

# Changing A Segment

The image shows the word "AIRSTREAM" in a bold, white, sans-serif font. The text is centered horizontally and overlaid on a dark blue background. The background features a diagonal metal beam with several silver rivets, suggesting an aircraft or industrial setting. The overall composition is clean and professional.

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# ***Purpose***

*To familiarize you with metal repair techniques and to demonstrate how to replace an end shell segment.*

# *The Mission*



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# *The Journey*



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*Repaired - 16 hours later*



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*As Good as New!*



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## ***Repair Method***



*Depending on the year of the trailer you will need to decide if you will be using buck rivets or Olympic rivets.*



*For this demonstration we will be using Olympic Rivets.*



*Then you will need to order the correct segment(s).*



*For this demonstration we are changing a roadside rear segment.*

# Segment Part # 114888



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## ***TOOLS NEEDED***

*Putty Knife – 1-1/2” wide stiff blade*

*Hammer*

*Dutchman /Aviation snips*

*Docking Shears*

*Cordless Drill or Air Drill*

*Rivet Pop Gun*

*Sharp Knife*

*Awl/Pick---for pulling metal tight*

*Clecos & Pliers*

## *Supplies Needed*

*No. 30 Drill Bit*

*No. 20 or 21 Drill Bit*

*1/8" #45 Rivets*

*Olympic Rivets*

*3/4" #8 Panhead Screws*

*1 1/2" Masking Tape*

*Seam Tape*

*Baby Powder*

# *Supplies Needed*

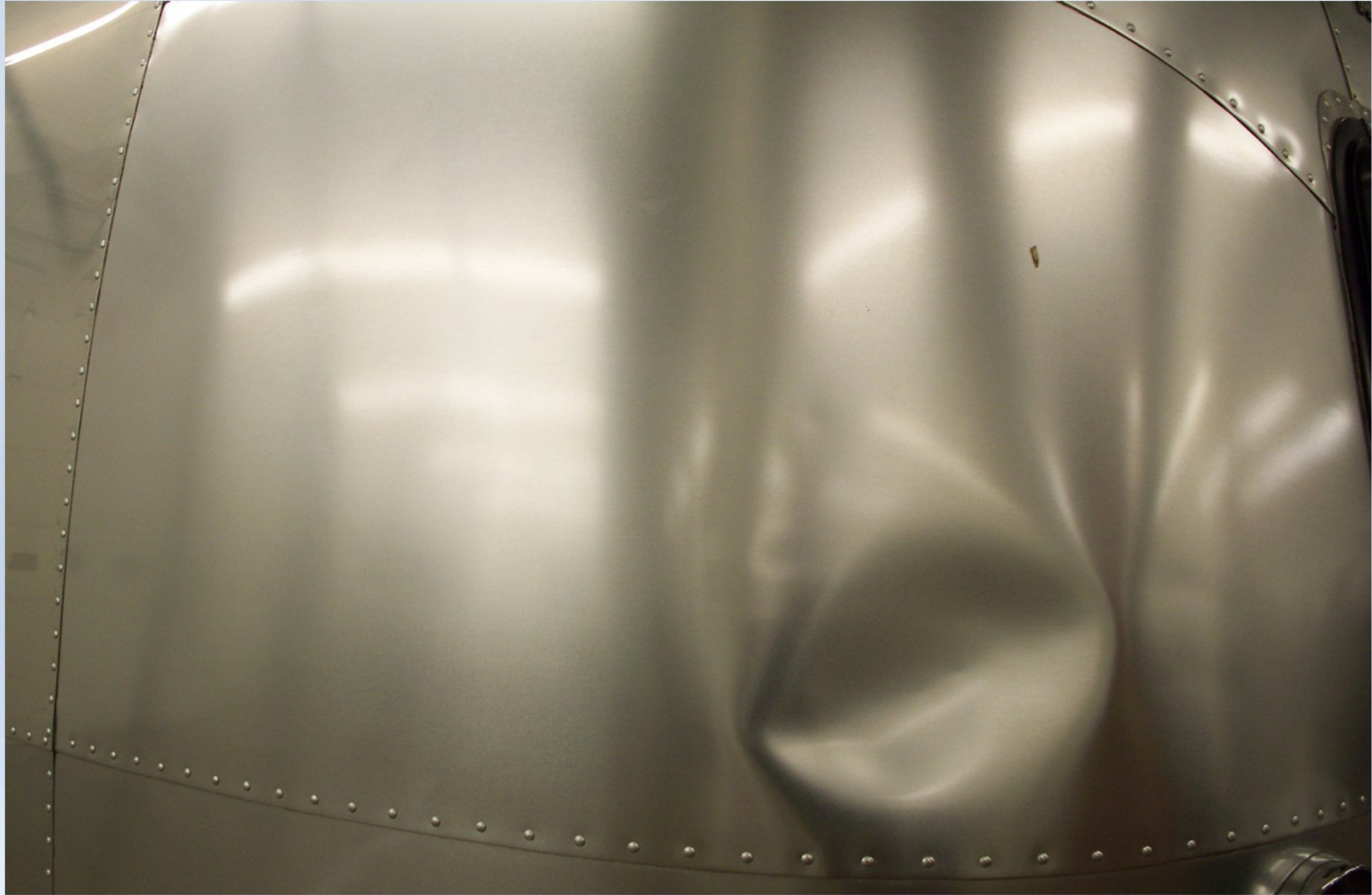
*And Most Importantly*

***Patience***



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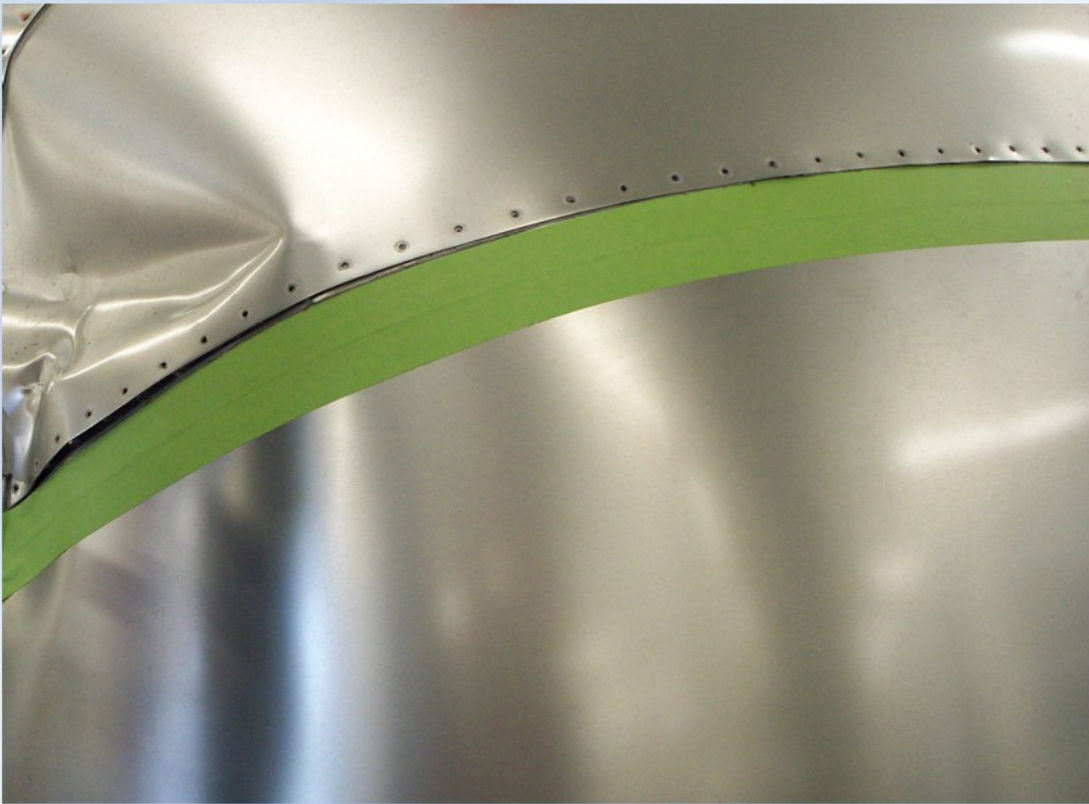
# *Roadside Rear Segment*



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## *Where to Start? Tape Segment*

*Using 1 ½” wide masking tape. Tape all edges of surrounding segments to protect them from damage*



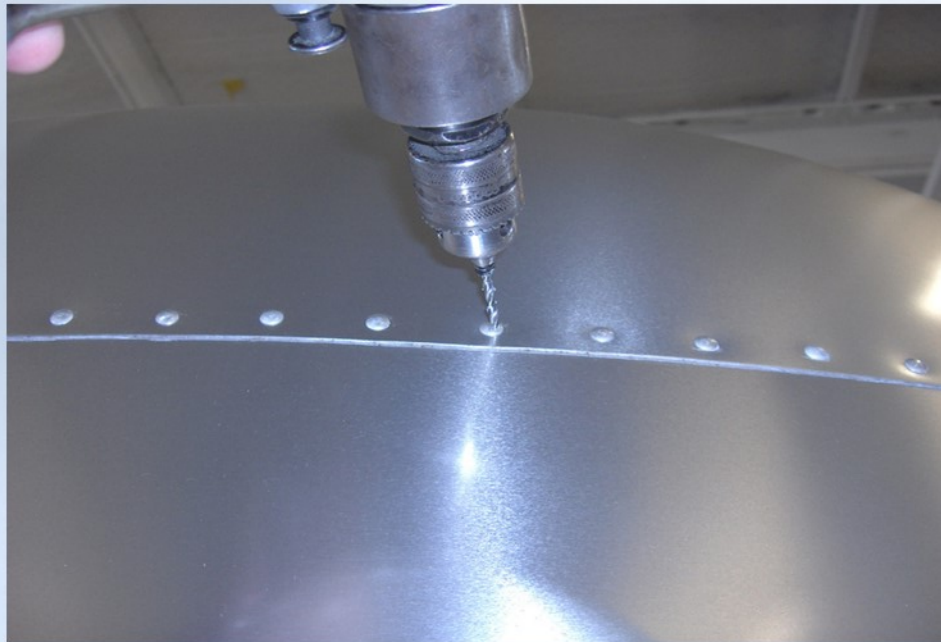
## *Tape Segment& Mark*

*Tape all edges of surrounding segments. This is the time you will want to mark locations of lights, rivet lines, connections, etc.*



## ***Drill Out Rivets***

*Using a No. 30 drill bit, remove rivets from all the seam lines pertaining to the damaged segment*



*Be careful not to scratch surrounding segments or panels when drilling out rivets*

# Drilling Out Rivets

## Several Options

*Use a center punch or nail set and a hammer to indent the head of the rivet or drive the rivet stem in. This will keep the drill bit centered on the rivet head.*

*Use a variable speed drill and start off slowly until bit has begun to bite into the rivet. Unless the panel has been repaired before the rivets will not be Olympic rivets just regular buck rivets. Drill into the rivet only far enough to go the depth of the rivet head; then use the center punch to snap off the head and push the shaft of the rivet into the trailer.*

### *Rivet Removal Tool*

*Allows quick & accurate removal of button head rivets and blind fasteners. Locking ring permits depth adjustment so you only drill out rivet head. Guides & drill bits are included to remove #40, #30, #21, #10 rivets. Using a drill with at least 3000 RPM helps along with the proper drill bits. Use of 135 degree split tip cobalt drill bits is the best.*

*Check at an aircraft supply house, most sell drill guides for drilling out rivets.*



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## *Loosen Seams*

*Loosen the seams with a putty knife after all the rivets are removed.*



### ***Do not pry with the putty knife!***

*Prying on the seams with the putty knife will damage the segments.*

*You also will need to loosen any seams near window areas or where curved segments and side and roof sheets meet.*

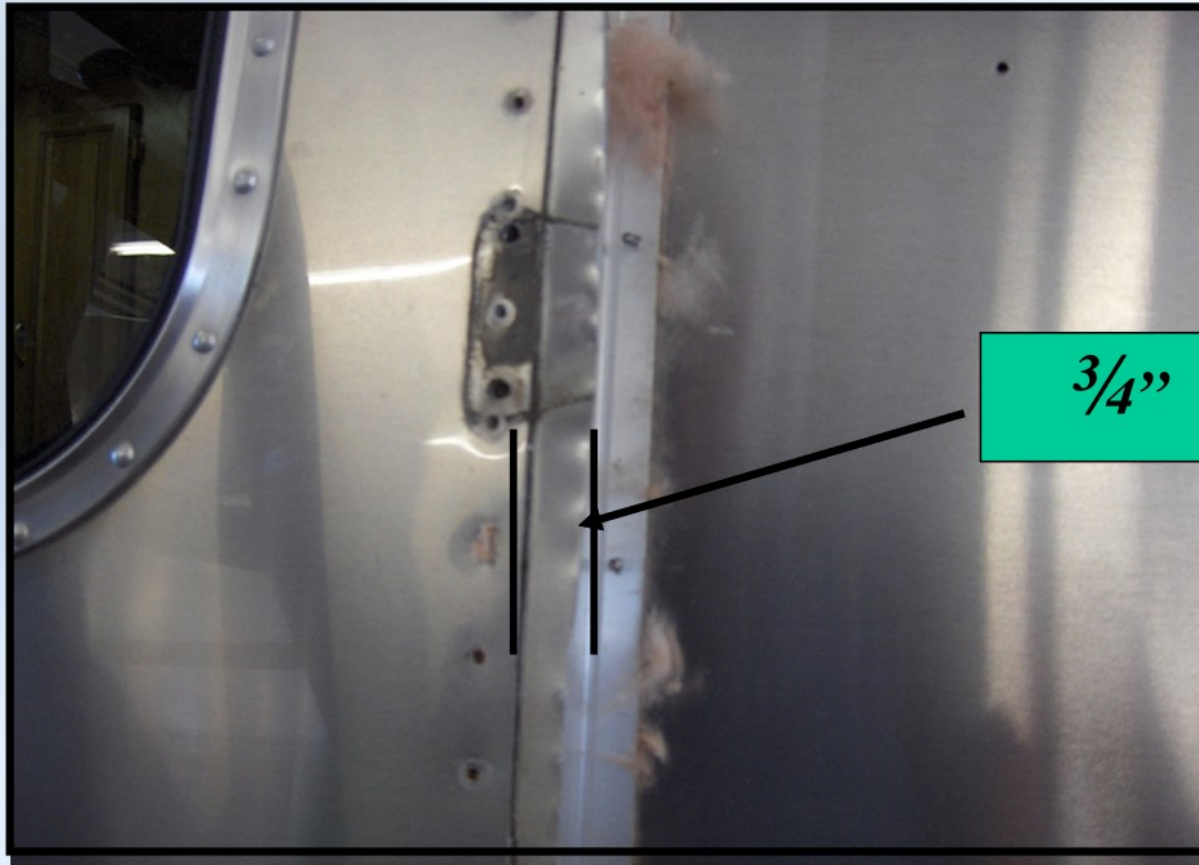
# *Cutting Out Damaged Segment*



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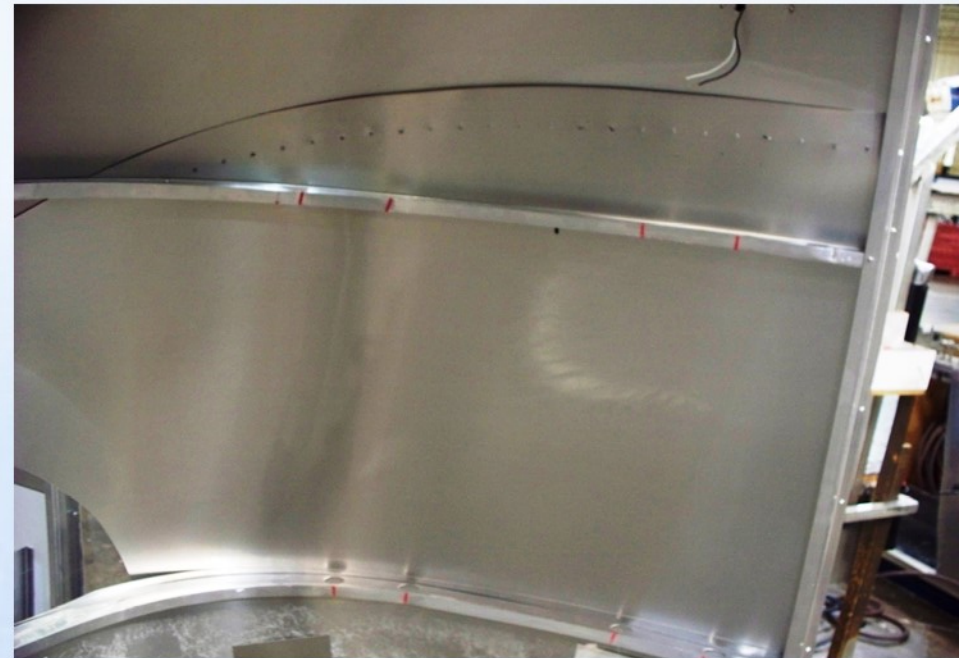
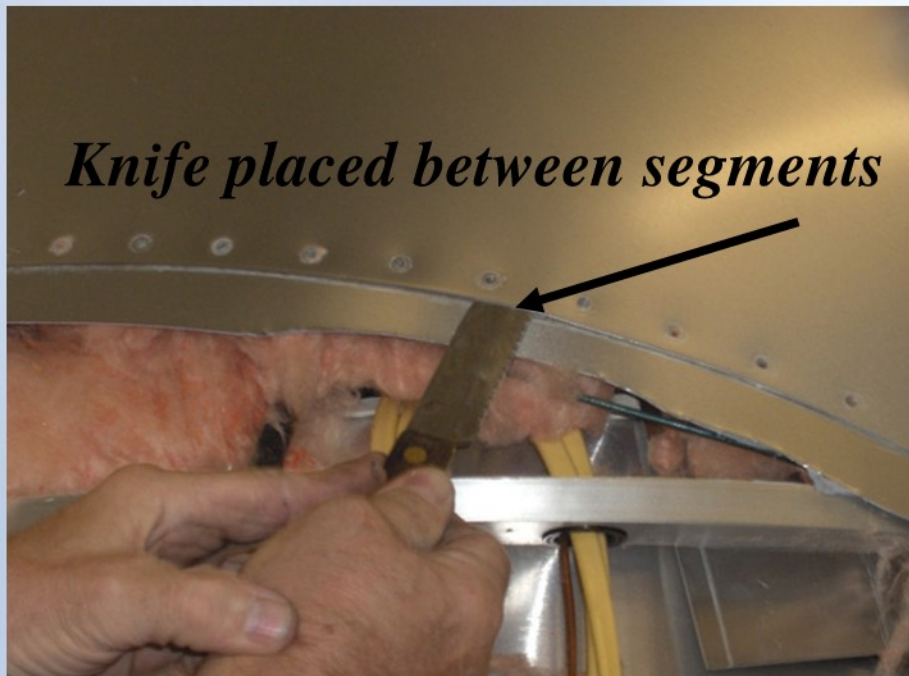
## Cutting Out Damaged Segment

*Cut away the old segment leaving only  $\frac{3}{4}$ " of material.*



## Removing Segment

*Place a sharp knife between the segments and cut the caulking on the back side of the segment.*



*NOTE: Do not pry on the knife as this may damage the segment not being replaced.*

## Shearing Off Rivets

*Place a putty knife under the inner most segment. Using a hammer gently tap the putty knife to shear off the rivet holding the segment in place.*



*Putty Knife placed  
under bottom segment*

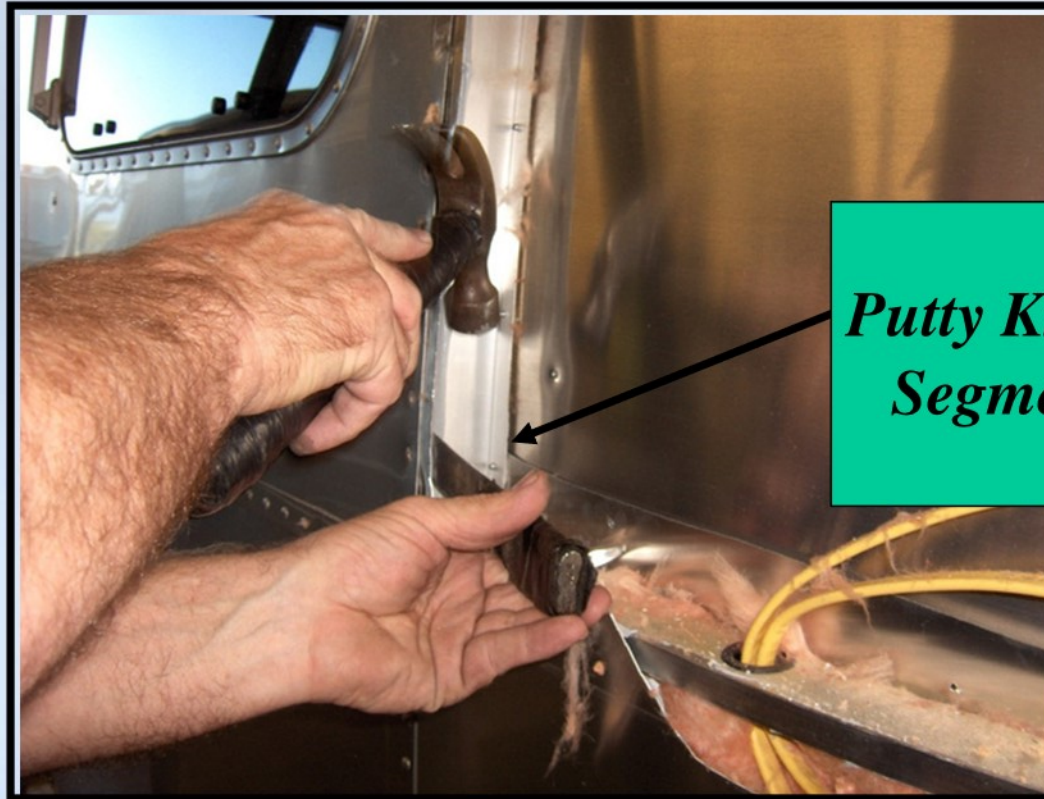


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## *Shearing Off Rivets*

*Place a putty knife between the inside segment and rib. Gently tap downward with hammer.*

*This will separate metal and remove any burrs left from the rivets.*



***Putty Knife Between  
Segment and Rib***

# *Clean Off Surrounding Segments*

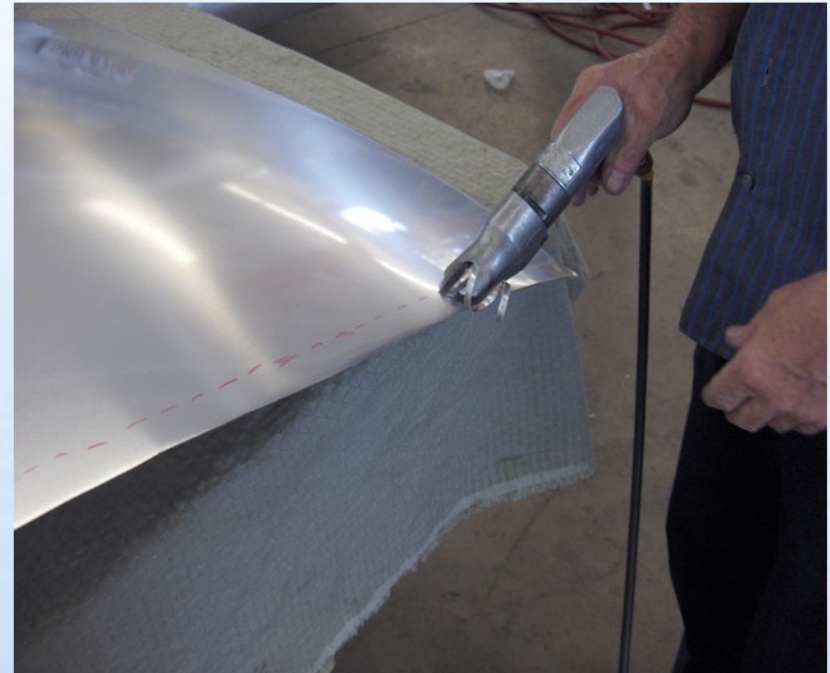
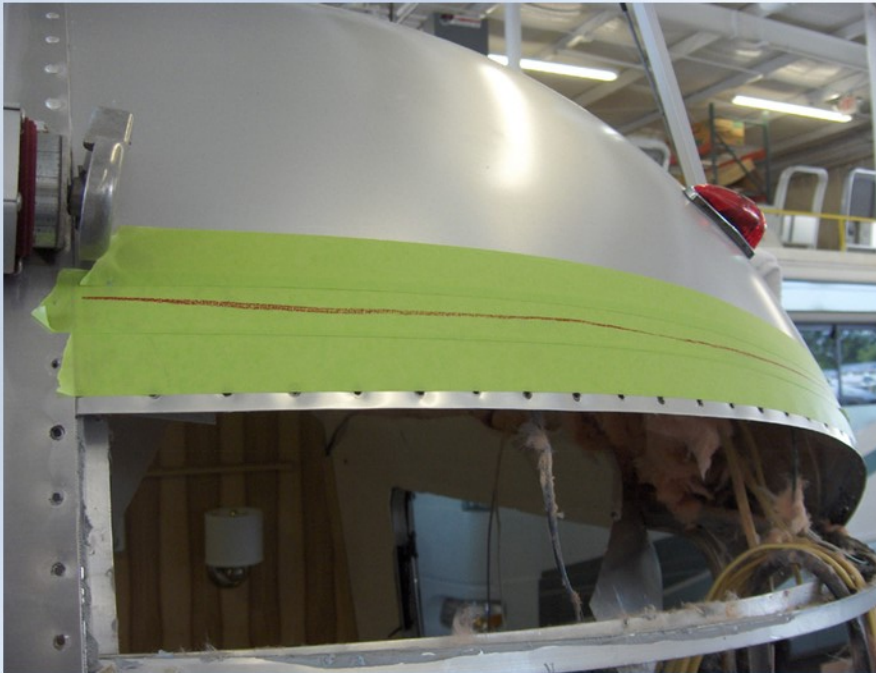
*Clean the drill shavings off the surrounding segments*



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## *Trim New Segment to Fit Opening*

*Using Dutchman or docking shears trim the segment to overlay the existing segments by approx.  $\frac{3}{4}$ " to 1"*





## *Round Corner of New Segment*

*Round Corners of segment that are behind the existing segments. This will let the new segment slide easier.*



*Rounded  
Corner*

*NOTE: Do not round corners that will be exposed*

## *Place Masking Tape on New Segment*



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## *Installing New Segment*

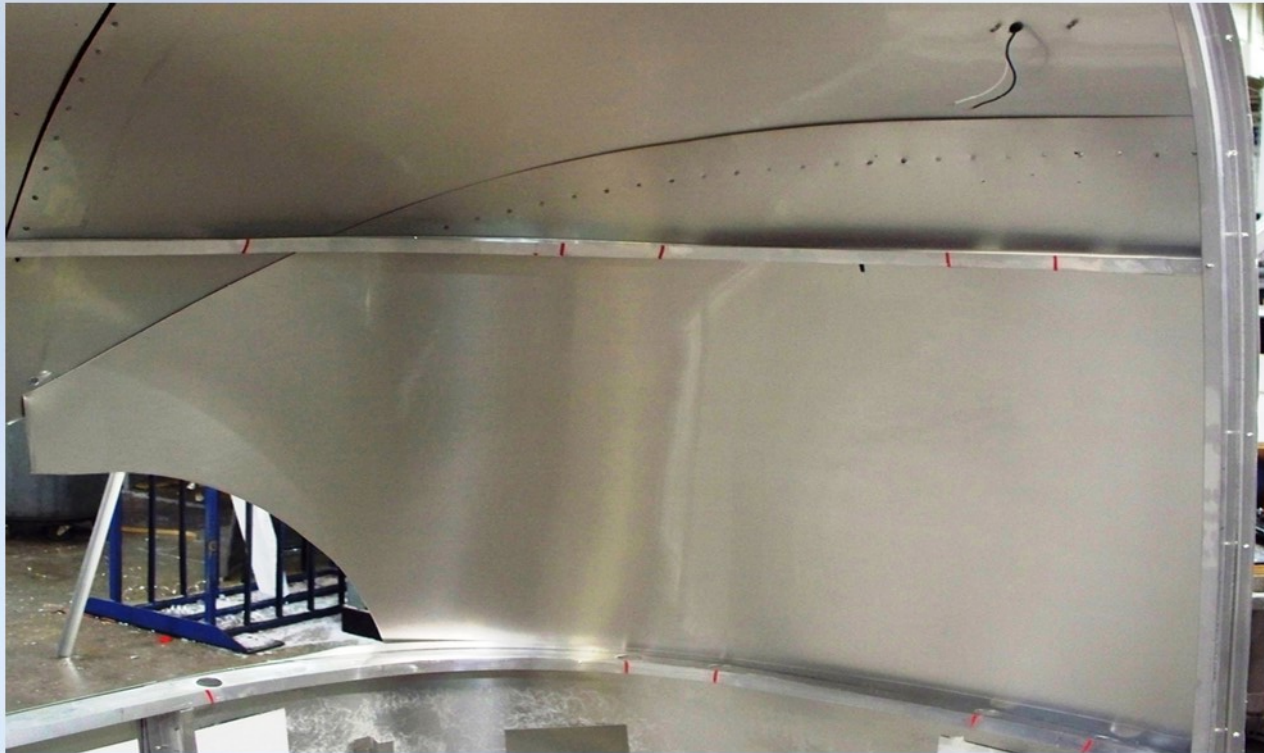
*Gently tuck the new segment into place. Be sure to overlap the segment  $\frac{3}{4}$ " to 1"*



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## *Segment from the Back Side*

*Gently tuck the new segment into place. Be sure and overlap the segment  $\frac{3}{4}$ " to 1"*



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## *Installing New Segment*

*Gently tuck the new segment into place. Be sure and overlap the segment  $\frac{3}{4}$ " to 1". Use a Putty Knife to aid in sliding to segment into place*



*Putty Knife*

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## *Installing New Segment*

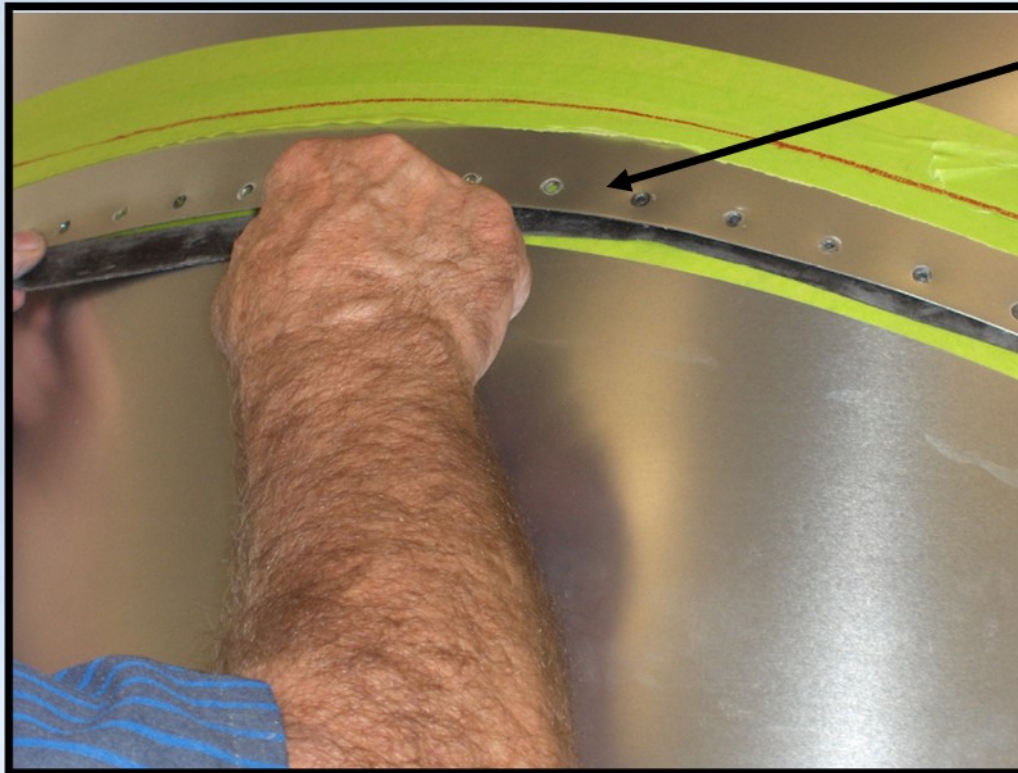
*To help slide the segment down into place this homemade tool works great (you will develop your own specific tools as you go).*



***.040 Metal with lip to  
to clip over segment.***

## *Inserting Seam Tape*

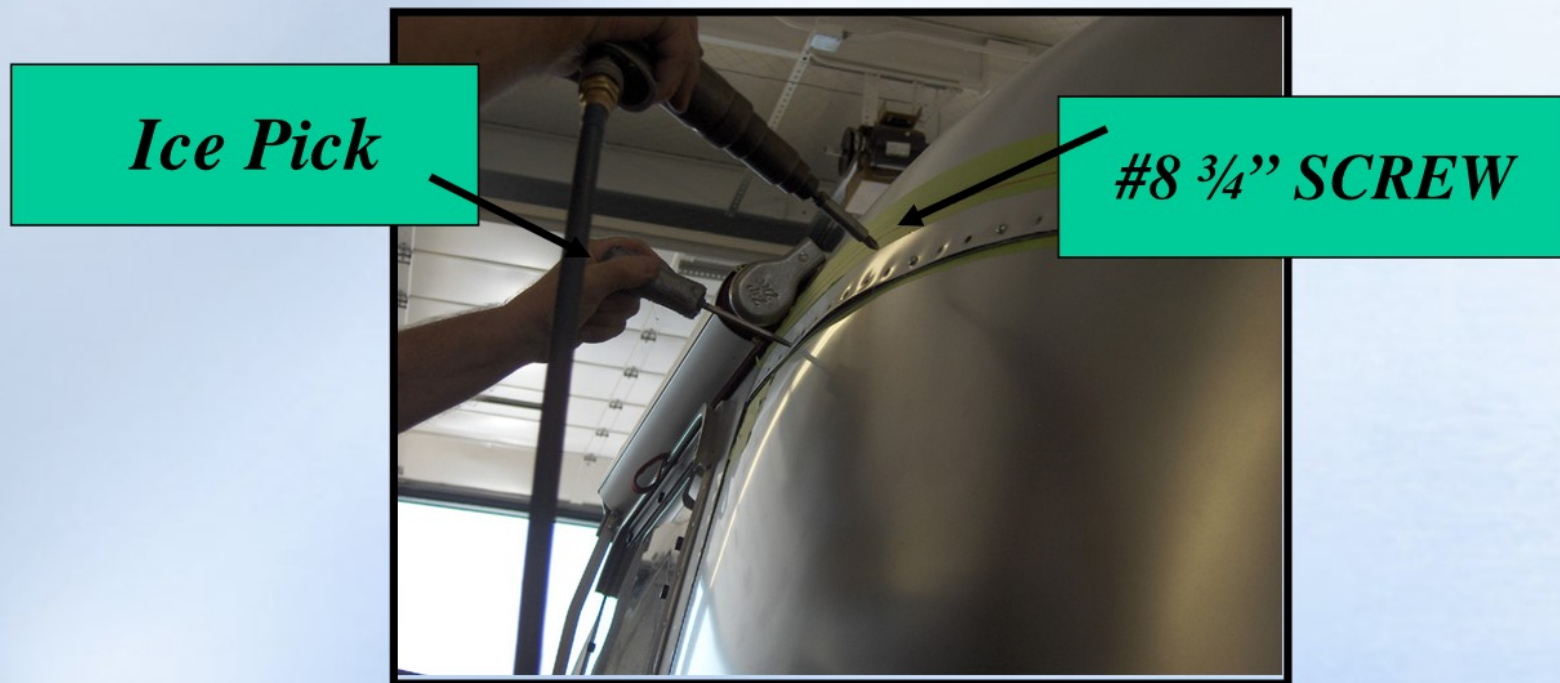
*Using a Putty Knife gently insert seam tape between segments.*



*Seam Tape*

## *Installing New Segment*

*Using an awl, gently stretch the segment to take up the gap and secure using a #8 3/4" panhead screw or Clecoc.*





# *Hard Riveting*

## *TOOLS NEEDED*



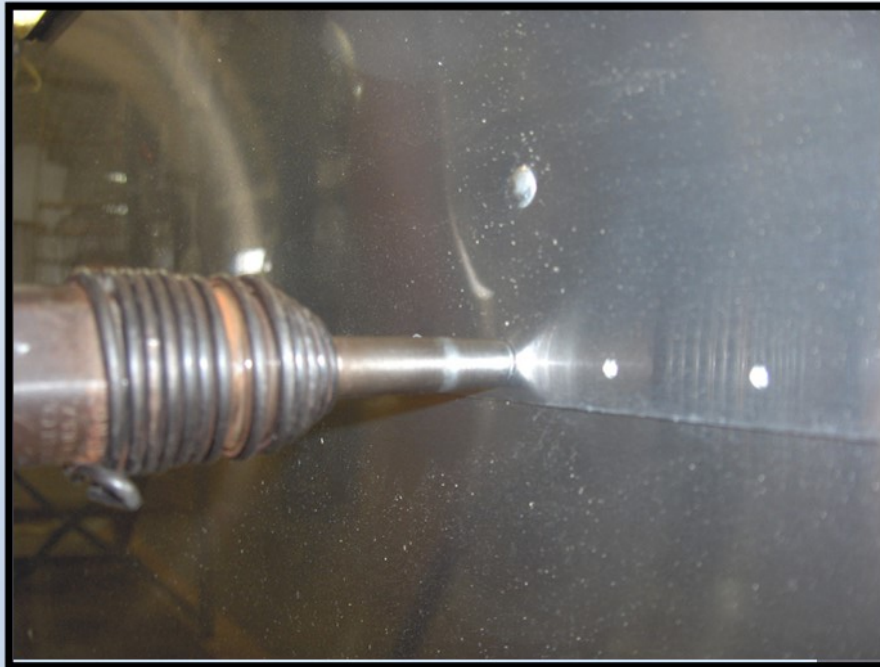
*“T” Bucking Bar- 683183*

*Buck Rivet Gun- 683190*

*Straight Bucking Bar - 683184*

*No. #30 Drill bit& Drill*

# *Bucking Rivets*



*Outside Trailer*

*Inside Trailer*



*NOTE: Practice on Scrap metal*

# *Olympic Rivets*

## *Tools Needed*

*Rivet Shaver*

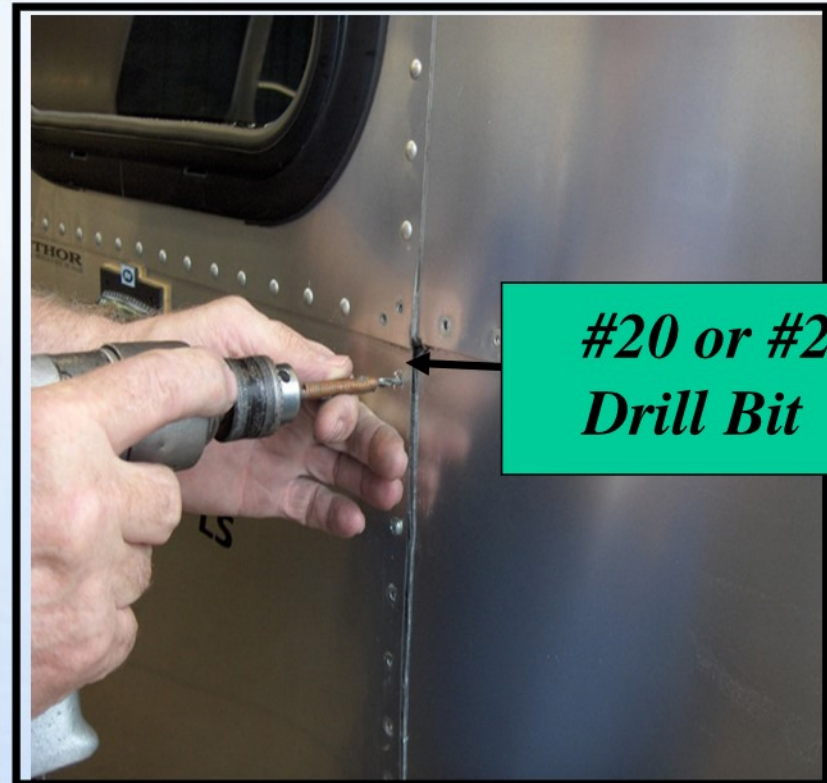


*Pop Rivet Gun*



# *Installing Olympic Rivets*

*Drill holes using a #20 or #21 Drill Bit*

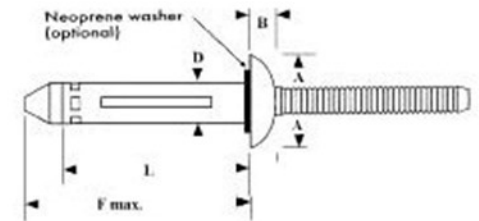


*#20 or #21  
Drill Bit*

*Caution: Use drill stop to prevent from drilling too deep*

# Installing Olympic Rivets

Install Olympic Rivet into holes



Dimensions of our 5/32" Olympic Bulb-tite Rivets

A = .312

B = .072

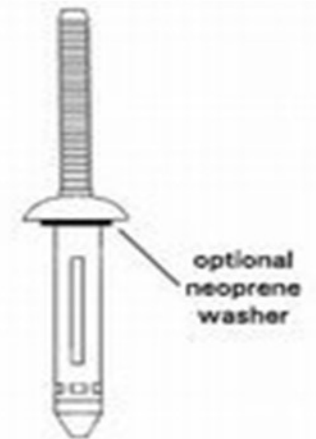
D = .161

F = .920

L = .800

Hole size = .162 - .167 (#20)

Grip range = .020 - .312



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## *Installing Olympic Rivets*

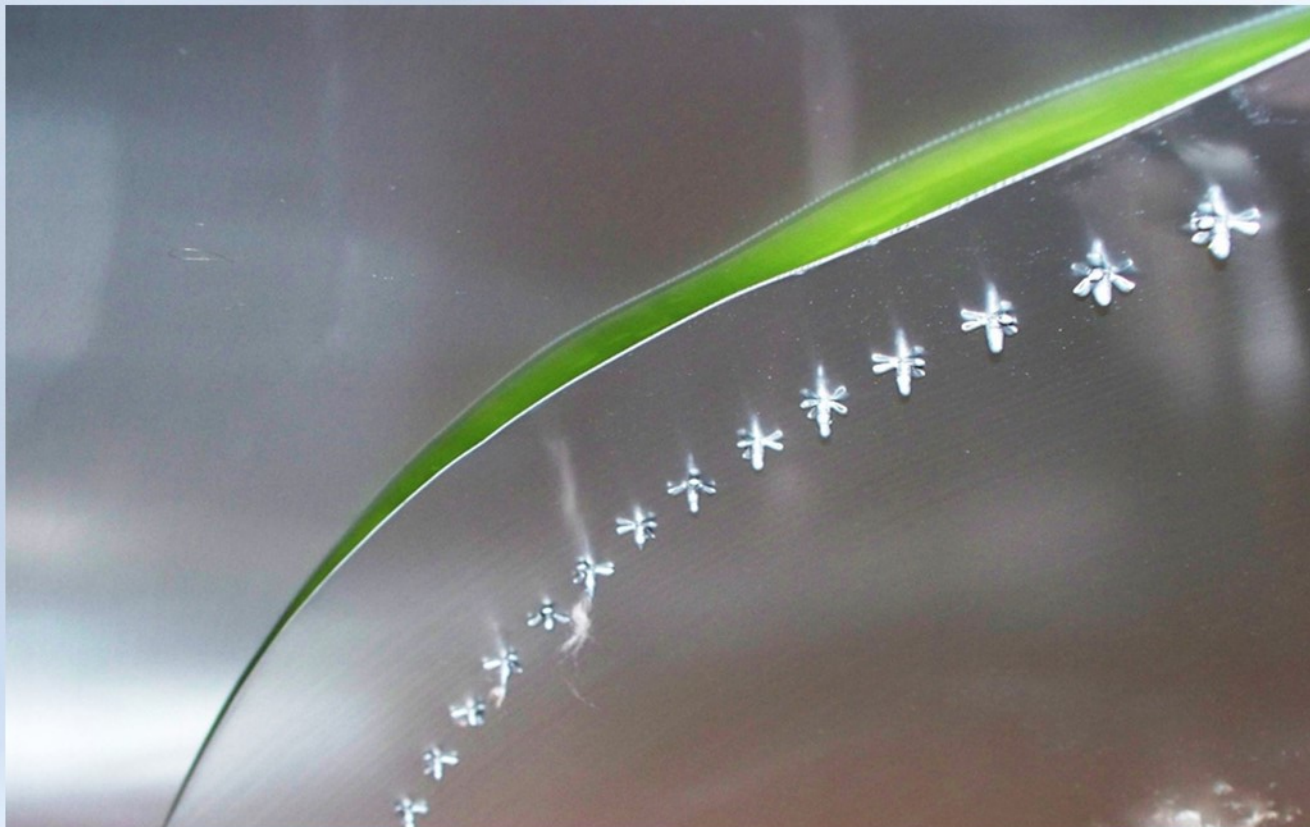
*Install Olympic Rivet into holes*



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## *Installing Olympic Rivets*

*Olympic Rivets from the inside*



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## *Installing Olympic Rivets*

*Using Side Cutters snip off  
Rivet stem*

*Caution: Use Drill stop to prevent from drilling too deep*





# *Installing Olympic Rivets*

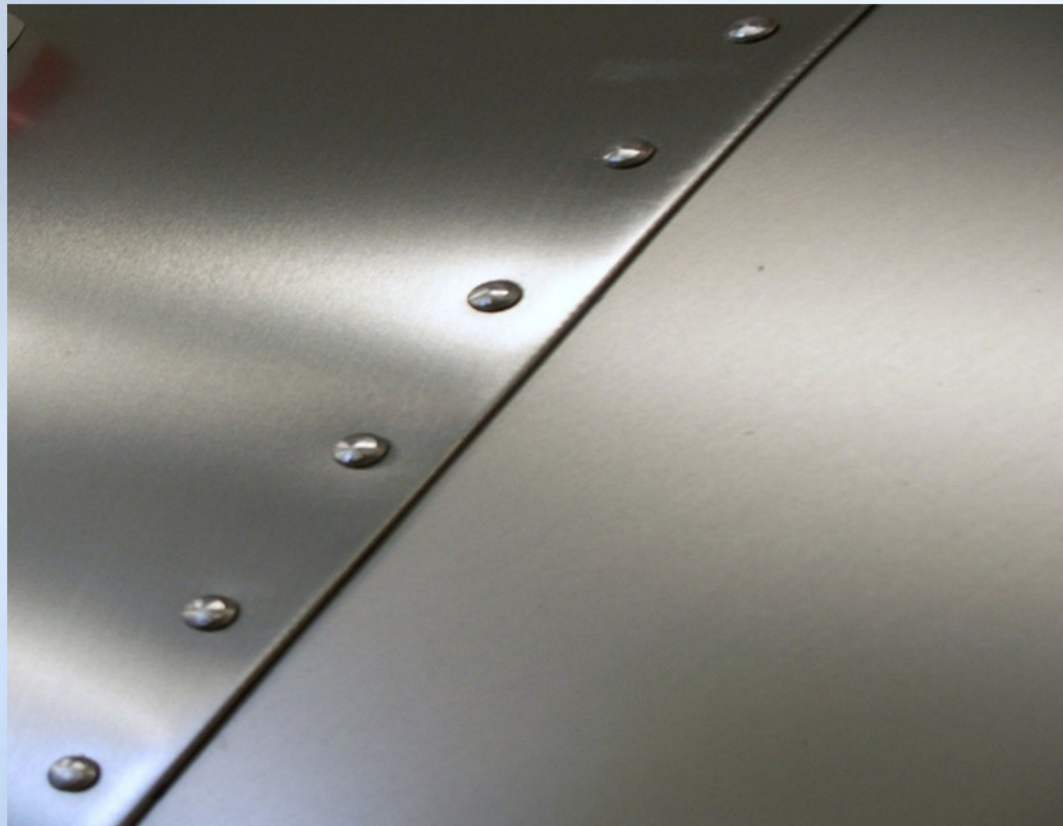
*Shave Olympic Rivet to simulate a factory installed bucked Rivet.*

*stabilize the drill and shaver*



## *Installing Olympic Rivets*

*Shave Olympic Rivet to simulate a factory installed bucked Rivet.*



## *Clean Segment & Surrounding Areas*

- *Remove any Shavings*
- *Remove any Tape Residue or Grease Pencil Marks*
- *Apply Acryl-R to Segment Seams*
- *Water Check the Trailer*
- *Electric Check Trailer*