



CLBCOM 108

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Squire SS-100 Registry

SQUIRE SS-100 FRONT SUSPENSION AND BRAKES

remains in the news and will continue to do so for some time. Every time we take a Squire front end apart we find some new thing that needs altering and/or complete modification. Some of the things we're working on are very time consuming and there are no quick answers. We'll keep you posted as things develop but here's where we're at, at the moment:

THE TORSION BAR SUSPENSION

that was installed on our cars in Italy were modified Alfa-Romeo "Alfetta" bars, ground down to fit front and rear anchors designed by Frank Reisner of Intermeccanica. While the suspension design is adequate, the bars were never strong enough to support the heavy Ford drive train and resulted in what Member Linda Ballard describes as a "bone jarring experience." We now have the correct bars as built by Gary Schroeder in California but the anchoring hardware has to be modified to fit the accurately made bar ends. I've just spent a long weekend in New Mexico with member Sid Weaver and a hundred mile ride in his newly restored #42 with the new bars installed and working properly. I can only report the ride and improved performance as astounding. It was hard to believe I was in a Squire SS-100 on a bumpy road. Member Ed Spielman has a few words to say on this subject and it's included with this letter. We will continue to work on the anchoring hardware and when we have something adequate I'll update this subject. I can hardly wait to get my Squire back on the road so be assured we're working on it.

THE FRONT BRAKES

that have always pulled to the right are also on the modification list. There has always been a suspicion that the wrong left front backing plate that came on all our cars is the culprit so I've picked up the correct plate from a 1970 Mercury Cougar and I'll soon install it. Sid Weaver has been working on the problem from another angle and we'll report that next issue with some additional comments from Ed Spielman on his new disc brakes. More next issue.

HTTP://WWW.SQUIRESS100.ORG/

Feed that into your computer browser and you'll find the neat new web site designed, installed and maintained by members Chuck & JD Blethen at no cost to our Registry. (It saves to have friends!)

AND ALWAYS REMEMBER

Never cut your own hair after three Martinis!

Art Hall

SQUIRE SUSPENSION

'Adventures With Torsion Bars'

by *Ed Spielman*

As stated in a previous newsletter, one of the real joys of owning a Squire is that once it's updated or fixed ... it's done. These cars are equipped with bulletproof running gear, so reliability is not an issue. (This, unlike vintage European sportscars that are *inherently* unreliable due to such horrors as Lucas electrics and eccentric engineering. In my Universe, such pig iron can never be 'fixed' or made reliable.)

Still, despite proven six cylinder, seven main bearing reliability...the Squire's suspension and braking are quite another matter. For the longest time, I've had the goal of bringing my Squire's suspension, handling and brakes up to the quality of the running gear. It is hardly a secret that, before attention to details, the Squires have a 'bucket o' bolts' ride. Thankfully, there are remedies and these are well worth doing.

It is understandable that some of our members drive their cars without front shocks and even resort to such desperate measures as deflating tire pressures in the quest for a softer ride. (Dental work costs money and who wants to have their fillings shaken out?)

One thing that *is* a mystery is why the cars were constructed with *the front shackle of the rear leaf springs butted against the frame*. As built, the leaf springs can hardly flex... a key reason for the buckboard ride.

The simple fix here is to re-arc the leaf springs to get clearance from the frame or...

To drop that front shackle by welding in a new shackle mount below the frame and drop the spring a bit so that it can flex and do its job. (Here, one must be careful...this treatment raises the rear end a bit. *This may also move the drive shaft position and this must be checked for safety.*) By whatever device, the rear leaf spring must be moved off the frame for it to 'spring'. This is a one time fix without which your Squire cannot ride properly.

With the leaf springs freed of contact against the frame and a decent set of shocks, the change is remarkable.

Front Suspension

The Squire's front suspension has its own quirks. Our cars utilize modified torsion bars from the Alfa Romeo 'Alfetta'. (The front end ride of my #32 has never worked as well as was intended when designed. I'm not alone in this dissatisfaction. That's why some of our members have even substituted Mustang II front ends with 'coil overs' instead of torsion bars).

Yet, in theory, the torsion bar system is an excellent one and has been used forever on everything from Packards to pickups. *So, why does the front end of the Squire have such a harsh ride?*

According to 'Art the Prez' (and I concur) the 'Alfetta' bars were too light for our car. The Squire has a lot of its weight distribution on the front end and it appears that the 'Alfetta' bars were too light for the load. (If that's not enough, torsion bars have a service life. After nearly thirty years, most of our's are just plumb worn out.)

My #32 showed this very obviously. The torsion bars needed to be replaced.

Upon reflection, it makes little sense to replace lousy Alfetta torsion bars with another set of lousy Alfetta torsion bars. *What to do?*

Art was studious and industrious enough to research the problem and...bingo! New torsion bars via Gary Shroeder & Shroeder Enterprises in Burbank, California.

In April, before departing for our fourth annual 'Spring Thing' at Sorita and Vern Jensen's hacienda in Arizona, I stopped in to Shroeder's to pick up two sets of the new torsion bars. Shroeder's is literally 'Torsion Bars 'R Us'. They manufacture an array of them and Gary Shroeder knows his stuff. He showed me the fine points of the new replacement units. He noted that not only were the new ones made of superior materials, but that the machining of the ends was now perfectly square. (How novel!) He guaranteed that they would last a lot longer than the old ones and with better performance.

In Laughlin, with some good natured kibbitzing from the sidelines, Sid Weaver and Paul Helmick were kind enough to replace my torsion bars (in an improvised pit area atop the roof of the Ramada Express parking garage).

After that, Mark Offenbergh and I did a test drive. Shroeder was right. For the first time in twenty-five years, my #32 had 'torsion bar glide'.

But, as with any improvement of the breed, 'R&D is not for free'. After our fabulous weekend at the Jensen's, Mark and I were cruising back to L.A. through Needles, California when... 'Kapow'. One of the brackets holding the front of the torsion bar let go.

We now 'Dissolve the Scene' to Art Stahl. He had just replaced his torsion bars and lowered the car off the jack so that the suspension was under load, when... 'Kapow'. His rear brackets self destructed.

(The ends of the old modified 'Alfetta' torsion bars in the Squire were machined but not perfectly square. The ends of the new Shroeder torsion bars ends *are*. Upon examination by Terry Becker, he concluded: "The old bars had mounting flats (square sides) around .700 wide. The new bars are made of .875 round bar and have flats which measure only .600 wide. This means there is no metal to metal contact in the corners, which has a tremendous effect on holding the bar during the twisting torque of the bar under load. The new bars actually exert pressure to the weak center of the brackets rather than at the corners. Because of this new design, the fit is now much more critical than with the old bars. So, while I made your new brackets stronger, it was also necessary to shim the bar fit to remove as much side play as possible. I have done this and am confident that you will not experience another failure."

Simply put, the ends of the torsion bars can have no 'wobble room'. Sid Weaver also used 'shims' to create a tighter fit, preventing play. His brackets are holding.

So,...problem solved. After a road test of 60 miles, Terry reports that "the ride is like no other Squire I've ever driven."

Thanks are due to the engineering and constructing skills of Mssrs. Terry Becker, Art 'The Prez' Stahl and his friend, John Triniskie and Sid Weaver (who had enough good sense to fit 'shims' in the first place) and Paul Helmick. The good news is that with this 'Squire Research and Development Team' on the job... and 'The Mystery of the Exploding Brackets' about solved, ...other club members can soon fit their cars with *a new torsion bar set up that actually works.*

*Can you imagine a Squire with a front end that handles bumps?
Goodbye, bucket o' bolts...Hello, torsion bar glide!*

For those of you who want to get your Squire's torsion bar design working right, watch the Club Newsletter for details about parts and tech info.

Ed Spielman