Squarebird Frames – Is There a Difference?

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There is a common misconception about the 1958-1960 Thunderbird. For years I have heard that there was no difference in the frame between a hardtop and convertible and that Ford had simply left the roof off of the convertible model. This was Ford's first production unibody substructure and they didn't take any chances and went overboard with it's construction. The hardtop was built like it was carved out of granite. But the convertible model had a fair amount of body flex. If you were to look underneath at both models you wouldn't find any difference. But there is.

To find the difference between the two models you have to look inside the rocker panel box sections. These frame sections are made out of three pieces of 1/16" stamped sheet metal, spot welded together. Inside there is an inner brace of 1/16" sheet metal which acts as a vertical support between the top and the bottom of the box section. All '58s and '59s (both models) came with this inner support. This brace was also used in the '60 models until the spring of 1960 when it was discontinued in the hardtop model only.

The convertible models came with an additional brace made out of 1/8" steel (see illustration). It is shaped like the capital letter "L" turned upside down and is spot welded to the top inside part of the rocker panel box section. It runs the entire length of the rocker panel box section approximately 74" in length. It is odd that the 1949-1959 Ford Car Illustrations Catalog doesn't show this brace but it is listed in the Text Catalog. It is called a "Floor Side Outer Member Inner Reinforcement" and carries part numbers B8S 7610138-A and B8S 7610139-A.

There is another brace used on the convertible model. It is made out of 1/16" steel and is found on the bottom of the lower rocker panel box section. It also runs the entire length of the box section. I have tried to find a part number for this brace in the parts books, but I haven't found a listing. And whether or not this brace was used on all 3 years of the convertible model is not known. But it was used on the 1958 convertible.

It's possible for you to see either of these braces without cutting up your car. In the rear wheel well in front of the rear tire there is a round rubber plug about 1 1/2" in diameter. By removing this and using a flashlight (a "Bend-A-Light" works best) you can look inside of the rocker panel box section. This is a common rust area in the Squarebird and - even if you don't own a convertible - you should check out the inside of your frame sections here and make sure that all the drain holes are open and that you don't have a lot of

dirt, etc. to trap any moisture here. You should also realize that there is no paint or undercoating inside here and it will rust very easily if any moisture gets trapped inside. It's true that every Squarebird was dipped halfway up the body in a rust preventative solution, but the truth is this solution did little in the way of rust prevention.

So how much strength do these extra convertible braces add to the car? I've talked to several chassis people and have heard several different answers. It's a tough question to answer. To add strength to a chassis you need vertical support. The extra braces that Ford added to the Squarebird convertible offer little vertical support. So why did Ford do it that way? My guess is that the rocker panel box section had already been designed and in production when the convertible model came into existence. So they simply added the two additional braces to the already existing box sections, without having to completely redesign the frame just for the convertible models. 1/8" steel is quite thick (twice as thick as the rest of the rocker panel box section) and this brace did add some additional strength by virtue of the thickness of the steel alone. Anytime that you increase wall thickness you add strength. But still the convertible model is nowhere near as strong as the hardtop.

I know of people who have made a convertible from a hardtop by cutting off the roof: if you were to do this with a rust free Squarebird that had the inner vertical support brace you shouldn't have any problems. But I would suspect that if you were to use a rusty car or a late in the year 1960 model (one without the vertical brace) you would have a car that would start to sag within a short period of time. Especially if the car was driven and used.

I found it interesting how Ford was cutting costs in the construction of the car as it progressed. Not only did they use fewer welds on the 1960, but they also didn't dip the entire unibody as deep into the rust preventative solution as the 1958 models were. The difference between the two years is about 8 inches. I wonder how much money that saved Ford! After taking the undercoating off the inner fenders on both cars, I found where Ford had sprayed red primer on the bare steel on the '58s, but nothing on the '60s. The bean counters must have been hard at work!

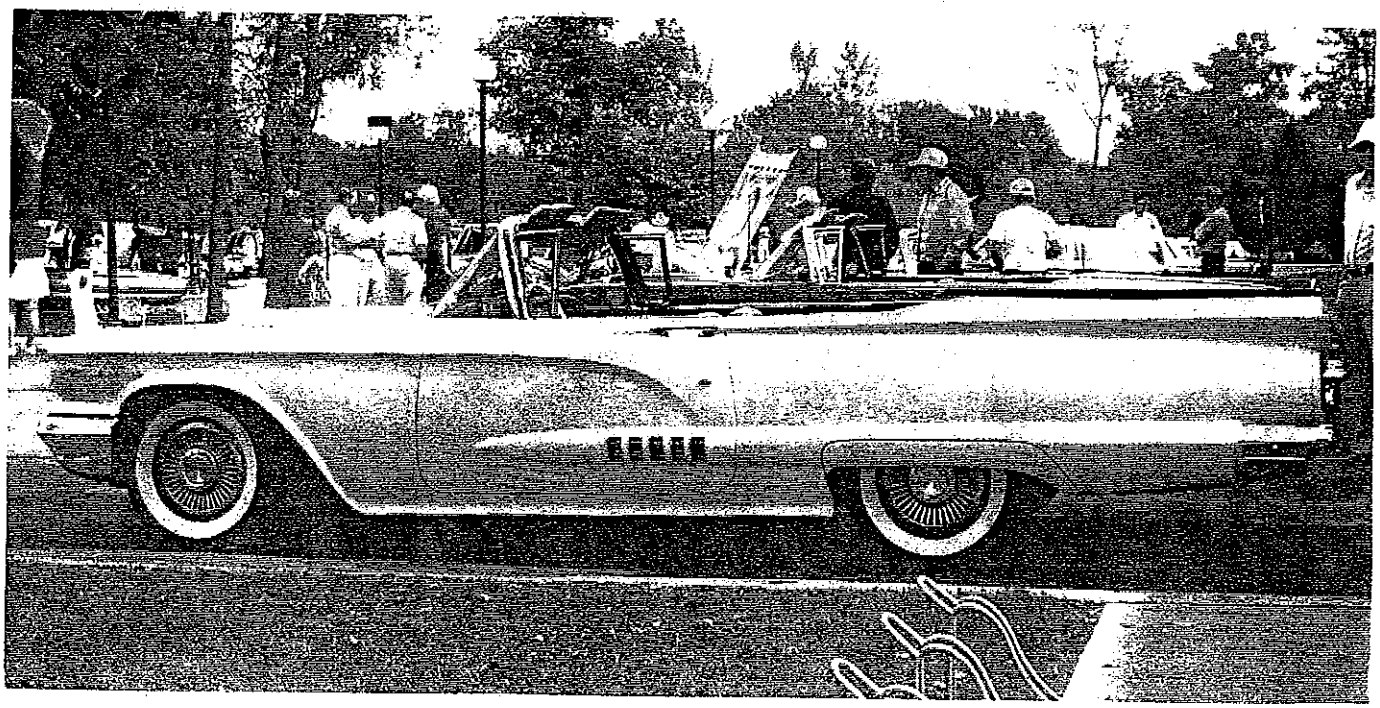
So how do you restore a rusty convertible? Just replacing the outer body sheet metal will not restore the frame back to original strength. The original Ford sheet metal needed to restore the frame has been obsolete since the early '60's and there are no reproduction sheet metal pieces available either. The stampings of these parts is quite complex and would be very expensive to reproduce. So you have the choice of trying to fabricate the sheet metal yourself or cut up a rust free hardtop and reinforce the inside of the rocker

panel box sections. The latter is what I chose to do.

I bought a rust free 1960 hardtop for the parts that I needed. I couldn't believe how strong the Squarebird is. After cutting all of the outer sheet metal off and removing both rocker panel box sections and the entire floor - the car still didn't collapse! You could walk right through the middle of it. I rolled it out of the garage three or four times to take pictures and it was amazing how strong the car still was. In fact, when I cut the rest of the car up, it didn't break in two until I had cut through the second "A" pillar. I can't think of another car in the world that would do the same: no wonder they did so well as demolition derby cars.

It's too bad that these rocker panel box sections aren't being reproduced. It would be a lot easier to restore a Squarebird if they were. I had a difficult time in deciding whether or nor to cut up a very nice hardtop. I love Squarebirds as much as anybody else and I hated to see another one gone as it can never be replaced. But it boiled down to the question as to how else could I restore my 1958 convertible? I really had no other choice as my rocker panel box sections were beyond repair and the only way for me to restore my convertible "right" was to use parts from a donor car.

You can practically build a vintage Mustang from a catalog with all the sheet metal that is available for them. But, this is not true for the Squarebird. But remember the next time someone tells you there is no difference between the hardtop and the convertible, there really is.



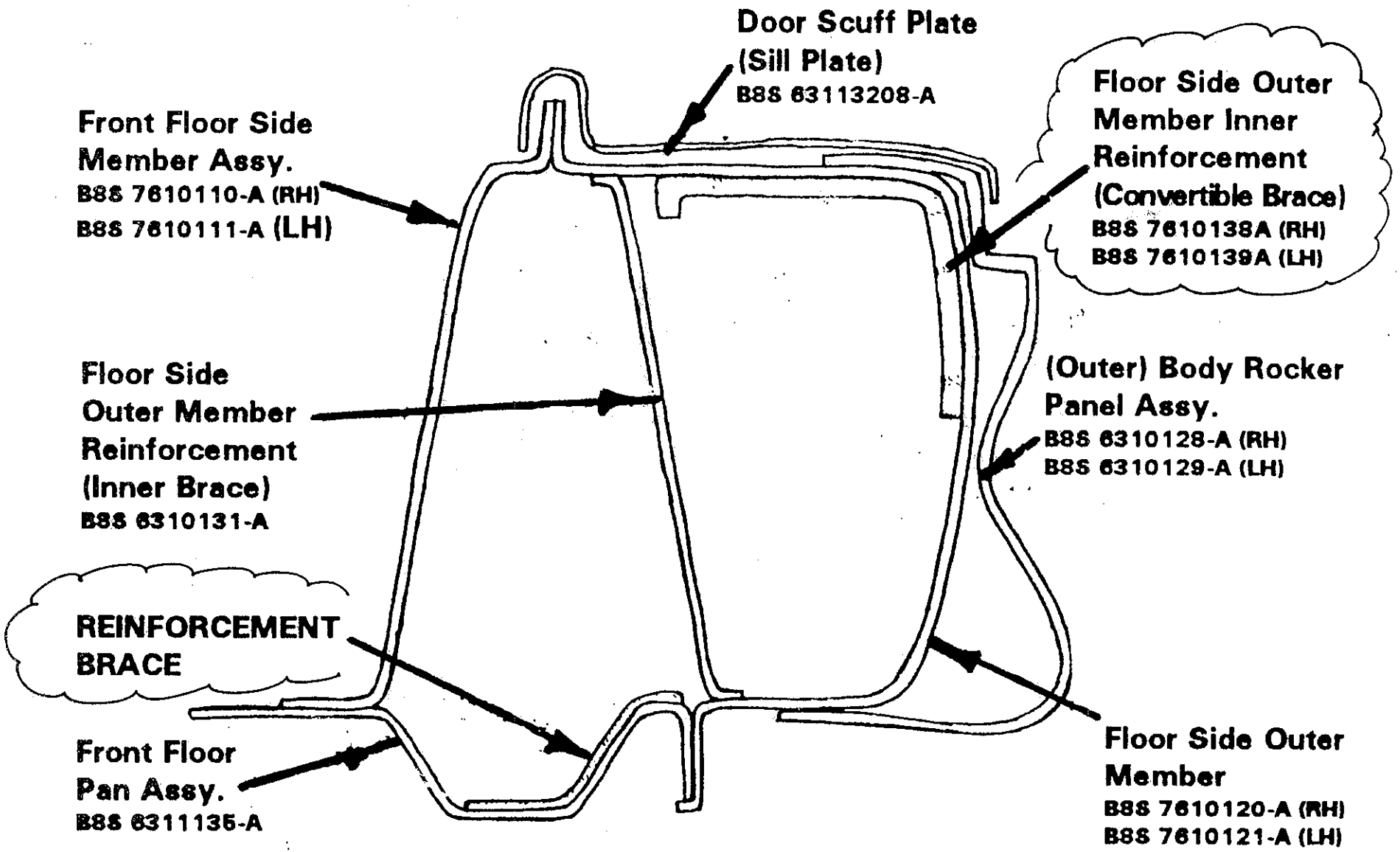


Figure 1 - Cross Section - 1958-60 Thunderbird Rocker Panel Box Section