

Audi's top design is a functional flop

by Rüdiger Rumpf

The Audi TT sports car, in production in Hungary for a few months now, has rapidly developed into a cult-mobile with a large following, and in some places its enthusiasts are even organized into fan clubs. The bully-aggressive design hit the taste of the times right on target. But, apparently, design was more important than the attention given to how this vehicle functions. The defects are now undeniable. Reports are accumulating about high-speed and deadly accidents, and photographs of crashed cars are circulating.

Various automobile magazines tested the first Audi TTs that came off the assembly line over the course of last year, and their testers were highly critical of the handling of the vehicle at high speeds. Since Germany's Audi is one of the world's most renowned automobile producers, and the company has a quite capable testing department for the suspension system, the defects can hardly have escaped the notice of the testing department, and the board of directors along with them. The only permissible conclusion is that the wretched performance may not have been designed into the vehicle deliberately, but it was certainly accepted.

The instabilities of the vehicle become apparent in its "nervous" behavior at high speeds, when the rear end tends to fly to the outside of curves. If a shift of the center of gravity is added to the inherent instability, e.g., if the driver takes his foot off the accelerator, the rear end swerves so rapidly that it would be appropriate to say it breaks away. The average driver, who is not prepared for this pernicious behavior by his vehicle, will generally be in no position to bring the car back on course by counter-steering.

The chairman of Audi's board of directors, Paefgen, is correct when he observes that these instabilities become evident only at speeds at which the normal driver will seldom drive, and we can also say that the Audi TT manifests "behavior typical of a sports car." More accurately, we would have to say that this sort of engineering is something an auto manufacturer could get away with 30 years ago, but not today. It ought to dawn on even the chairman of Audi, that many customers may wish to exploit the full performance capabilities of a car now and then—especially a sports car. If the suspension system is not up to par, or if the customers cannot be trusted to control the machine, then the top speed has to be curtailed electronically, which was necessary for the Mercedes-Benz "Smart," another inherently unsafe vehicle.

It is all the more astounding that the Audi board of directors is so oblivious to these defects, in view of the disaster just experienced at Mercedes-Benz with their A-Class and the "Smart" car, both of which were returned to the testing departments on account of severe defects in the suspension systems. Even criticism by former Audi production-tester and world champion race car driver Walter Rühr, failed to induce the Audi board to reconsider its position; instead, it unleashed accusations of corruption against the best-qualified driver of recent decades (since he now works for a different company). It was only after the newspapers reported on the debacle of the Audi TT, and Audi's reputation was already in the basement, that the board conceded that it would revise its arrogant denunciations of the driving skills of its customers. Audi did finally admit to having made mistakes—but less because they really thought they had made mistakes, than for fear of "hurting sales."

What is the TT's problem?

The defects of the TT's suspension system have little to do with the suspension itself. Rather, the reasons lie perversely in the sales pitch, and in its "design," i.e., the shape of the body. For 30 years, it has been known that auto bodies whose rear ends slope downward, have the same effect as the rearward slope of an airplane wing. It generates an upward lift—which is most undesirable in a vehicle which is not intended to fly—since the downward slope of the wing, or the body of a car, as the case may be, generates lower pressure. Some 30 years ago, an inventive Texan came up with an idea to overcome this effect: He equipped his race car with inverted wings, so that the upward slope at the rear generated strong downward pressure. This permitted the vehicle to develop greater stability with increasing speed, which also allowed the car to take curves at higher speeds. These devices were ridiculed at first, but they are now known as "spoilers," used on many vehicles, and modern auto racing would be inconceivable without them. The devices even managed to turn a notoriously dangerous rear-end skidder, the Porsche 911, into a safe sports car.

The Audi TT, with its rounded rear end—all for the sake of "design"—generates a very strong lift, which would not be a problem were it only used as a "boulevard sports car." Or, with a less powerful engine, this vehicle would also not be a danger to anyone. But, with 180 horsepower, in combination with front-wheel drive—and even 225 HP in the all-wheel-drive model—the vehicle is easily catapulted into exceedingly high velocity, where the lift-effect at the rear end leads to extreme instabilities.

On top of that, the suspension system is engineered with such a high yaw, that it gives the impression that the vehicle hugs curves with easy handling—or, as the advertising says, "Driving is pure fun." But combined with the lift-force applied to the rear end, a conflict arises: The lighter rear axle cannot develop sufficient lateral traction, and the rear end

swings a wider arc around the curves than the front end, and thereby starts to overtake the front end. The vehicle spins off the road.

As a rule, such a spin occurs not simply because of excessive speed, but because the driver inadvertently does something to cause it. Once the driver realizes that the car is moving too fast, and is beginning to behave “nervously,” he does the normally correct thing: He eases up on the gas pedal. But, this braking effect adds pressure to the front axle and lightens the pressure even more on the rear axle, causing the vehicle to move even faster into the curve, and to then turn on its axis. These effects from shifting the center of gravity are greatly feared in front-wheel-drive vehicles, which have a pronounced tendency for these reactions, and all manufacturers, including Audi, have spent a great deal of effort and money over the past years to eliminate them, and thus to correct the principal safety defect in front-wheel-drive vehicles. Apparently, when it came to the Audi TT, Audi did not think it necessary to take such “minor” details into consideration, particularly since they might interfere with the “pure fun of driving.”

Safety advantage turns into its opposite

Once Audi was reborn as part of Volkswagen, the decision was taken to settle for front-wheel-drive vehicles as the only sure way to corporate bliss. That worked rather well for

awhile, until Audi began to equip its cars with very powerful engines, forcing them to adopt alternatives to front-wheel drive. The new engines were so powerful that, because the center of gravity shifts during acceleration, the opposite of what we described above occurs, because acceleration lightens the weight on the front axle, causing the wheels to spin, unable to transfer their drive-power to the road.

For Audi, the creator/prophet of front-wheel drive, a switch to rear-wheel-drive vehicles was considered out of the question. The only option was all-wheel-drive vehicles. By now, Audi has a great deal of experience in making all-wheel-drive vehicles, and it pushes this technology as the only alternative to front-wheel drive for high-performance vehicles. Apart from the additional weight involved and the perfected differential technology, which provide for improvements in transferring the power of the engine to the road, there are hardly any objections to this option. Many experts think it is superfluous, however, because all-wheel-drive vehicles can only really demonstrate their capabilities on loose terrain, such as in rally-sport driving.

The TT is not alone

In the case of the Audi TT, with its problems in driving dynamics, all-wheel drive only makes everything worse. In addition to the lift effect applied to the rear end, there is a braking effect on the rear axle when the center of gravity shifts, i.e., when the driver eases up on the gas pedal: That means that the braking effect of the engine can cause the rear wheels to lock, for example, on slippery pavement; that makes the skidding and breakaway of the rear end even more abrupt, and far more precarious and unmanageable than in front-wheel-drive vehicles. That is why, as everyone knows, the driver should depress the clutch or shift into neutral when the vehicle goes into a skid on snow. A locked wheel cannot transfer power to the road, nor can it brake, nor can it develop lateral traction. All-wheel drive becomes a problem not only for the TT, but also for the “sports version” of the small Audi A3, called the S3, which is equipped with “only” 210 HP and all-wheel drive. The sports version is less dangerous than the TT, because its different body shape has less lift on the rear.

Although some trade journals have compared these hazardous reactions of the all-wheel-drive versions of the TT and the S3 with the front-wheel-drive models, and criticized the all-wheel models, the Audi directors would presumably rather swallow their own tongues than admit that their favorite panacea for all suspension problems, permanent all-wheel drive, could be the source of the described problems.

Shareholders' profits over safety

The real problem does not lie in the minor technical defects, all of which have established, tested solutions, but rather in the thinking among the board of directors, which, aside from its fixation on all-wheel drive—an argument purely to boost sales and which has nothing to do with safety—is geared

LAROCHE ON THE NEW BRETTON WOODS

“The present fatally ill global financial and monetary system must be radically reorganized.

It can not be reformed, it must be reorganized.

This must be done in the manner of a reorganization in bankruptcy, conducted under the authority not of international institutions, but of sovereign governments.”

A 90-minute videotape with excerpts from a speech by Lyndon H. LaRouche, Jr. given on March 18, 1998.

\$35 postpaid
Order number
EIE 98-002

EIRNewsService
P.O. Box 17390,
Washington, D.C.
20041-0390

To order, call
1-888-EIR-3258
(toll-free).

We accept Visa or MasterCard.

to the highest possible earnings. The issue is “shareholder value,” and nothing but that. The original specifications for the TT were aimed at a sales pitch about the “design,” and that goal was not to be sacrificed to any technical requirements, such as using a spoiler to reduce the lift effect at the rear end. The solution adopted by other manufacturers, to have a spoiler operate hydraulically above certain speeds, was not built in “for reasons of cost.” Here is a “lifestyle trophy” — for anyone vain enough to scrape together roughly \$38,000 — replete with all sorts of optical bells and whistles; it is fully certified to be road-capable, yet it can’t keep itself on the road, because of its aerodynamic defect. The proud owner of this piece of junk can nail the standard-equipment light-metal wheels to his garage walls, presuming that he survives any crash.

The objection that the directors did not fully realize the need for a correction, does not hold water. The board did agree, after all, to mount an extra 15 kilograms in the rear, although that dampened the weight-performance ratio: The effect is about what a small spoiler would have. It is true that the upward lift on the rear axle of the TT is about 58 kg at a speed of 200 kmh, and only 36 kg in a similarly powered Porsche Boxter. But it is pure quackery to think that the upward lift can be overcome by adding weight, because the upward lift remains 58 kg, compared to a rear axle weight of 665 kg instead of 650 kg, which is a negligible difference. But, because this weight is mounted far aft of the rear axle, it does indeed have an effect, namely, it creates a leverage, such

that the car spins *considerably faster* on its axis when the rear end does break away!

The third alternative to tame the TT, the electronic stability program or “ESP,” which was the salvation of the Mercedes Benz A-Class, is also not supposed to be built in, so that the pure, uncorrupted sports character of the vehicle not be marred. This, too, is nonsense: The only real issue was to save money. The ESP adds nothing to the “design,” goes the directors’ reasoning, and so it is just a waste of money.

Public pressure forces change

Since the analyses of severe TT accidents led to no essential changes, a wave of public disgust against the Audi directors has poured out, much like that against Mercedes a year ago, and, there has been a sharp plunge in sales. Suddenly, everything previously scoffed at and rejected by Audi’s board of directors, because it would hamper the “pure fun of driving,” has become possible after all. The Audi board announced in late October that the new Audi TT will be sold, beginning in December, with a more finely tuned suspension system, a spoiler, and an electronic stabilization program. In existing models, changes can be made to the suspension — new springs, shock-absorbers, and stabilizers — while the spoiler has to be mounted as a retrofit. But Audi will only install the ESP for buyers who insist on altering their purchase contract. Presumably, the Audi board will want to avoid another round of bad press by not putting up resistance on that point.

Is dioxin scandal agriculture’s future?

Deregulation, battle for market shares, and constantly growing pressure on prices is a mixture that puts lives directly at risk. One striking example is the so-called dioxin scandal, which erupted in Belgium in early summer and spread into all neighboring European countries. Feed companies had mixed all kinds of sewage into animal feed, to become “more competitive” on the market. Used oil (Altoel), sewage sludge, and even human excrement were added in and sold as high-quality feed to farmers, who gave it to their hogs, chicken, and cattle. Only after farmers alerted the veterinary services that entire flocks of chickens had stopped laying eggs and soon after had died, were these unbelievable practices slowly brought out into the open. It took the Belgium government several months to take action against these feed producers, while the practice continued. It was also recently revealed that French feed producers were using the very same practices.

Farmers may wonder why some feed companies offer cheaper feed than others, but they have no choice: The prices that they get for their eggs, milk, and meat are so low that they are desperate to lower the costs of production. As a consequence of this policy, the health of animals and of the people who eat the products of such animals, are consciously being put at risk.

At the height of the dioxin scandal, the Belgian government ordered all Belgian meat and meat products, eggs, and all products that contained Belgian eggs to be removed from the stores and destroyed. For some weeks, in the Belgian capital of Brussels, where the European Union has its headquarters, there were scenes like those in the former Soviet Union: customers were staring at empty shelves, and consumer prices for food were soaring.

Such breakdowns will occur again, because liberal economics leads to such incidents. The problem lies in the policy. Soon, a similar scandal, but of bigger proportions, will strike again, or, these wonderful liberal policies will have driven so many farmers into bankruptcy that food will be scarce. You must decide: Either you eat contaminated food or go hungry, or organize to dump these liberal policies now. —*Rosa Tennenbaum*