

Chain Replacement

Needed for this project.

Download and read http://www.apachepopups.net/oldsite/pdf_files/lifsys.PDF a 1.1Mbyte file.

5 pop rivets for each chain replaced. 10 pop rivets per end. 15 would be a good minimum number of rivets to complete 1 end.

1 Quality pop rivet gun. There are many pop rivets on Apaches, so buy a good one.

14/16 gauge wire 20' feet

Rags

Duct tape

Spray silicone lubricant, (Triflow), Grease (I used a white lithium base grease) and WD-40

Ladder

Hack saw blade

Drill Motor and Drills

Windless day. (This is because you won't have the trailer set all the way up) Of course this is not necessary for those of you that can raise their trailer roof in a garage.

Some one to help (not necessary, however it is a lot easier when reinstalling the chain)

Removing Chains

Raise the roof and set it back down on the sidewalls in the normal position then twist the sidewall latches into place. There is no need to pull out the beds.

With the sidewalls securely in place (Supporting the roofs weight) select the end you wish to work on and remove it's gearbox by removing the 4 nuts holding the gearbox to the chain channel. (You might want to spray these nuts liberally with WD-40 before you try to undo the nuts.)

Place the gearbox on the ground trying not to turn the crank for easier replacement.

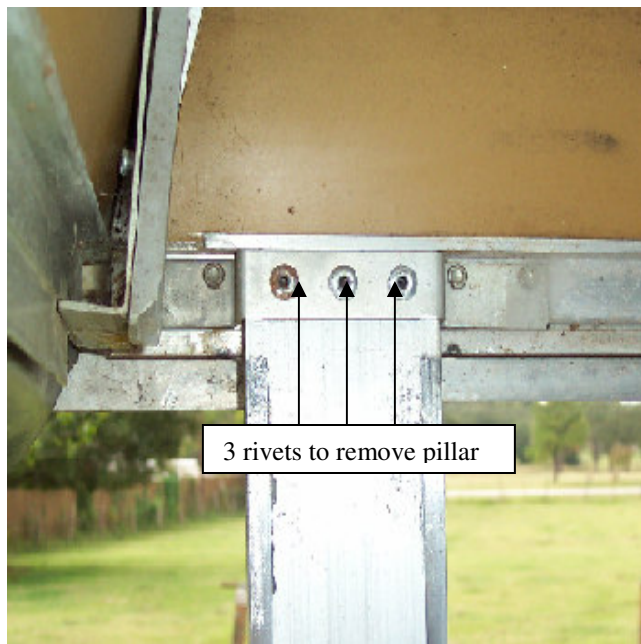
Only do one end of the trailer at a time otherwise you will loose needed stability.

With a ladder gain access to one of the 2 telescope extrusions on the end of the trailer you are working on.

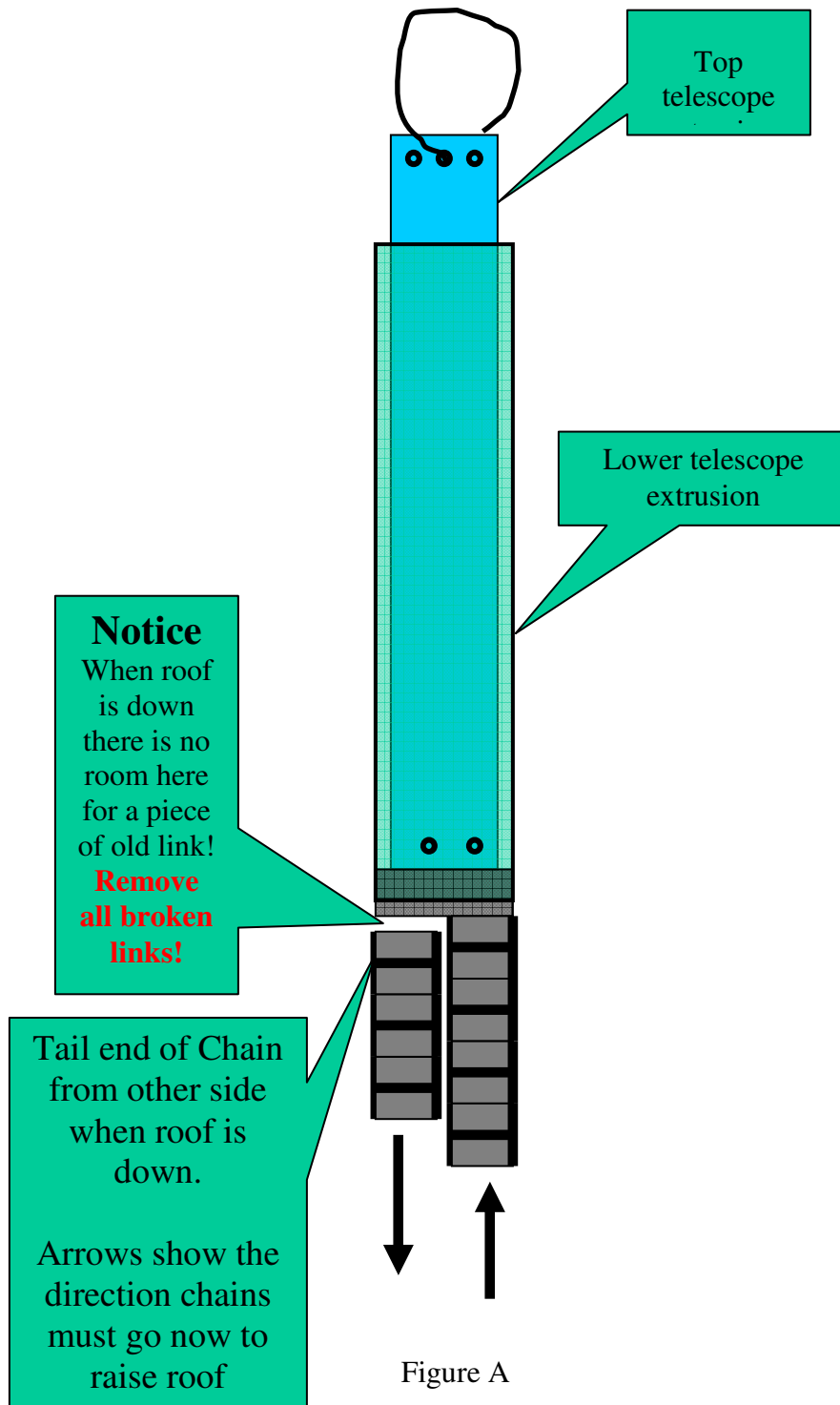
Note the 3 pop rivets top of the telescope extrusion on the inside of the trailer, you will need 5 pop rivets of this size and your pop rivet gun to complete each of the telescope extrusions you plan on removing chain from. (For all 4 corners you will need at least 20 rivets and you should have extras just in case)

Drill out the 3 pop rivets at the top of the telescope extrusion. I have had good success with using a drill larger than the center of the rivet, which cuts off the outer flange allowing the removal of the rivet. In the liftsys.pdf file look on the manual's page 5 <- printed on the page. (Page 7 of Acrobat page counter). The pop rivets look like 3 black dots

This picture shows the placement of the 3 rivets in question.



After the telescope extrusion has been detached from the roof anchor, twist the sidewall latch freeing the wall from the telescope extrusion and pull down the telescope extrusion to a good working height. Thread a 3 foot piece of 14/16 gauge wire through the center rivet hole and tie the two ends of the wire securely together forming a big loop of wire that you can pull the telescope extrusion upward later in the procedure. See figure A.





Using the duct tape, tape over the plastic buttons (See above picture) on the side of the lower telescope extrusion, making sure that the tape sticks to the plastic buttons. This will hold the plastic bushings in place when you push the smallest / top telescope extrusion back down into the lower telescope extrusion.

The duct tape helps keep the plastic side bushings in place while you do the next step.

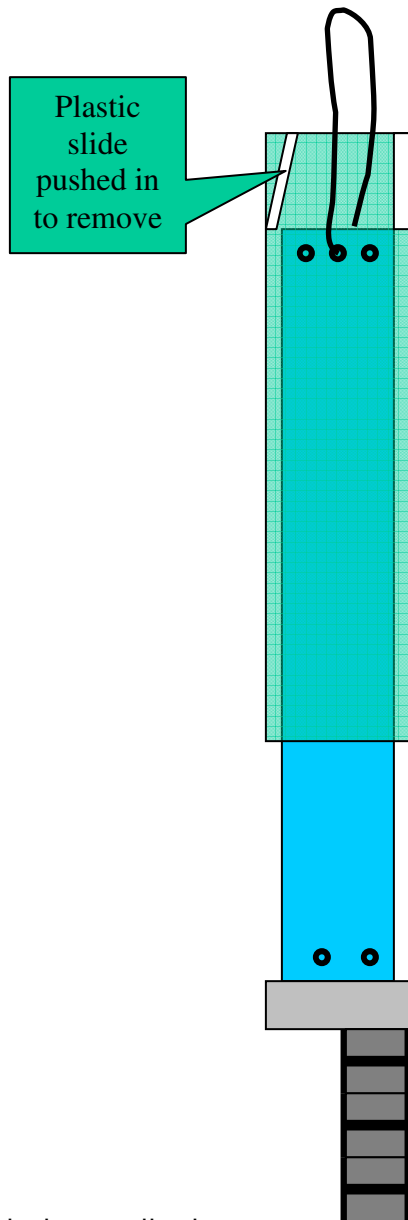


Fig B

Carefully push the small telescope extrusion into the lower telescope extrusion until it is just below the plastic bushings and then remove the plastic bushings being careful not to drop them down the lower telescope extrusions hole. Fig B

Now you can pull the chain and the small telescope extrusion all the way out with the wire you attached earlier. (Use the rag as a cushion for your hand when pulling on the wire).

With the chain removed from the trailer inspect for damaged cross bars and stretched steel cable (There should be no gaps in between the plastic pieces of chain).

Replace chain if either trouble is present.

Remove the 2 pop rivets that hold the small telescope extrusion to the chain to replace it.

Also now is a good time to replace the gearbox attachment bolts and nuts with new stainless steel ones.

NOTE very important!!!

Now with the chain removed run a wire (some of the same wire as you used on the telescope extrusions) through the chain channel and fish it out of the gearbox opening. Then tie a red rag to the end of the wire and pull through the channel (hopefully removing debris and most importantly extra broken links). I have heard of people flushing debris out with water, I however don't want water in my trailer.

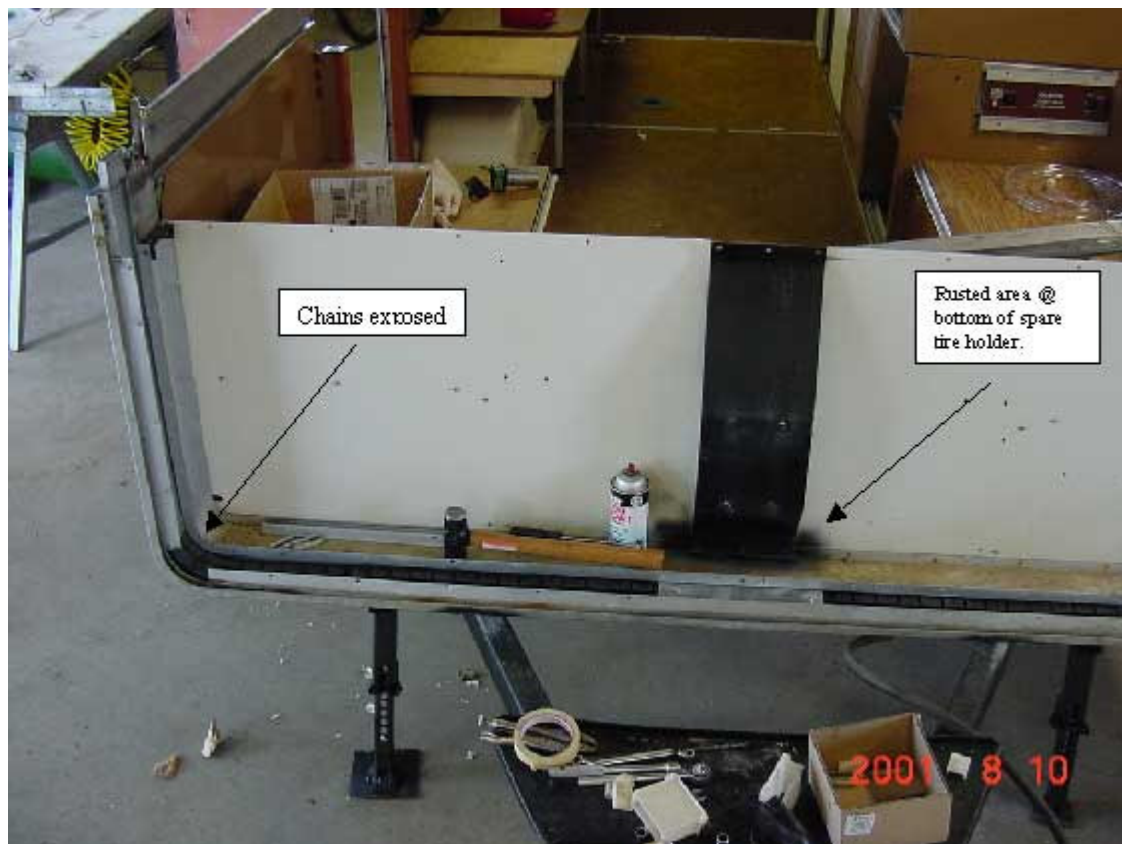
Or use the method I prefer....

Take 2 complete chains and force them both down the same side pushing debris and extra links to the gearbox opening.

From the gearbox opening remove anything that shouldn't be there with fingers or tools.

(See figure A as to why there should be nothing but 2 good chains in the track).

You are now ready to reinstall the chains. Which is the opposite of the removal process.



The picture above is just to help you see the inside area that is not normally visible. You will probably never get a chance to see these inner workings of the chain, unless you remove the front bezel of your trailer.

Installing chains

First grease the plate shown in the picture below from the gearbox opening as the chain links get pushed into it from the gears also thoroughly lubricate the chain channel with triflow. For more detail see Lubrication below.

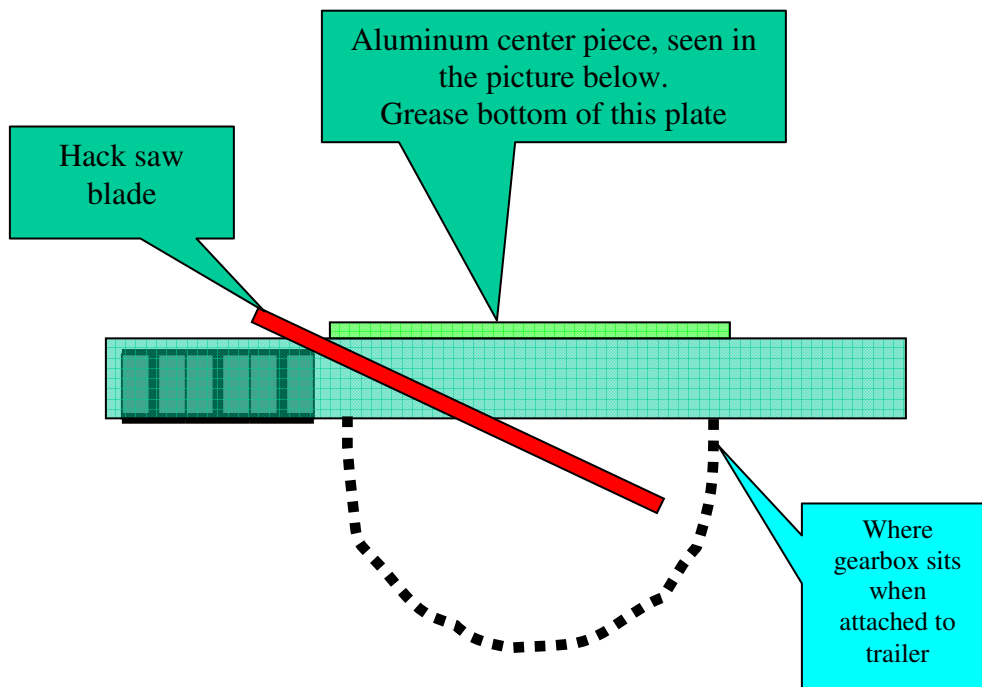
Now some of the fun begins (My new chains were stiff and didn't want to thread into the lower section very easy. See PG 8). With persistence thread the chains into the lower telescope extrusion all the way down until it stops. At this point there is usually a large amount of chain left outside the lower telescope extrusion, your chain has reached the problem area see photo on the next page below.

The problem arises when you push the chain in the channel to the metal centerpiece that is above the gearbox. The chain being pretty much continuously bent wants to curve up at the leading edge of the chain by $\frac{1}{4}$ inch or so, however it is enough to hit the top piece in the center.

When you reach that point you must take a hack saw blade or long thin flat blade screwdriver and insert it in the gearbox area to force the chain down to the bottom of the track while the second person pushes the top telescope extrusion with chain attached down into the lower telescope extrusion.

Now push the chain down until the top telescope extrusion is below where the 2 plastic bushings need to be installed in the lower telescope extrusion. Install the bushings and then pull the top telescope extrusion back through the bushings and then up to the top where you will remove the wire and re-rivet the extrusion to the top.

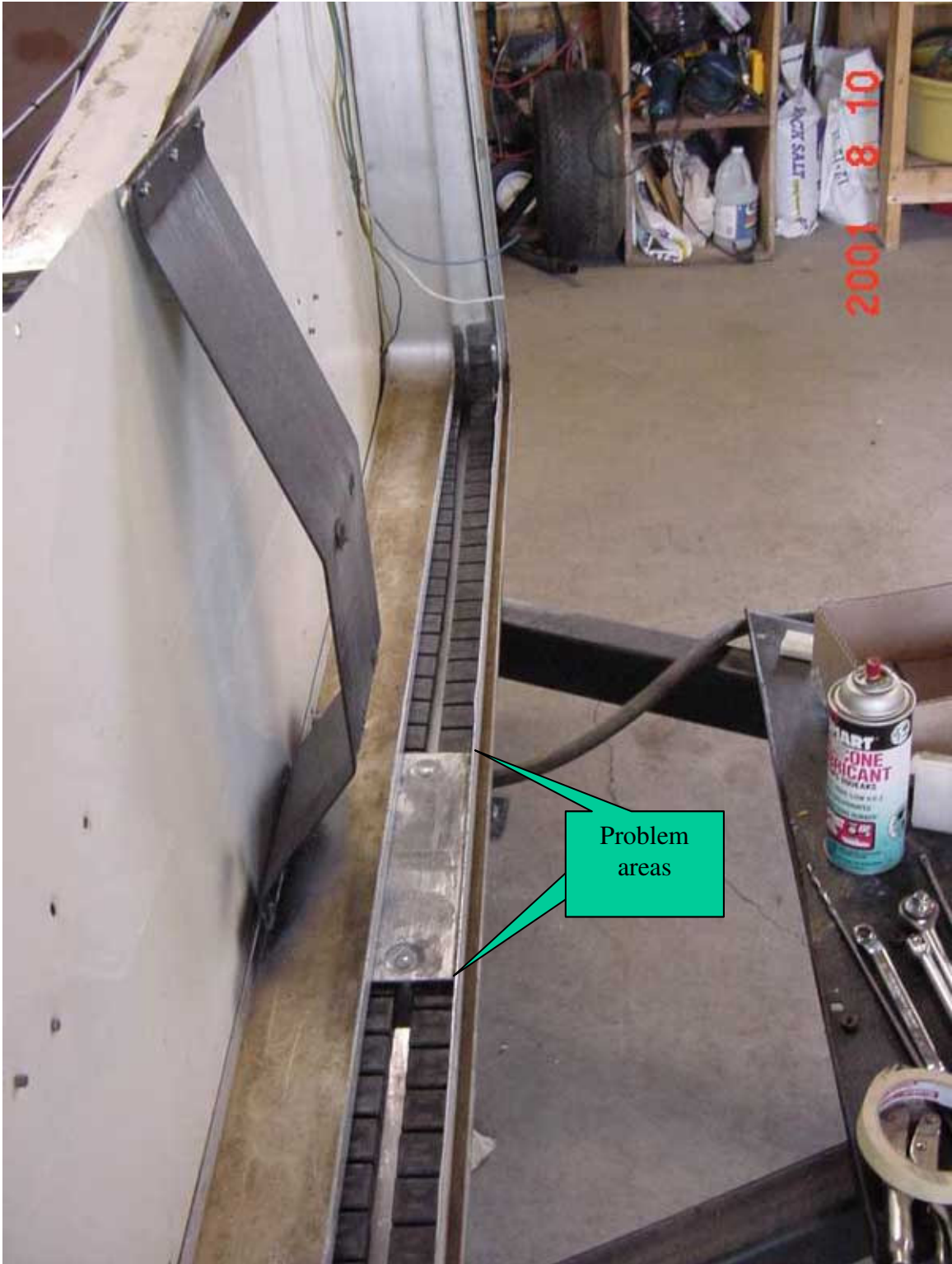
Now do the same to the other side, install the gearbox and then you are done!





Above: Ole Elmer Showing a lift chain Below: Elmer making a chain.





In the picture above note the 2 problem areas that are only a problem when you install chain.

This is a view that you will not see during this chain replacement process.

Notes

Trouble shooting.

If your top will come down almost the entire distance only to have one corner pop back up the last inch or two, then you probably did not heed my warning about clearing out obstructions in the chain channel, especially broken chain links. You must start over again by removing the telescope extrusions on that end and remove the obstruction.

Lubrication,

Spray Triflow or silicone against and down the slide tubes, and in the wall chain's channel. This will help the tubes move easier and reduce friction. Don't worry if you apply too much it will just flow into the gearbox and out the hole. If the tubes are dirty just wipe and reapply. If you do this every time you take down the trailer will reduce the lifting force considerably and help prevent bending the cam pin in the gearbox (Not good).

Items that I do not know and need to be investigated.

- 1) Pop rivet size.
- 2) Can lower telescope extrusion be pushed too far into the bottom tube?
- 3) Some one once told me how many how many links are in a chain, that number could be helpful for knowing how many links need to be searched for.
- 4) Lubrication the chain? If the chain is lubricated now it will just collect dirt that is hard to clean over time.

New chains can be bought here.

Apache Sales Corp

587 S. Court Street, Suite 200 Lapeer, MI 48446

Phone:(810) 664-9961 Hours: 7:30am - 3:30pm EST

No net orders available.

Debbie Monteleone (manager)

"Ole' Elmer" had been employed there for 35+ years ! I am told that due to health reasons Elmer doesn't work there anymore.

A special thank you to Mike Lotz for providing the pictures used in this procedure.