

COMPETITION OPEN-MOUTH DEER

PART 2 OF A FOUR-PART SERIES:
MOLDING AND CASTING

by Dan Rinehart

With Paul Cales



*Paul Cales won Best in World Whitetail Deer with this mount at the
1997 World Taxidermy Championships®.*

Welcome back! In Part 1, "Molding and Casting," we had just removed the "rough" casts from the silicon molds. In review, we produced four separate casts from the four separate molds which we created previously. The four casts which we created are: 1) half upper palate ending before molar "crusher" teeth, including all papilla and lip-line to hair; 2) full upper palate excluding the papilla and lip-line, including the molar "crusher" teeth and upper palate back to throat; 3) half lower jaw including the papilla and lip-line to the lip hair; 4) lower jaw and molar "crusher" teeth just the lower jaw and no papilla or lip-line.

Four separate casts to complete the mouth of one deer seems a bit excessive. Nonetheless, if you remember back to Part 1 "Molding and Casting," you will recall that it was necessary to separate the castings into smaller, more manageable units so that proper attention could be given to the more delicate features.

NOW THAT ALL FOUR CASTINGS ARE COMPLETED and ready for detailed "re-working" and placement, let's jump back into it and get restarted by analyzing and discussing mannikin alteration.



1. Altering a closed-mouth mannikin to an open mouth position is not difficult, but does require some specific considerations: first, determining the proper place to make the cut along the length of the mount; second, the location of the cut up from the bottom side of the jaw to meet the first cut and release the lower jaw. The second cut is the easy one, so let's concentrate on the first. Obviously, the lip-line of the mannikin is the starting point. Once we get past the lip-line, it all gets a little more "gray." Assuming the lip-line of the mannikin has been sculpted correctly, the cut continues back from there. When considering where to continue the cut, the zygomaticus muscle becomes the reference point. The zygomaticus muscle runs from the scutiform cartilage at the ear base, slopes down to the jaw line, and continues straight forward to the back corner of the lip. Some sculptors like to dip or raise this muscle, so use this muscle as a reference. When the zygomaticus is positioned properly, how-



ever, the bottom edge to bottom half of this muscle is the guiding point for the cut. This photo shows how to draw a line from the back corner of the mouth and along the bottom edge of the zygomaticus muscle. This line establishes the first cut. The second cut is simply made from the juncture of the lower jaw/head to the first cut.

2. Simply place the upper palate where it would be in a live deer. You can see that the bottom of the zygomaticus muscle runs along the bottom of the molar teeth. Where the upper and lower molars meet is identical to the lower edge of that zygomaticus muscle. This confirms that the zygomaticus muscle is the proper place to make the cut.



3. When drawing the reference line on the other side of the mannikin, use the bottom of the eye socket as a reference to be sure that the lines are the same on both sides, allowing the cut to be made squarely. The eye socket is used as the reference point because it is a static point that cannot move.

4. The lines are drawn and it's time to cut, however, do the mannikin roughing and prepping around the lower jaw and muzzle prior to cutting and placing the palates. The delicate details of the palates can be damaged easily if the palates were placed and then the roughing and prep work were performed. Doing the prep work first can save you a great deal of heartache later.

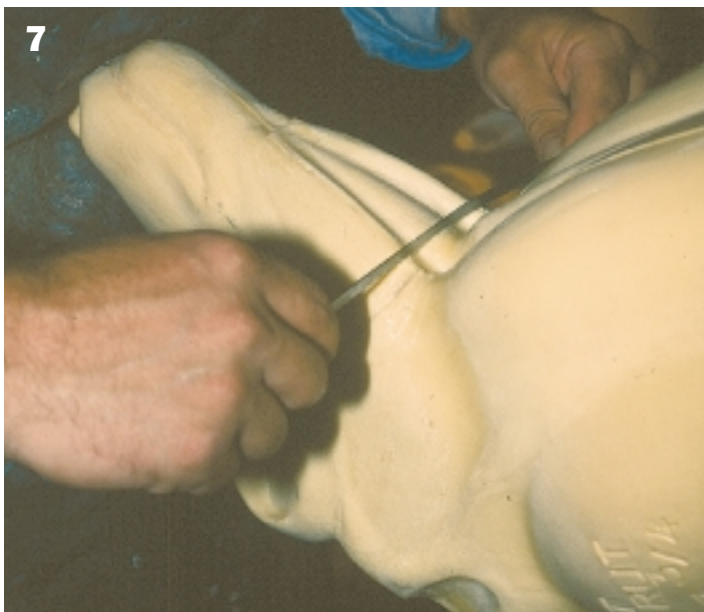
5. To begin the cut, use a thin blade from a hobby hand-



saw, and carefully begin to cut. Holding the blade with your hand and watching closely from side to side gives you complete control of the cut.



6. Continue the cut to the back corner of the lip and then continue along the line following the zygomaticus muscle.



7. Once the first cut is made, flip the mannikin over and make the second cut until it junctures with the first cut. This is a less critical cut, so a larger hacksaw blade can be used.



8. Once the lower jaw is separated, decide the degree to open the mouth. For this mount, we want the mouth to be opened to a medium degree, approximately 1 inch.

Competitor's note: It is necessary to open the mouth and properly reproduce the inner mouth details if you strive to gain bonus points for an open-mouth entry. These bonus points can be obtained, however, without cranking the mouth wide open and showing everything. Paul's deer proved that a little mouth interior

showing, done *correctly*, is better than all the mouth showing and done mediocre. Master a mouth opened to a medium degree (showing the molars forward) before cranking the mouth open and showing everything down to the small intestines! If you do a slightly opened mouth correctly, you will gain *all* the bonus points.



9. Once the degree of openness was decided, the mouth was tacked in place with T-pins on both sides.

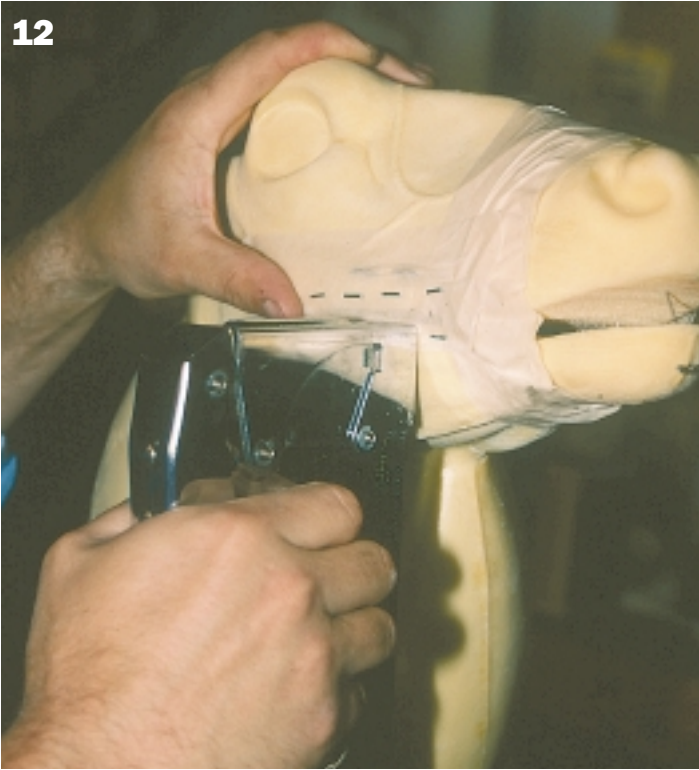


10. Firmly secure the bottom jaw by anchoring T-pins throughout the jaw. Run T-pins up from the bottom and down from the top.



11. The pins are not enough to prevent the foam (which we are about to pour in the mouth) from moving the lower jaw, so it is necessary to wrap tape around the muzzle to prevent the lower jaw from dropping.

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12. Next, place tape along the first and second cuts. Anchor the tape with staples along the top and bottom jaw.

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13. The tape also acts as a dam when the liquid foam is poured into the mouth opening.

14. Here's the jaw secured, dammed and ready for the liquid foam.

15. Using

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polyurethane liquid foam, mix parts A and B evenly (by volume). Use a tongue depressor or stick to thoroughly mix the liquid foam. You will know when the foam is thoroughly mixed by the color of the liquid. When all striations have disappeared and the liquid is one even, creamy color, the mixing will be done. It's time to pour. Place the deer mannikin on its back, prop the mannikin in a "mouth-up" position, and pour the foam. Stand back and let the foam expand, settle and cure. Most foams cures in a minimum of 30 minutes.

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16. Let the foam expand and spill over the sides. Do not touch or try to clean up the foam until it has hardened. Touching the foam in this soft stage will only create a sticky mess. Once the foam has hardened, trim the excess away with a knife.

17. Once the foam has completely hardened, use a hobby sawblade to cut out the excess foam in the mouth area. Next, separate the

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lower jaw from the mannikin by making the same two cuts that we made before to remove the jaw.



18. Now it is time to prepare the lower palate half-cast for placement in the lower jaw. The lower palate cast that we have created includes the natural, full lower lip. In the previous molding and cast procedures, we went to great lengths to rehydrate and create a realistic re-creation of the lower lip-line. Now, we want to be sure to save this lip-line without causing any damage. In this photo, I have placed my thumbnail about 1/8-inch below the front lip-line. This is where we will trim the edge of the cast in preparation for placement in the lower jaw.



19. The side lip-line is saved in the same way as the front. The only difference is that there is much more lip on the side, so you will need to save more lip in this area. I have placed my thumbnail where the juncture of the hair and the smooth lip would be. This is the line that we want to trim up to, but not past. Trimming past this area will destroy the natural lip-line that was so hard to re-create. Not trimming enough will result in the hair juncture being too low and in the wrong place.

20. The bulk of excessive casting material can be removed quickly with a hacksaw blade.

21. Once the bulk of the excess casting material is re-



moved, use a Dremel grinder for the final detailed forming and grinding. Again, only trim to the areas explained in the previous few photos.



22. Here it is! A beautiful lower jaw re-creation that has been trimmed precisely to the lower lip-line. Notice that at the lip-line, there is an "edge." This edge is created purposefully and is the depth of the tanned deer hide at the lip-line. Accordingly, the hide can be glued in place at the "edge" of the lip once the natural lip has been cut from the tanned hide.



23. We will be using the molars from the jaw-only cast shown on the right. Any extra casting beyond the molars is cut away. Here I am cutting just in front of the first molars.



24. Place the prepared lower palate into the lower jaw of the mannikin. Use a Sharpie marker to draw where the "edge" has been created. Roughly align the palate with the lower jaw and use the Sharpie to make a line where the lower jaw needs to be cut to accommodate for the cast palate. Basically, you want to match the back corner of the palate casting with the back corner of the lip. Also, you want the bottom of the front lip to align at the edge where the cut was made with the hobby saw blade. Note: the lower palate casting should be scrubbed clean in warm water and



Dawn dish washing liquid to remove any mold release material. If the mold release material is not removed, any paint that you spray on the palate will bead up and run.

25. Once a rough line has been drawn, it is easier to use a Dremel grinder to remove material to accommodate for lower palate placement.



26. The lower palate and lower jaw have been properly fitted. The lower palate has been secured to the lower jaw with hot glue.



27. To prepare and fit the jaw from the molars on back, draw lines that indicate where the jaw from the molars on back will be placed.



28. Here, Paul is drawing the last tracing of the lower jaw in preparation for foam removal prior to jaw placement.



29. Again, it is easier to use a Dremel grinder to remove where the lower jaws will be placed.



30. Again, the lower jaw needs to be washed and dried in warm water and Dawn to remove mold release material.

31. Cut the lower jaw just in front of the molars.



32. Align each jaw side with the front palate and check to see if everything is matching correctly. If not, remove or add material wherever needed to achieve proper alignment.



33. The jaws have been aligned and hot-glued in position. Also, foam has been removed between the jaws to allow for later placement of the tongue.



34. Use Apoxie Sculpt to create a smooth lower platform for the tongue to sit on. Apoxie Sculpt is also used to smooth the juncture between the front palate cast and rear jaw casts.

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35. The juncture between the lower foam jaw and cast palate needs to be filled and smoothed with Apoxie Sculpt. Remember the nice “edge” we created to juncture the hide with the cast palate? Well, be sure to smooth Apoxie Sculpt up to that edge, *but not over it!*

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36. A little final smoothing and the lower jaw is completed.



This article marks the second- of a four-part article series. We have gone from a whitetail deer carcass to a perfectly molded top/bottom palate with the mannikin altered and the bottom palate placed.

The next two articles will explain the placement of the top palate, re-creation of the tongue, continued mannikin alteration, and interior mouth coloration. I look forward to writing the next two articles and hope you enjoy reading them! ■

PAUL CALES (left) won Best in World Whitetail Deer at the 1997 World Taxidermy Championships®. DAN RINEHART (right) sculpts for White-tail Specialists, a two-year old taxidermy supply company in Janesville, Wisconsin. He offers weekend training courses and a wholesale fish service. Contact him at 608-755-5161.