

The Alternative Line

by Joe Holzer for CNY-PCA Redline Report Copyright 2011 <http://www.holzerent.com>

PDK vs Manual – Why?! Porsche AG – This is an open letter to YOU!

The most recent issues of Panorama, which I hope you dear readers recognize as the Porsche Club National Magazine, published monthly, had a sort of “survey” of members’ thoughts on the preference of PDK/Tiptronic vs Manual gearboxes as used in Porsches. Many of you may not realize that manual gearboxes are not even available in many of the US spec cars; Cayenne and Panamera come to mind. But according to Porsche’s published statistics, the PDK is now produced in more than half of the 911, Cayman and Boxster models sold here. Only the “specials” and semi-race cars are sold with manual gearboxes exclusively. So, if you are a dyed in the wool manual fanatic, your choice in used Porsches will require you either to have the bucks for a GT3, or to look at a lot more cars than you used to.

To say that Betty Jo Turner’s responders were “avid” enthusiasts for their particular position would be the understatement of the century. And one would think that the comments would have led Porsche to find a way to offer the manuals at least as no-cost options on the Cayenne and Panamera models, if for no other reason than to assure their secondary market customers would not be driven to other brands. After all, few Porsche owners who become fanatics like me (actually, VERY few enthusiasts even come CLOSE to becoming a fanatic on the order of ME, but I digress as usual ;-)) did so by purchasing only brand new Porsches. Some of us NEVER buy a new one, even as members like me have certainly SOLD a whole lot of them to others with better equipped wallets than mine.

Those of you dear readers who have followed my birdcage liners know that I have come to conclude that the Tiptronic, and its successor PDK, are the better alternative for the vast majority of purposes, which is clearly based on the fact that I use my Porsche for most of those purposes on any given day. But if you have read back to some of my earlier works (this is my eightieth official article, to say nothing of my various letters, etc.), you will recall that I started on a 915 type 5-speed manual in my ’77 Targa, which has had its powertrain upgraded to an ’88 Motronic 3.2, still with the 915, and now owned by my daughter. For what it is worth, she PREFERS a manual, even driving in the urban environs of Wellesley/Boston, San Francisco, Cleveland, DC, and now Baltimore. It must be tough to still have legs with strength and stamina ;-)

But my purpose here is not to blow my horn nor espouse my rationale for preferring the safety and simplicity, to say nothing of the comfort, in the “automatic” gearbox approach. And it is certainly not to try to convince you dear readers that the tenth of a second saved on every shift, perhaps, would even be noticeable in the real world OTHER than on a track, for the PDK vs manual shifting. There are very few circumstances indeed where it would really matter at all anyway, and the tradeoff in trying to get close with a pure manual would be to simply shorten the life of synchros.

My purpose, instead, is to ask why a company well known for automotive engineering excellence is even having the discussion? I cannot fathom any reason why EVERY Porsche with a PDK does not have a third “clutch” pedal which simply dumps hydraulic pressure from the wet clutches (both even and odd gears equally) via a tapered valve, thereby allowing clutch takeup to be operated just like a normal manual gearbox with a sequential shifter, leaving everything else on the PDK pretty much as-is. Porsche has had a hydraulic clutch actuation since at least the G50 transmission, so it’s not like it would be a big deal to achieve. It should also take no genius to realize that a little innovative thinking could allow a “gate plate” which would be swappable (and if REALLY innovative, simply selectable ;-)) at the shifter to change from a sequential with PRND-M+/- gates to a typical “H” pattern with a lockout of the Park position via the shifter button, to allow anyone to select THEIR preferred driving style AT THAT GIVEN MOMENT. Electronics today would make that hardly even an effort, but the effort to provide that user versatility with the PDK would be the most unique user interface in the automotive world today.

I can imagine myself as with my original decision to buy my 993 with the Tiptronic; having just spent three weeks with my Targa in Chicago gridlock before I swapped it for my Ford Aerostar van, since it was the only automatic I owned. And the seller, a used car dealer who had not realized he had a Tip when he bought it at auction, and so was desperate to “get rid of it” (1999) because he thought no Porsche buyer would contemplate an “automatic” in a 911. He had not done much homework, and certainly not so much as me. Having owned it I would never NOT own one, UNLESS I could own a PDK.

Why the PDK? Because it has all the advantages of an automatic, with all the efficiency of a manual. So unlike the Tip, which is a true automatic with merely manually selectable gears, thereby having a torque converter which has to “spool up” so is lousy for autocross, the PDK is like a very fast shifting manual gearbox with direct drive clutch, which transmits torque at full value and immediacy. But it can be left to do all the tedious shifting if the driver wishes, as in Chicago, or other urban setting. Or the track ;-)

Making the PDK act like a real manual would require little more than to de-couple the wet clutch disk sets which are hydraulically loaded to engage with the flywheel in normal operation. If the clutch pedal opened a dump valve on the pressure side of each of the inner and outer disk sets simultaneously, and the electronics was set to allow manual selection of the gear, even by electronics (no different than the throttle plate is “drive by wire” instead of direct linkage), then the proper disk set would be pressurized to grab like a normal clutch plate by the release of that clutch pedal, and the pressure would regulate by means of the dump valve just as any hydraulic clutch does on any manual gearbox.

Real creativity could make a stacked “gate” plate system in the console which would limit shifter motions based on the plate selected. “Normal” would be a centerline fore-aft gate PRND with a manual gate to one side allowing for sequential shifting through the forward gears. “H” pattern would include those physical gates, but open a total of four fore-aft slots with a crossing “neutral plane”, and have Reverse and First gears in one gate plane on the far left, with “Park” selectable above Reverse by pressing the shifter lock button while in reverse (look at the typical M-B automatic shift gate and you can see that each shift position requires an active “step” motion of the shifter, the equivalent of which would be accomplished by the shift lock button – ie it could not be pressed to the “Park” position until it was in the Reverse position, as it would have to be pressed far enough to get past its lockout “cliff”).

Ideally, the plate change system could be changed only with the key (or some other lockout so it could not change “by accident” while driving). But there would only need to be two plate positions, and the PRND one would block the other slots except the sequential step to the side. The advanced manual override introduced with the Turbo Tip S, which allowed manual shifting at the steering wheel even in the PRND gate, could still be used, except that it would not function if the “H” pattern was selected – only a manual movement of the shifter would allow a gear change. But that could still take advantage of the PDK computer safety to allow an “anticipated” downshift if doing so immediately would over-rev the engine. And in any case, the plate system would consist of three levels of “plate”; the upper “H” pattern, the center “slot cover plate” which would illuminate the shifter indicators in the upper plate and block the unused “H” pattern slots, and the simple flexible dust cover beneath them both which would slide under all the gates as the shifter went through its entire motion repertoire.

With that relatively simple modification to the PDK system, any Porsche could be user-selectable as a fully manual car with the same 7 speed gear set as in the full feature PDK, with far less hassles for certification by USDOT and emissions, at the added cost and weight of a clutch pedal and valve set assembly. And that would not weigh so much as to not make the PDK with that setup a great option on the GT3 RS even. In fact, the ONLY possible downside I can see to the whole idea is that there might be a few less cars sold as “His” vs “Hers”. So just think what Porsche AG could do for marital bliss ;-)

Note: Copy sent to Betty Jo Turner in the hope that she would pass it along to someone at Porsche AG who might be willing to consider it for real. After all, there IS a reason they call me the Idea Man (along with some other, less friendly, things ;-)) I might never be able to afford one, but it would be nice to know an idea of mine was eventually used by Porsche. And I would be amazed if Porsche decided to try it and VW did not think about using it across their product range, especially for Europe and China. Those volumes would go a long way to reduce the current premium for the PDK vs a manual gearbox.

