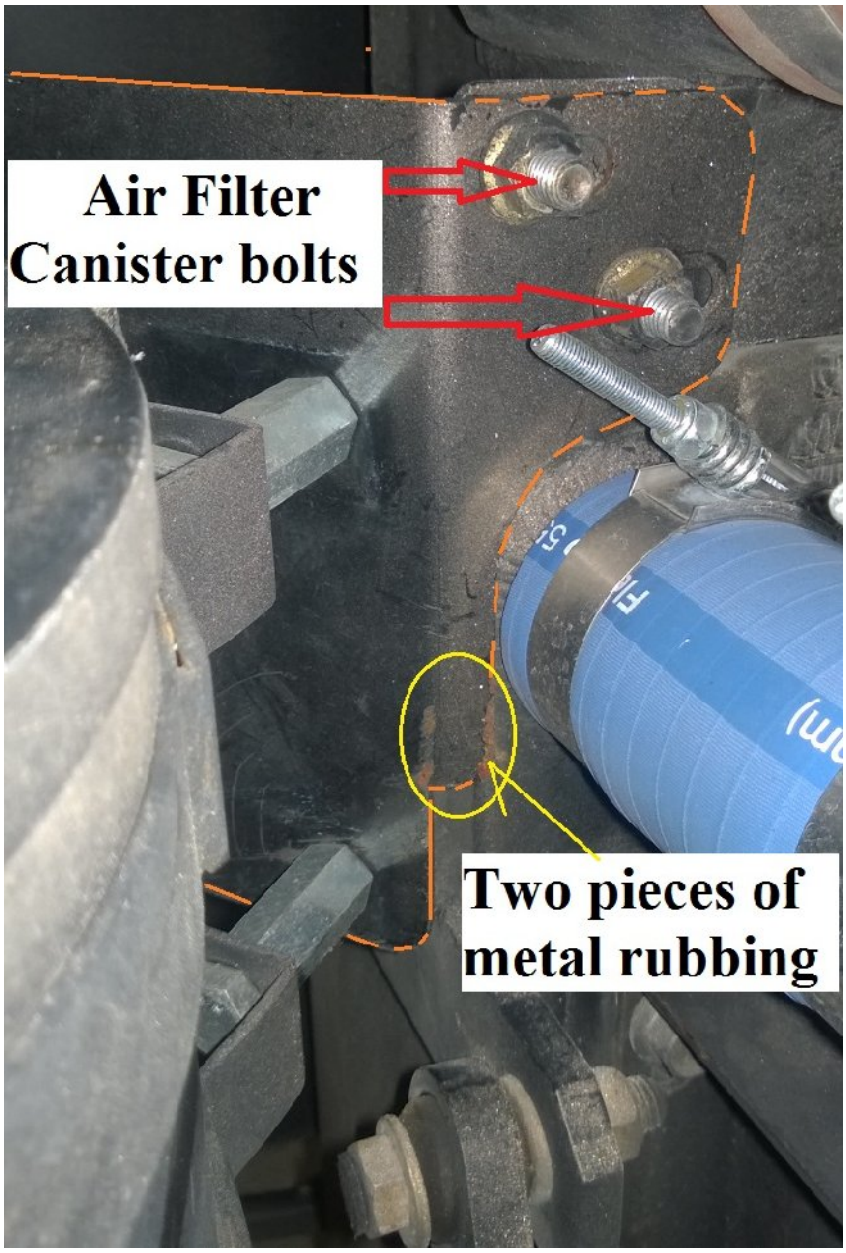
2010 43QGP Allegro Bus

12/3/2015

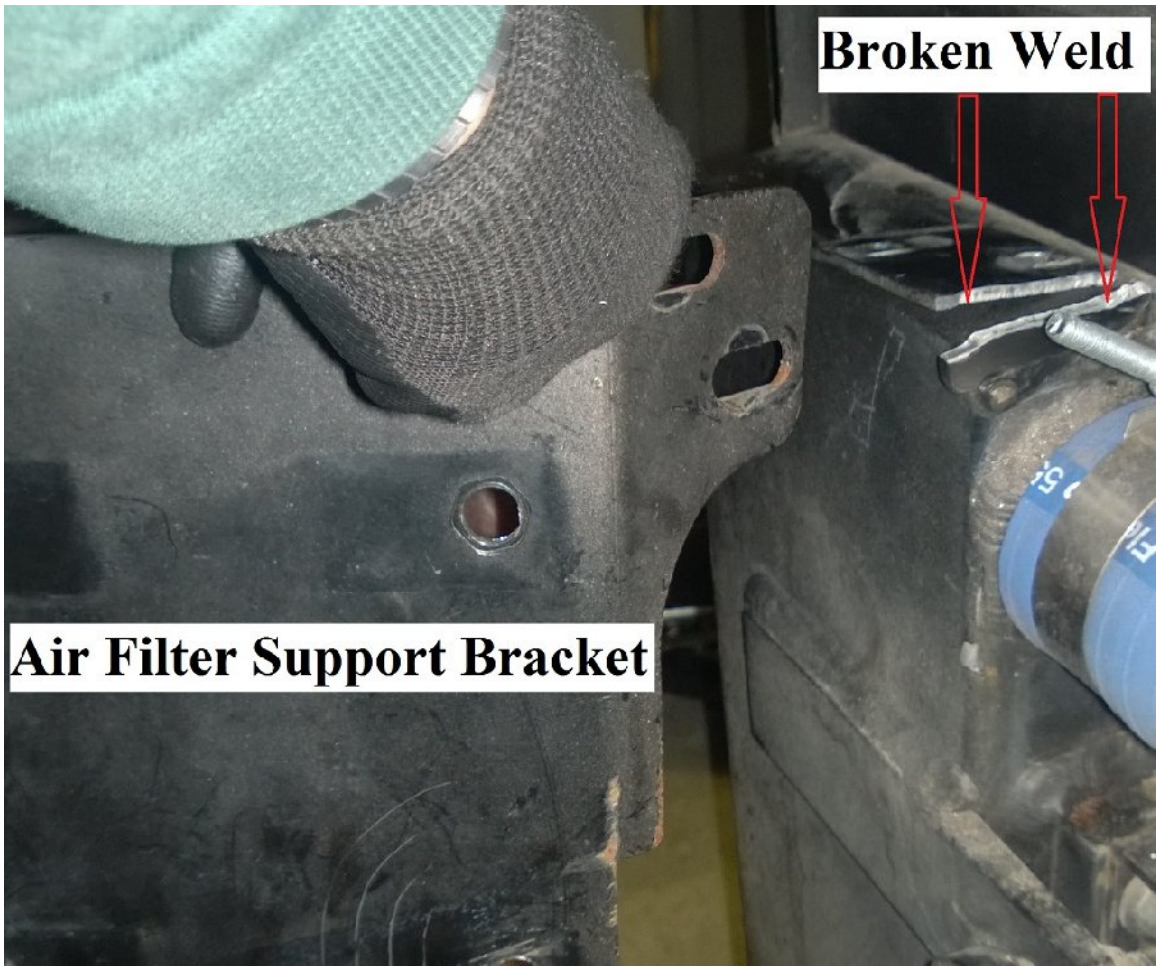
ONE-HUNDRED-SIXTEENTH, revision 1 - coach modification – **AIR FILTER CANISTER SUPPORT.** While performing coach maintenance I noticed the air filter canister is strapped to a thin piece of metal which is secured by two bolts to the radiator housing. That thin metal support can be seen in the following photo, the metal is outlined in orange.



Looking inside the yellow circle shows where the two pieces of metal had been rubbing against each other as denoted by the rusted area.
The metal air piping connecting the air filter to the turbocharger has **ONLY** about a ½" spacing between the radiator fan drive clutch and the air filter piping. After deciding something needed to be done to make everything safer. Deciding what could be done to make everything safer and at the same time easy to disassemble during

air filter cleaning in the case of an K & N air filter or air filter replacing if the OEM paper air filter is still being used took some time and head scratching on my part. For a quick air filter support the following was constructed and bolted to the radiator housing.

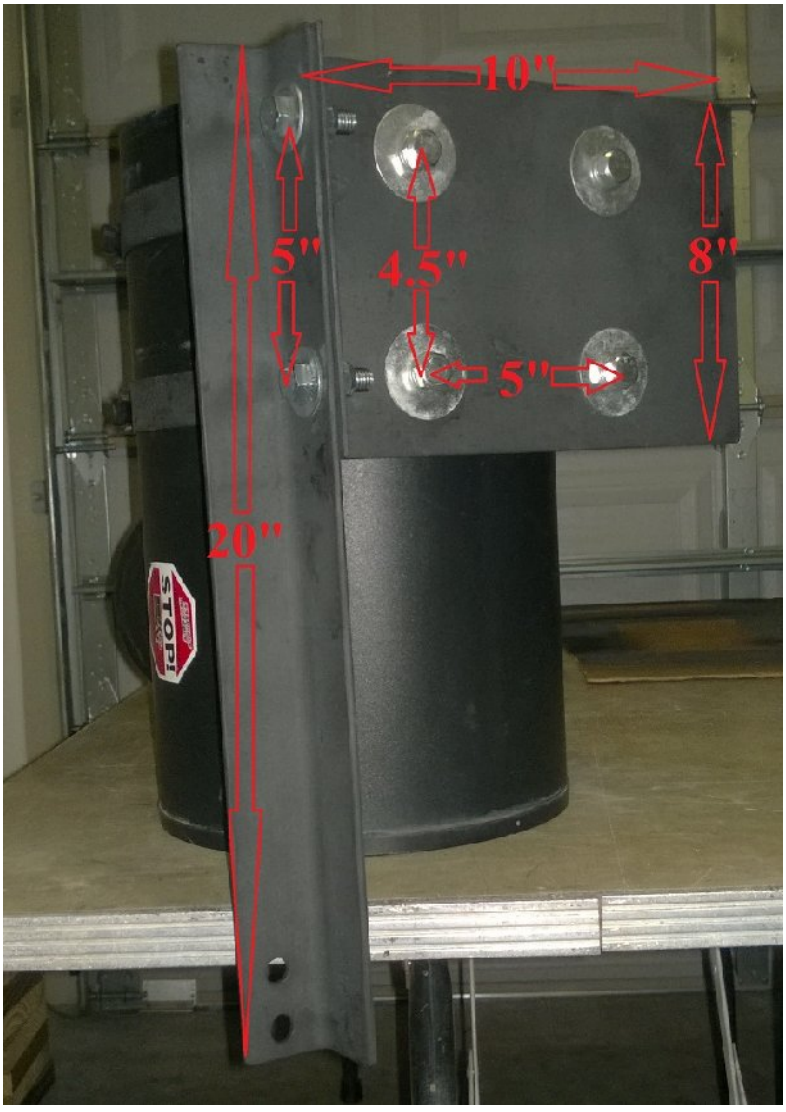
Fast forward two months, 12/2/2015 while servicing the coach I found this.



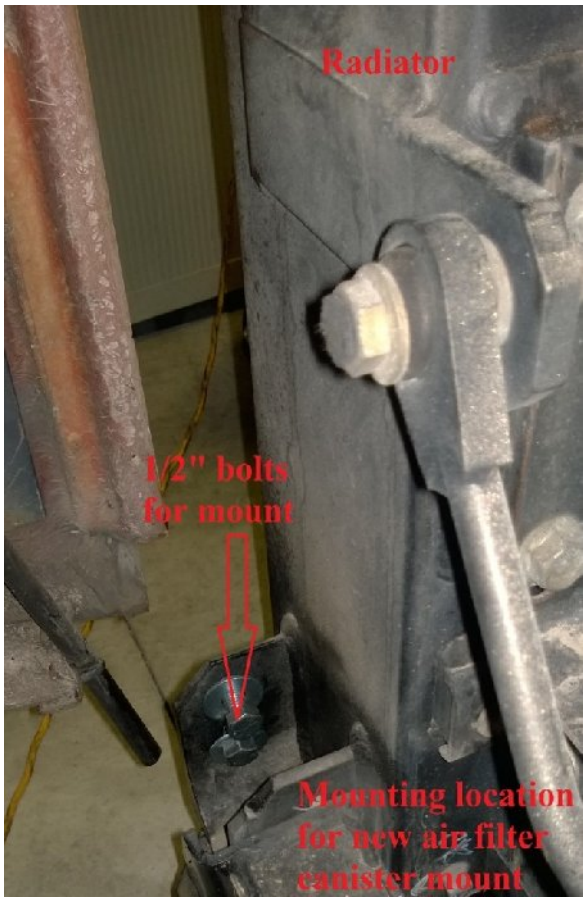
After deciding I did not want any welding around the radiator as that would present a chance for damage to the cooling package, another modification or in this case a REVISION to the original modification was needed.
After thinking about a revision for a day or so I decided to gather the following parts. Total expense for hardware and metal was $ 25.00.

1 – 20” piece of mild steel angle 3/16” x 2”.
1 - 12” x 8” mild steel plate, 1/8” thick.
4 – ½” -13 x 1 ½” steel bolts
4 – ½” x 13 Nylock nuts.
12 – ½” steel washers.

The steel plate has a 90 ° bend added, leaving 2” on one side of the bend and 10” on the second side of the bend. After figuring locations for drilling assembly holes, holes were drilled and pieces were bolted together.



First obstacle to overcome was how to access the rear cap where the air filter canister is located. That obstacle was overcome by removing the side radiator's grill. After removing the grill the black cover (lower left photo) behind the grill could be removed. Five screws secure the black cover plate after that panel was removed access for drilling below ½" holes was easy.



The photo on the RIGHT side above shows the back of the radiator grill and black plate in the photo on the LEFT side above.
Once I had access to both sides of the radiators lower support mount it was easy to drill two ½" holes thru the outside of the "U" shaped lower radiator mount. Those two holes allowed me to install the 20" long piece of 3/16" x 2" steel angle which is bolted to the sheet metal used two ½" bolts, the two air filter straps are mounted with four ½" bolts to the sheet metal.
The two photos on the following page show the location and mounting of the 20" piece of steel angle to the lower radiator support, and how the 2'steel angle is attached to the 12" x 8" piece of sheet steel. After the two pieces of fabricated steel had been mounted and the Nylock nuts tightened, the air filter straps were mounted to the sheet steel using bolts and other hardware salvaged from the OEM air filter canister mount.

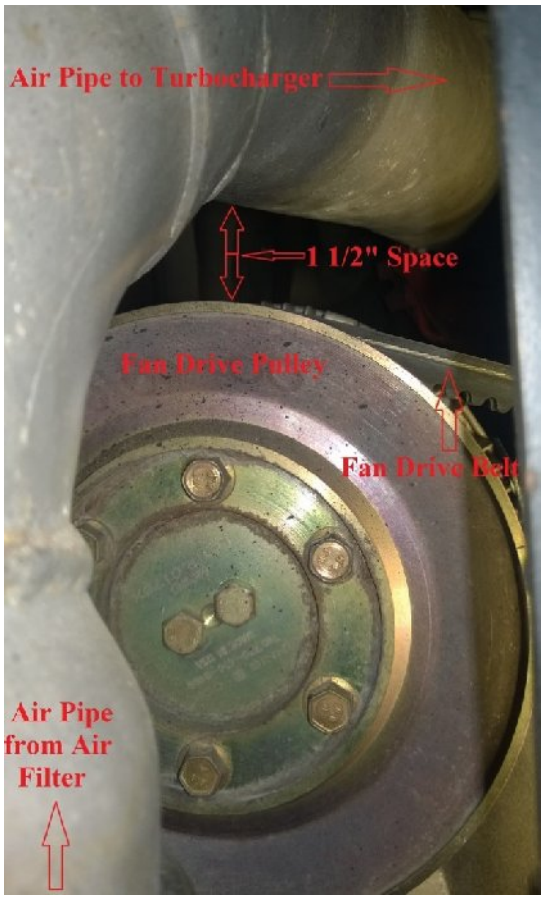
Rear Cap Outside View

Rear Cap Inside View

Bottom View Looking Into Intake

Rear Cap Inside Out View

I have no idea if the OEM air filter canister mount Tiffin used on our PROTOTYPE coach was/is a ONE OF A KIND or not. However if the steel tab welded to the radiator housing is Tiffin's standard mount I doubt our air filter housings BROKEN MOUNT is a ONE of a kind OCCURANCE?
The under the air filter canister support modification installed two months ago was re-installed under the air filter canister AFTER the ANNUAL cleaning of the K & N Air Filter had been completed. Aluminum foil (HACV) tape was used to re-seal the two parts of the air filter canister to prevent air infiltration.



Prior to this modification the SPACING between the Fan Drive Pulley and the Air Pipe to Turbocharger was ONLY **½"**, yes that statement is correct ONLY a **½"** OPEN space between the two components that is ONE reason I felt the need to correct what I see as a Tiffin engineering problem, another was to prevent what might possibly be serious damage to the coach.
While designing the revision to the canister support modification spacing between components was increased by 200% increasing the **½"** spacing between the fan drive pulley and the turbocharger intake piping to **1 ½"**.
I feel better about preventing a breakdown after completing this revision.