choice!

Tom Bush is a commercial/instrument/multiengine pilot with 3600 TT including 1600 in Barons.