Fleetwood/Coleman Lift Cable Repair Guide

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Please private message me with noted errors, and I will update this document.

The repair instructions are based upon repairing a damaged main cable for the roadside front (left front) corner of a 2008 Fleetwood Utah.

Other years, models, and corners may vary.
These instructions are based upon my own experience replacing the damaged lift cable on my 2008 Fleetwood Utah, and also draws upon research I have done online, including another Fleetwood/Coleman owner's repair experience. I also do NOT have a roof mounted air conditioner. If you have one, you may not be able to lift the roof for repair on your own, and will require a forklift, crane or some other machinery to raise the damaged corner. All mechanical lift Fleetwood/Colemans will be similar, but may have minor variations. This is specifically for the front left (roadside) corner. Other corners will be similar, but with obvious differences. Someone comfortable enough with this type of repair will be able to figure out the variations.

Before you begin the repair, ensure that you are comfortable with repairs of low to moderate complexity. This repair is not hard, just time consuming. Occasional help from a second able-bodied adult may be useful, but not necessary - I did it by myself. Allow yourself a full day. One person did it in about 4 hours with help. I took an afternoon and better part of an evening, but that included stops for lunch and dinner, running out to the hardware store a couple of times for supplies and getting coffee, playing a bit with the kids, and stopping to take lots of pictures of the process.

These are what you will need to complete the repair. I am including some extra supplies to allow for small errors:

- 20 feet of 1/8" stainless steel wire rope, sometimes called aircraft cable. The kind I used is 7x19 construction, but it shouldn't matter so long as it is 1/8" and stainless steel.

- 6 x 1/8" nico sleeves. These should preferably be stainless steel, but copper is acceptable. Do not use aluminum as there is an interaction with the stainless steel causing rapid corrosion.
• Swaging tool to crimp the nico sleeves. Bought mine from Lowe's for $30. You could crimp without from what I've been told, but this makes the job so effortless.

• Several lengths of 2x4, (and a saw to cut). You will be making various lengths of temporary props.
• Tape measure
• Rivet gun

• 3/16" rivets

• You may also want a “threaded sailboat stud” described in step 28.
You will also need, (and chances are likely you already have on hand if you are a DIY-er):

- Hydraulic floor jack
- Jack stands (not required, but a good idea)
- Vise grips (2 preferred)
- Wire cutting pliers
- Bolt cutter (if you don't have, don't get one unless you have your heart set on buying one)
- Philips screwdriver
- Various SAE wrenches and/or sockets
- Hammer (may not be needed in your case)
- Small pieces of duct tape or masking tape
- Drill and small drill bits
- Loctite

Repair instructions:

1. With the trailer parked and level, ensure that you have your wheel chocks set. Preferably, rest the frame of the trailer on your jack stands. My driveway slopes slightly down, so I have the stands set in front of the axle.

   That is the broken cable you can see in the back. And in the background, is a neighbour's Coleman trailer.
2. Slowly crank the roof up, so that the functioning corners are raised by about 4”. (Be sure the latches are undone)! Lifting the

3. Lift the failed corner by hand. It will be very heavy, and the assistance of a second person may be desired. Support with a piece of wood.
4. Continue raising the roof about 4" at a time, and replacing the prop with an increasingly larger one, until you get to the point where you can no longer lift the roof by hand. Use your tape measure to determine how big you need to cut your 2x4 each time.

5. Using your jack stand, position it as shown and with a length of 2x4 long enough to fit between the lifting point of the jack when lowered, and the bottom of the roof. Slowly jack up the roof, no more than about 4" higher than the other corners at a time, then raise the working corners to match, until you have the roof fully extended.
6. Support the fully extended roof with a length of 2x4 to match the other corners and remove your jack.
7. Looking up towards the roof, on the fabric side of the lift arm, you will see it is attached to the roof by two locking nuts. These nuts are not attached snug, and will have about 1/8” of the bolt on the side facing you. These bolts are 7/16”. Undo them and set aside. The top portion of the lift arm may be disconnected from the bottom portion. Do not be alarmed.
8. Using a drill and/or wire cutting pliers, or another method of your choice, remove the rivets holding down the trim cover around the bottom portion of the lift arm. This will facilitate easy removal of the bottom lift arm assembly.

9. Drill out the bottom rivets, only enough so that the heads do not hold the shield at the very bottom of the lift arm, at the portion that is below the trailer body. Do not drill further as you will compromise the attachment of the pulley in that location.

10. Looking up from under the lift arm, you will see it is held in place by 4 bolts that fasten from the inside, and into the lift arm assembly. These have 3/8” heads. Undo all 4 bolts, be sure to hold the lift arm when undoing the last bolt so that the lift arm does not fall on you.
11. With the entire lift arm assembly removed, you will need to untangle the damaged cable(s), either by removing retaining clips holding the pins going through the pulleys, or undoing the screws securing the affected cable ends. On the 2008 Utah, the lift arm assembly will have a short cable, about 2 feet in length to connect the two sections of the arm, and a long cable that will connect to the “whiffle tree.” It is type “F” as identified on page 28 of the repair manual. The specific system will vary by model and year of manufacture, but they should all operate on the same principles. The most likely cable to have failed will be the long one.

12. If the short cable is undamaged and has been removed or has come out of its routing, you will need to reattach it. To do so, use page 28 of the guide as a reference (in my scenario, I found I was looking at a mirror image of the diagram). One end of the short cable will attach to the centre of the pulley on the black lower section, but will not actually route through that pulley. It will route through a pulley towards the top of the silver upper section, and terminate at a Phillips screw on the silver upper section. The design of this is such that when the main cable is pulled, the second shorter cable extends the upper section at the same time. If this cable is damaged, you will need to determine the exact length, and following the cutting and swaging directions in step 14, make an exact replacement, before attaching it. The photo below shows the routing of the cable through the upper pulley.

13. My instructions for the main cable replacement will vary slightly from the repair manual, but not significantly. The main variation is on when to form the loop and swage it. I also find it easier to use an existing loop from an old cable as a reference for forming the new cable’s loop. The length of the cable can be determined from the repair manual, or from a chart in a post on Pop Up Portal (www.popupportal.com/index.php?topic=43538.00). The important thing is to ensure at this point that your cable is at least that long – verify the length by measuring the old cable. You do not need to be precise at this point, but you must not be under, and should leave a few inches tolerance to work with. If you have more than a few inches, do not worry, and do not bother cutting at this stage.
14. On the main cable, form a loop on one end. The directions for forming the loop are on page 30 of the repair manual. For sizing of the loop, either follow the measurements listed, or hold the loop you are forming next to an old loop and match the size. The supplier of the wire rope likely has the ends taped to prevent unravelling. Carefully remove the tape, and do not allow the wire rope to unravel. Route the cable to form the loop through the nico sleeve. Use a vise grip to keep the loop clamped together until you can swage it.

15. Using your swaging tool, you should swage the sleeve in two spots, using the 1/8” holes on the tool.
Your newly formed loop should look as follows.

16. Attach the new loop to the Philips screw on the bottom of the silver upper section of the lift arm, with the wire routing upwards, and through the pulley at the top of the black bottom section of the lift arm, starting on the same side that the Philips screw is.
17. Route the cable so that it loops around the pulley and goes towards the bottom of the lift arm assembly on the opposite side of the Philips screw.

18. Route the cable through the bottom pulley as shown in the picture. You will likely need something to fish the cable through as shown. A good way to do this is to use something like a plastic cable tie, and join the cable end and tie together with some tape.
Slowly pull it through.

Then pull the cable taut, and remove the cable tie.
19. Lower the unfinished cable in through the body of the trailer, then route it through the cable hole in the frame.
20. Place the entire arm assembly into the body of the trailer, then fasten the 4 bolts, using loctite to keep them in place.

21. Directly across from where the cable enters the undercarriage of the trailer, you should see a hole in a frame member, on the other side of which there is a pulley. Route the cable through the hole and pulley.
The cable will make a turn towards the back of the trailer.

22. Route the cable through the larger inner hole of the next cross member going towards the back of the trailer.
23. On the left side of the trailer, by the fresh water tank, there is also a silver baffle/bracket. Route the cable through the notch in that over the axle, then the hole in the next cross member immediately behind the axle. As viewed from the back of the trailer looking forward:
24. The final step in cable routing before reaching the whiffle tree is the point where the cables for all four corners converge. Looking towards the back of the trailer, the pulleys are as follows:

- Curbside top pulley = Curbside rear corner
- Curbside bottom pulley = Curbside front corner
- Roadside top pulley = Roadside rear corner
- Roadside bottom pulley = roadside front corner

Route the cable through the pulley towards the whiffle tree.

25. Return to the lift arm, and extend it fully and carefully, so that the short cable expands the assembly, and does not become slack. You will need to play around with the two sides to determine how the mechanism works, as it is not easily describable by words. Reattach the top of the lift arm to the roof, tightening the locking nuts so that between 1/8” to 1/4” of the bolt extends below the nut.
26. Return to the central pulley assembly, and pull the new cable taut, clamping it in place with a vise grip.

27. The whiffle tree is covered by a flat, black metal panel. Unbolt the whiffle tree panel and remove it. You will find that the whiffle tree panel is covered with grease (and probably dust as well). No need to do anything to it, unless there appears to be excessive dirt, in which case, clean and regrease the panel. The bar of the whiffle tree slides along this panel.

28. At the back end of the whiffle tree bar, the cables terminate. As the entire bar assembly moves back and forth along the worm gear, the roof is raised or lowered accordingly. The bar will be at its furthest back position. In the 2008 design of the whiffle tree (other years may vary), the cable terminated in what is called a threaded sailboat stud. I do not know how commonly available this part is, nor the proper way to attach it to the wire. As I had assumed the design on my whiffle tree used a loop end as on other years, I did not even know that such a possibility existed.

I undid it from the whiffle tree bar and saved it for re-use, which I will describe in a subsequent step.

To undo this from the whiffle tree, use a vise grip to clamp onto the sailboat stud. Then using pliers, grip the attached nut, and using a back and forth rocking motion, tighten the pliers, rotate the sailboat stud counter clockwise, when viewing towards the back of the trailer, then release the pliers from the nut, and rock the stud clockwise. Continue rocking back and forth until it is undone (this is slow and tedious, but the only way I could do it with limited clearance).
29. If you do not have a tool specifically to cut wire rope, such as a bolt cutter, your vise grip has something you may not be aware of – a built in wire cutter, much like other pliers do, but they aren’t as obvious as they do not appear to be any blades there. To use your vise grip to cut wire, tighten the vise grip completely while closed, release it open, then tighten slightly more so that there is resistance to close the vise grip. You will need to take out two nico sleeves. Hold them along the wire and against the sailboat stud then allowing an additional 1/2” or so, cut the wire there, by first taping the wire rope, then clamping the cutting section of the vise grip against the wire rope. You should be left with the sailboat stud, and a stub of wire rope about 1-1/2” long, long enough to fit two nico sleeves and still have 1/2” of wire rope left.

30. Go back to the whiffle tree, and place the cut sailboat stud/wire stub in it’s hole without fastening it, roughly so it matches the other 3. While holding it with your hand in place, pull the new cable taut, and line it up so that at the whiffle tree bar, the new cable runs parallel to the old wire stub. The point where you will cut the new cable will be where it lines up to where the wire stub ends and the sailboat stub beings. Cut as described in step 29.

31. You will join the old wire rope stub and sailboat stud to the new wire rope, using what is called a “lap swage.”

32. Align the wire rope ends in such a way that 1/8” extends past the nico sleeves as shown above. Swage each nico sleeve twice.
33. Attach the completed end to the whiffle tree bar.

34. Tighten the nut to the sailboat stud in the opposite manner to what is described in step 28. Tighten the nut until the wire becomes very taut, and when plucked like a guitar string, twangs with a similar sound to the other corner for the same end of the trailer (in this case, as compared to curbside front). When fully tightened, my nico sleeves do not extend any further than the the other sailboat studs, and will not interfere with the whiffle tree operation.
35. Reattach the black panel that covers the whiffle tree assembly.

36. Carefully remove your temporary 2x4 prop. The corner should stand fully extended on its own.

Verify operation of the system by lowering and raising the roof.

37. Enjoy your favourite drink. You deserve it.